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The GCP offers](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=38.064) [several products to help with this, of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=40.907714285714285) [which two browser-based technologies are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=43.07449999999999) [particularly worth of detailed study.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=45.2322) [These are Cloud Datalab for on-cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=47.44366666666667) [Python development with cloud-source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=50.422999999999995) [repositories for committing and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=52.542500000000004) [integrating code with the version-control](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=54.642) [system. 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You will learn how you can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=96.601) [configure your Datalab instance to share](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=99.13283333333334) [in a team environment and how Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=101.00875) [offers easy integrations with other GCP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=104.066) [services such as Cloud Storage and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=106.51) [BigQuery, wire magic functions, as well as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=1b82d43c-41f5-4cab-b8f6-f90b250cc839&clip=0&mode=live&start=107.694) [wire client libraries. 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Cloud Datalab is one](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=31.654333333333337) [of the most popular services on the GCP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=33.505) [because it's the best and easiest way to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=35.63100000000001) [run Python, and that has become the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=38.44044444444443) [hottest tool for prototyping and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=41.212428571428575) [visualizing data these days. 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The Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=50.728) [Source Repos are a full-fledged Git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=53.472857142857144) [service on the GCP. They allow us to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=55.5748)[mirror repositories from other hosted services such as GitHub and Bitbucket.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=0&mode=live&start=58.92999999999999)

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As far as the prior](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=41.738) [knowledge of GitHub goes, there's an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=44.08600000000001) [excellent course here on Pluralsight](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=45.73771428571428) [called GitHub Fundamentals. Let's now turn](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=47.88375) [to the course outline. 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We go really](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=74.5345) [deep, and we learn how to create and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=76.69099999999999) [connect to our Datalab VM, we learn what](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=79.15042857142858) [all happens under the hood on the platform](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=81.93166666666667) [when we connect to our Datalab VM, we work](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=84.15124999999999) [with Datalab in a team environment, and we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=86.47287499999999) [explore the use of magics, which will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=89.03714285714285) [allow us to use BigQuery and Google Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=91.78074999999998) [Storage. 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That leads nicely into the last](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=99.96024999999997) [module of the course, which focuses on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=102.06324999999997) [complete development lifecycle. 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We'll set](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=110.33816666666667) [up a trigger so that we have an app engine](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=112.65899999999999) [deployment. Each time a developer makes a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=115.15633333333334) [change to the source code and pushes to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=117.06966666666668) [the Cloud Source Repos, a Cloud Build is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=119.81075000000001) [going to be triggered, and the output is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=121.64087500000001) [going to be pushed out into production. 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A quick word about all of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=135.39324999999994) [demos, these are all based in a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=137.3936666666667) [hypothetical ecommerce retailer called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=139.055)[Spikey Sales. As the name would suggest,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=141.171) [Spikey Sales specializes in flash sales.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=144.145) [This makes it vulnerable to constant](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=146.8) [spikes in user traffic. This is the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=149.2771428571429) [precise reason why Spikey Sales has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=151.3314285714285) [decided to move to the cloud, specifically](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=153.26687500000006) [to the Google Cloud. The model of cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=155.48199999999997) [computing where you pay as you go, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=158.25849999999997) [where you do not need idle compute](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=160.48180000000002) [capacity lying around during off-peak](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=161.83960000000002) [periods suits the business model of Spikey Sales just perfectly.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=1&mode=live&start=163.71966666666668)

[Google Developer Tools](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live)

[The Google Cloud platform offers a whole](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=2.284) [range of developer tools. Let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=3.785) [and familiarize ourselves with some of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=6.6194999999999995) [these. Let's start out by listing these](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=8.427125000000002) [tools. These are what the GCP considers](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=10.852) [developer tools. The Cloud SDK, Google](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=15.0915) [Deployment Manager, the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=18.394666666666662)[Repositories, Cloud Tools for IntelliJ and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=20.8905) [PowerShell, and finally Cloud Tools for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=23.54333333333333) [Visual Studio. Now this is the list of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=26.18028571428572) [developer tools currently listed off of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=28.546249999999993) [the GCP page. Some of these obviously](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=30.55928571428571) [mentioned here. Some of the others are a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=33.89733333333333) [little strange, Deployment Manager, for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=36.511250000000004) [instance, is more of an Infra as Code-kind](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=38.08174999999999) [of technology. In this course, our focus](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=42.514111111111134) [is going to be on Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=44.54850000000002) [Repositories and another tool, which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=46.382666666666665) [doesn't even merit mention in Google's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=48.644666666666666) [list, which is Cloud Datalab. For the sake](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=50.957499999999996) [of completeness, however, let's quickly](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=54.690000000000005) [talk about each of these in turn. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=55.80988888888889)[Cloud SDK refers to a set of libraries and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=58.33266666666666) [tools meant for working with the GCP. For](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=61.099) [instance, these allow us to run gcloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=63.935125) [from our local machine or write](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=66.099) [programmatic clients in Python, Java,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=68.533) [Ruby, and a whole bunch of other languages](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=71.30800000000002) [to use GCP services. The Cloud SDK also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=73.57022222222223) [interacts and works with various package](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=77.13942857142855) [managers including Maven, npm, and so on.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=79.42883333333332) [Next in Google's list is the Google Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=83.491) [Deployment Manager. This is I think is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=86.244) [bit of a misfit here. Deployment Manager](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=88.236) [is an Infra as Code technology. It](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=90.60025) [provides a way for declarative](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=93.854) [provisioning of infrastructure using YAML](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=95.629) [files. This is a programmatic way to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=98.09733333333335) [deploy and roll back complex](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=100.05050000000001) [architectures. In addition to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=103.393) [straight-up YAML files, we can use Python](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=105.32614285714286) [and Jinja2 templates to parameterize](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=107.2735) [configurations. So for instance, if you](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=109.707) [found yourself having to create 1000 VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=112.39828571428575) [instances, each of which had a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=114.78516666666664) [user-specified hostname which you needed](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=117.67142857142859) [to read in from a file, Deployment Manager](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=119.31666666666665) [might be your tool of choice on the GCP.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=121.13114285714285) [Next up is the Cloud Source Repository](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=124.1091111111111) [service. This is going to be studied in a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=127.80733333333332) [great deal of detail in this course. It's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=129.65899999999993) [basically private Git repos hosted on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=131.85000000000002) [GCP. This service provides an automatic](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=134.95233333333334) [sync with hosted repos on some other](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=137.51228571428572) [providers such as GitHub and Bitbucket](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=139.81533333333334) [with automatic sync in both directions. In](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=141.80185714285713) [addition, it integrates nicely with other](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=145.9535) [GCP tools such as cloud builds. Those](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=148.46428571428572) [integrations can be used to wire up some](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=150.826)[pretty nifty CI/CD pipelines. Cloud Tools](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=153.51239999999999) [for IntelliJ are a plugin for the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=157.231) [Source Repos, they integrate with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=159.7782857142857) [Stackdriver debugging, and can be used to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=161.729) [deploy directly to App Engine. This tool](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=164.001) [is free for IntelliJ users. PowerShell is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=167.72600000000003) [a popular technology amongst folks who](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=170.63299999999998) [need to write a lot of builder scripting,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=172.65055555555557) [and the Cloud Tools for PowerShell help](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=174.87716666666665) [with exactly that. They support features](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=177.07160000000002) [such as PowerShell pipelining, you can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=179.436) [invoke cmdlets, and in general create and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=182.37399999999997) [manage GCP resources with pretty much as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=184.86785714285708) [much as much flexibility as you would](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=186.50883333333337) [using gcloud. Cloud Tools for PowerShell](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=189.43600000000006) [are free for all users. And the last set](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=191.82822222222222) [of tools we are going to discuss here are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=194.39039999999997) [Cloud Tools for Visual Studio. As their](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=196.85662499999998) [name would suggest, they offer a way to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=199.5985) [build .NET and Windows applications, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=201.3852857142857) [can run and test locally, and then go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=203.33144444444446) [ahead and deploy directly to Windows VMs,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=205.215) [which are running IIS and ASP.NET. We can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=210.071) [use Cloud Explorer to browse GCP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=213.47575) [resources, and these once again are free](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=215.371) [for all users. This was a very quick and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=218.012) [very high-level introduction to some of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=219.973) [the tools which Google lists as being](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=222.09871428571427) [useful for developers. We will now turn](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=224.30185714285713) [our attention to specific tools, the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=226.42542857142865) [Source Repositories and Cloud Datalab,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=230.83333333333331) [which provides hosted IPython Notebooks](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=233.2142) [running on GCP Compute Engine VM instances.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=2&mode=live&start=237.071)

[Introducing Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live)

[Let's introduce Google Cloud Datalab, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=1.724) [let's understand why it's maybe the single](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=3.8428571428571425) [most popular service offered on the GCP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=6.024857142857143) [right now. Let's take as an example the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=8.936499999999999) [workflow involved in building a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=12.725999999999999) [machine-learning model. The first step is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=13.946) [to collect data, as much of it as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=16.56442857142857) [possible, and then go ahead and train a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=18.969555555555555) [model, which tries and makes sense of that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=21.287500000000005) [data, and finally deploy and host that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=23.7218) [model. In reality, of course, this process](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=26.822714285714284) [is iterative because it's almost never the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=29.083) [case that our hosted model is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=31.812) [perform well and perpetually, and so at](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=34.238) [some point we will once again begin the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=37.351) [cycle by collecting data, cleaning it,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=38.808) [analyzing it, and so on. That's why this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=41.309) [step of collecting and working with data,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=43.54871428571429) [visualizing it, is perhaps the most](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=46.4286) [important in the whole ML workflow. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=48.5965) [process is surprising involved. The first](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=51.174142857142854) [step in this process involves collecting](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=53.87042857142857) [data from many sources, relational](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=55.7878) [databases, big data warehouses, sensors,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=58.7428) [and other sources of streaming data. Then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=61.98914285714286) [once all of this data has been gathered](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=64.911125) [into one place, we've got to go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=66.84712499999999) [clean the data that involves at the very](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=69.28625000000001) [least removing missing values and dealing](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=71.83442857142857) [with outliers. The clean data can then be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=74.495) [subjected to various mathematical](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=77.88574999999997) [preprocessing such as standardizing and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=79.54) [normalizing, converting categorical](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=82.52533333333332) [variables into numeric or one-hot encoded](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=84.58350000000002) [data, and finally we are ready to actually](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=88.11859999999999) [make sense, calculate summaries, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=90.26824999999997) [visualize this data as a prerequisite to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=93.62528571428571) [putting it into a model. As data science](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=96.09049999999999) [and machine learning have become really](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=98.10171428571427) [hot fields in the past few years, one](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=99.62625)[technology has immerged as a big winner,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=101.80375) [and that is Python. A famous statistic](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=104.203) [from The Economist magazine mentioned that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=106.95250000000001) [there were more searches for the term](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=108.946) [Python in 2017 than there were for Kim](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=111.49799999999999) [Kardashian. And this is why Google Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=115.5644) [Datalab is perhaps the most popular tool](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=117.61925000000001)[on the GCP. It offers Jupyter Notebooks](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=120.37125) [hosted on Compute Engine VM instances,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=122.80266666666667) [each Datalab VM instance is running a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=125.827) [Docker container, which developers and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=128.626) [data scientists can connect to. And this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=130.9001666666667) [in a nutshell is why Cloud Datalab has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=133.64266666666666) [emerged as the standard way to run Python](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=135.7935) [on the GCP. It offers built-in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=138.5362857142857) [authentication so that you are not mucking](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=140.902) [around with service account credentials or](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=143.581) [JSON key finds. It allows developers and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=145.523) [data scientists to make use of Jupyter](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=148.131) [Notebooks, so there's no loss of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=150.319) [compatibility or platform lock-in, and it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=153.004) [supports Python, SQL, and JavaScript for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=156.5334) [working with BigQuery. In addition, it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=159.17249999999996) [also has magics from Datalab, which make](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=161.53671428571428) [it really pretty easy to work with both](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=163.6925714285714) [BigQuery and Cloud Storage. Now just in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=166.72349999999997) [case you are not familiar with the idea of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=169.0753333333333) [interactive notebooks or the IPython](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=171.36157142857147) [Notebooks, let's very quickly understand](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=173.6146) [what they are. These are special ways of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=175.637) [writing Python code, which is then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=178.93014285714293) [executed interactively within a browser.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=181.56699999999998) [So the standard format is going to be the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=183.87671428571429) [.ipynb, or IPython Notebook, not a txt](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=187.91466666666668) [file, but a .py extension. These](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=191.33328571428564) [notebooks, or Jupyter Notebooks as they](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=193.89416666666665) [are often called, combine code, markdown,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=196.42700000000002) [which includes very high-quality](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=198.5778) [documentation of the code, and the results](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=200.841) [of the code execution. If you've never](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=202.843) [used interactive notebooks for developing,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=206.52299999999997) [you'll find them really quite amazing.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=208.19966666666667) [Datalab adds a little extra over and above](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=210.64557142857146) [Jupyter, and a part of that has to do with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=214.564) [its connections to a Git Repository. So](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=217.30960000000002) [the code running in a Datalab instance is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=219.69487500000002) [integrated with a Cloud Source private](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=222.13128571428572)[Repo, the code in a notebook gets](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=224.407) [auto-saved, but that's only to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=226.65) [persistent disk of your local GCE VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=228.447) [instance. Datalab makes it really easy to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=231.99074999999996)[explicitly commit and push local changes](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=235.07442857142854) [using Git, and Git in turn is going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=238.34328571428574) [running on that persistent disk associated](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=240.6046000000001) [with the Datalab instance. 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By default, that service](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=248.66177777777781) [account is going to be the Compute Engine](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=250.69628571428572) [service account. And within Datalab, there](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=253.3065) [is a backend process called the kernel,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=255.6664285714286) [which maintains the variables and the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=257.885) [state of the code and executes all of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=259.42871428571436) [source code. It also interacts with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=261.7764) [other GCP services using the credentials](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=263.981857142857) [associated with that service account.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=266.08940000000007)[Datalab abstracts the developer from the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=268.435) [nitty gritty of working with the service](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=271.713) [account and its credentials, but even so](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=272.764) [there are times when we need to add roles](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=275.412) [to this service account, that's because](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=278.111) [all identity and access management is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=279.88957142857146) [managed using role-based access control on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=282.1876666666666) [the GCP and on all of the other major](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=285.6437142857143) [cloud platforms. This linkage with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=288.7388888888887) [compute engine service account brings to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=290.6260000000001) [for an important point. The Datalab VM is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=292.45719999999994) [after all just another VM. Datalab is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=295.796) [packaged as a container, which is running](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=298.687) [on this VM, but that VM is still](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=300.52590000000004) [accessible to all users in that project,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=302.69928571428574) [just like any other VM. And in particular,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=304.8775) [we've got to be very careful about the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=307.7038749999999) [persistent disk of this VM because after](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=309.19828571428565) [all it contains all of our code and the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=311.32200000000006) [IPython Notebooks. So the persistent disk](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=315.00460000000004) [of our Datalab VM is especially important.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=317.08455555555554) [The notebooks are going to be auto-saved](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=319.616) [to that location. We should be careful to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=321.407125) [periodically push our code to a Git repo,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=323.749) [preferably in the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=326.701) [repositories. If we do not push our code](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=328.66600000000017) [out and we delete the disk or the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=330.7355000000002) [instance, our code is likely to be lost.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=333.60316666666677) [As an aside, Datalab periodically backs up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=335.408) [all of the notebooks into a Cloud Storage](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=339.308) [bucket, but these backups happen daily,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=341.159) [weekly, and hourly, so it's very possible](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=343.973) [that your latest work will be lost. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=346.618) [quickly discuss Datalab pricing. Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=350.24379999999996) [runs on VMs and the pricing for each VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=353.18287499999997) [instance is based on the provisioning and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=356.20142857142855) [the usage. There are no additional costs](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=358.7455) [for Datalab by itself, nor are there](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=361.01885714285726) [additional charges for import or export,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=363.53171428571426) [so you can transfer your IPython Notebooks](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=365.47349999999994)[between your on-prem Jupyter and your](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=367.93399999999997) [Datalab VMs without any additional](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=370.53014285714295) [specific cost. The pricing for cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=373.35133333333334) [products varies a lot over time, so it's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=376.3455000000001) [always a good idea to check the latest](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=378.2607777777778) [docs and see where things are at](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=380.53762499999993) [presently. And one last little detail](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=382.8961428571429) [worth mentioning, the Cloud Datalab VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=385.331) [will automatically shut down after an idle](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=387.84528571428575) [period. That idle period is configurable,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=390.90833333333336) [by default the timeout is set at 90](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=392.97200000000004) [minutes. This is intentional, it's a way](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=396.109) [to conserve resources and protect you from](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=398.7401428571429) [unpleasant surprises when you get your GCP bill.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=3&mode=live&start=401.18000000000006)

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[In this video, we are going to introduce](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=2.25) [and discuss Cloud Source Repositories. As](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=3.767) [their name would suggest, they provide a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=6.64525) [managed service for private Git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=8.649) [repositories, which also have easy](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=11.278) [integration with other GCP services,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=13.213) [notably, Cloud Build and Stackdriver. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=15.104) [Cloud Source Repository service comes with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=19.939249999999998) [its own source browser, which we can use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=21.631999999999994) [to examine code. We can go ahead and build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=24.402857142857144) [an unlimited number of private Git repos,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=26.99325) [we can automatically build and test code.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=29.939) [As we shall see in the demos up ahead,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=32.495) [this is a great way to build up CI/CD](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=35.511) [pipelines for continuous integration and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=37.399) [continuous delivery. We can also use these](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=40.131) [source repos to debug in production if we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=43.604) [combine this service with Stackdriver](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=45.967) [debugging. And these are a fully-fledged](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=48.61366666666667) [Git implementation, and so they provide](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=50.94966666666667) [versioning, aliasing, and everything else](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=53.198) [which we would expect from Git. The Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=55.72) [Source Repos are combatable with GitHub](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=58.54371428571429) [and Bitbucket, so we can link repos hosted](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=60.410000000000004) [on those platforms to the Google Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=63.50371428571428) [platform, and automatic sync will occur,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=65.7025) [this sync is bi-directional. The Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=68.99380000000001) [Source Repos also implement a security](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=72.19985714285713) [feature called security key detection. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=74.01066666666667) [idea is that one should never be storing](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=77.634) [security keys in version control. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=79.65533333333333) [Cloud Source Repo ensures that this best](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=82.89014285714286)[practice is followed because it will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=85.068) [automatically detect and block attempts to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=87.222) [perform Git push operations on key files.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=90.232) [This is true for both GCP service account](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=94.148) [credentials, that's JSON key files, as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=96.46) [well as other common key formats such as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=98.55822222222223) [RSA, DSA, and PGP keys. Because the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=101.288)[Source Repos are so directly based on Git,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=105.62557142857143) [it's worth our while to spend just a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=108.0735) [little bit of time understanding how Git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=109.73) [works. Git is based on something known as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=112.21975) [a tree directory structure. Those three](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=115.2036666666667) [trees or three directories are called the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=118.226) [working directory, the staging area, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=120.6705) [the .Git directory, which is also known as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=123.39028571428572) [the repo. The Git directory is directly](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=127.11299999999999) [controlled by Git, this stores all of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=129.33871428571433) [metadata and the object database. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=131.6282500000001) [the most important part of Git, and this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=135.147) [is copied over onto your local machine](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=137.26975) [when you clone a Git repo from a server](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=138.77455555555554)[somewhere. And the staging area is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=142.63314285714287) [subset of the Git directory, which stores](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=145.12766666666667) [information about what is going to be in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=147.52766666666668) [your next commit or your next push out](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=150.07988888888886) [into the remote repo. The staging area is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=153.00999999999996) [often called the index. The working tree](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=157.09300000000002) [or working directory is a single checkout](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=159.94174999999996) [of one version of a project. So the files](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=161.98900000000003) [are going to be pulled out of a compressed](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=165.40329999999997) [database, which is present in the .Git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=167.26157142857144) [directory and made available for you use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=169.56242857142857) [in uncompressed form in the working](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=172.89622222222224) [directory. So this diagram assumes that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=175.92688888888895) [you've already cloned a repo from some](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=177.9291428571428) [server somewhere, and you have a copy, a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=180.80014285714282) [compressed copy of all of the files in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=183.13766666666675) [your Git directory. Then your first step](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=186.01325000000006) [is to check out your files, that is you](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=188.15000000000003) [copy them from the Git repo into your](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=190.32311111111113) [working tree. You go ahead and change and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=193.30319999999998) [edit those files in your working](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=196.01150000000004) [directory, once you are done, you go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=197.58880000000002) [and stage the fixes, this will transfer](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=199.8026666666666) [them into the staging area or the index,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=201.77325000000002) [and when you are really serious, you will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=204.3516666666666) [go ahead and do a commit, that's going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=206.5836666666667) [take the files and copy them over into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=208.56900000000002) [your local Git directory. Note that even](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=211.30999999999997) [at the end of this all, the changes that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=213.884) [you made are still only in your local](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=216.026) [machine, to get pushed out onto the remote](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=218.10925) [server, you've got to do a Git push.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=221.2606) [There's another concept, that of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=223.795)[branching, which comes in handy if you](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=225.52749999999995) [want to develop features in isolation from](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=227.11133333333325) [each other. The master branch is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=229.5226666666667) [be the default branch, which everyone](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=231.67300000000003) [works on. At any point in time, we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=233.96500000000003) [spawn off other branches, those branches](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=236.63488888888884) [will then be used by subsets of a team for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=238.4808571428572)[development, and when the code in those](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=243.3475) [branches is ready for primetime, they get](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=244.62849999999995) [merged back with the master. This was a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=246.49342857142855) [really superficial introduction to Git,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=249.31142857142862) [which is quite a world in and of itself,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=251.642) [but this is enough for us to get the best](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=254.215) [out of the Cloud Source Repositories.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=256.445) [Let's move on and quickly discuss the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=258.996) [pricing of the Cloud Source Repos. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=260.226) [service is free for up to 5 project users](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=263.436) [per billing account. There are also limits](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=266.14375)[on how much data we can transfer in and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=268.66344444444445) [the egress allowed. So there's a free tier](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=271.8850000000001) [of 50 GB of storage and 50 GB of egress.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=274.4745) [Once we get passed that, there's going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=277.473) [be a charge. Like with all other](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=279.193) [cloud-based services, pricing varies quite](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=282.299) [dramatically over time, so I would highly](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=284.553)[recommend that you check out the latest](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=286.83750000000003) [prices from the Google Docs. The link of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=288.77525) [those pricing docs is on screen now. That](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=291.73730000000006) [gets us to the end of this module, which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=294.89722222222224) [packed in all of the theory that we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=296.26800000000003) [going to cover in this course. We started](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=298.50757142857145) [with an introduction to developer tools on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=301.0986666666667) [the GCP. We then discussed Cloud Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=303.00820000000004) [in some detail. We spoke about how it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=305.9816249999999) [works, it's based on GCP VM instances, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=308.6219999999999) [it can be used to prototype and visualize](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=310.8997777777777) [data. Datalab integrates with the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=314.95149999999995) [Source Repos, which not coincidentally are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=317.0005000000001) [the next topic in the course. These are a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=319.61583333333334) [service for fully-fledged Git repos](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=322.4927142857144) [maintained on the GCP. It's also possible](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=324.85560000000004) [to use these repositories to mirror other](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=328.4665) [repos hosted on GitHub or Bitbucket, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=331.053) [integrate these with other services such](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=333.93685714285704) [as Cloud Build and Pub/Sub, and build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=335.97300000000007) [fairly nice CI/CD pipelines. We will now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=339.16042857142855) [plunge into a series of demos, which cover all of these different topics.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=846a07ec-ac4f-40f5-8fb5-e5d0f78741e7&clip=4&mode=live&start=342.48800000000006)

[Using Cloud Datalab for On-cloud Development](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live)

[Module Overview](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live)

[Hello, and welcome to this module on Using](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=0) [Cloud Datalab for On-cloud Development.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=4.975) [This module is full of demos. We are going](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=7.909) [to explore all of the rich functionality](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=9.91866666666667) [of Datalab. We will see how to create a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=13.242333333333333) [Datalab VM instance and go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=16.25988888888889) [connect to it. We will also see some of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=18.644374999999993) [the actions performed under the hood by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=20.86025) [the GCP, such as provisioning a VPC](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=22.997571428571426) [network and creating a backup Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=26.00114285714285) [Storage bucket. We'll see how convenient](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=28.78333333333334) [it is to access GCP APIs using Datalab,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=30.684500000000007) [and also how painful it can be to set up a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=33.51014285714286) [service account and run Python code](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=36.64344444444445) [directly from Cloud Shell. The role-based](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=39.4002857142857) [access control made available by Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=42.74666666666667) [is a big attraction. We will also explore](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=45.50650000000001) [this in the context of working in a team](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=48.58233333333334) [environment, and creating a Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=51.72280000000001) [instance on behalf of someone else.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=53.584428571428575) [Jupyter Notebooks have the idea of magic](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=56.036500000000004) [functions, both cell and line magic, which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=58.82499999999999) [serve as shortcuts, syntactic sugar for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=61.5295) [common operations. And Datalab has its own](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=64.41279999999999) [magic functions for Cloud Storage and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=67.12037500000002)[BigQuery. We will make use of those, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=69.74275) [see how they make it easy to integrate](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=72.111) [with other GCP services. And finally we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=75.08411111111114) [will round out the module by exploring how](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=77.42033333333332) [we can commit code from a Datalab notebook](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=79.374) [to an in-built Cloud Source Repo. That's a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=82.66633333333333) [lot of ground to cover. This is a heavy module, so let's go ahead and get started.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=0&mode=live&start=85.78366666666665)

[Creating a Datalab Instance](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live)

[Let's go ahead and get started with our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=1.981) [first demo. Here we are going to start by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=3.724) [creating and connecting to a Datalab VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=5.406) [instance. We will then go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=8.507875) [explore the Source Repos associated with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=10.501999999999999) [that instance, and check out some of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=12.613666666666669) [actions undertaken by the platform behind](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=14.597285714285713) [the scenes, such as creating a Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=16.058333333333334) [Storage bucket for periodic backups and a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=18.683571428571426) [VPC network. Let's get started. We are on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=22.282999999999994) [the Web Console, and we are signed in as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=24.30874999999999) [Spikey Developer. The project that we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=27.444333333333343) [currently working in is called spikey-dl.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=29.130428571428574) [Let's click on the three horizontal lines](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=32.548) [over on the top-left, this is called the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=34.754) [Navigation menu, also sometimes known as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=37.151) [the hamburger, and it's the usual starting](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=40.422) [point for pretty much anything that we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=42.345) [going to do on the Google Cloud platform.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=43.588) [Let's go ahead and find the APIs and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=46.844) [Services menu item, click on Dashboard.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=49.064) [This will take us into a pane where we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=52.929) [ENABLE the APIs AND SERVICES required for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=55.144) [this course. Next we are taken to the API](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=57.966) [Library, where we type in the compute](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=61.578) [engine API term into that search box, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=63.36) [go ahead and enable it. Datalab is hosted](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=67.0955) [on Compute Engine VM, and that's why this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=70.56142857142856) [step is required. Next, let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=73.27171428571428) [do the same for another set of APIs, these](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=75.77877777777779) [are the Cloud Source repository APIs. So](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=78.39087499999997) [we find ourselves back in the API](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=81.73625) [explorer, type cloud source repositories,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=83.6) [and ENABLE those APIs as well. This is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=86.418) [step that we need to perform because each](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=90.64999999999998) [time we provision a Datalab instance, a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=92.18971428571427) [repo is going to be created for us in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=94.49966666666668) [Cloud Source Repositories. We are now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=98.11400000000002) [ready to actually get started with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=100.49374999999999)[Datalab, so let's go ahead and open up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=101.59222222222222) [Cloud Shell. Wherever we find ourselves in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=104.41) [the Google Cloud platform, we can always](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=108.504) [locate the Active Cloud Shell button in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=110.664) [the blue ribbon up top on the right. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=113.93212500000001) [is going to open up a browser-based](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=117.742875) [terminal window, this terminal window is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=119.45)[running on an ephemeral VM, so we should](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=122.085) [not use this, convenience should run very](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=124.776) [long-running commands, but Cloud Shell is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=127.619) [pretty much the most popular way to make](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=129.796) [use of the JCP services. Let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=131.599) [and increase the terminal font size just a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=136.04985714285715) [little bit. Then notice how the name of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=138.3076666666667)[the project is set as an environment](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=140.80799999999994) [variable PROJECT\_ID. That also appears](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=144.53733333333332) [within the prompt. This makes the prompt a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=147.34599999999998) [little verbose, so let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=149.48857142857145) [export a simpler prompt, which is just an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=151.102) [arrow. This is so we have more screen real](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=154.72133333333332) [estate for the commands. The first command](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=156.70133333333342) [we need to run is the sudo gcloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=159.1211428571428) [components update command. This is not](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=162.41225000000006) [actually required from Cloud Shell, but if](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=164.5648333333334) [you were trying to run Datalab or other](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=166.3835) [commands from your local machine, this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=168.82142857142858) [would be an important first step. On the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=170.59537499999996) [Cloud Shell VM, all components are already](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=174.45374999999999) [up to date. Let's go ahead and install](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=177.01075) [Datalab, that's not required either. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=179.12199999999999) [next command is an important one. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=182.69785714285715) [the Datalab create command, followed by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=185.88333333333333) [the name of the Datalab instance. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=187.98975000000002) [effectively going to provision a VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=191.31925) [instance, and then go ahead and open up an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=193.156) [SSH tunnel, so that we can connect to that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=196.247) [instance. Here the name of the instance is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=200.12420000000006) [spikey-python-datalab. As an aside, if](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=201.813) [you'd like to create the instance, but not](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=204.80766666666662)[open up the tunnel just yet, you ought to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=206.41837500000003) [run this command with the --no-connect](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=209.03977777777783) [flag. We are going to be prompted for the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=211.11514285714287) [zone in which we'd like our VM instance to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=214.377375) [be hosted, let's go ahead and pick number](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=217.1676666666667) [36. That corresponds to asia-south1-b.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=221.16042857142855) [Then a whole bunch of system operations](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=224.586) [are going to take place, starting with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=226.665) [creation of a network. This is a VPC](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=228.52) [network, and this is going to have just](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=231.39359999999996) [the one firewall rule to allow SSH. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=234.02844444444446) [system is also going to create a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=237.665875) [persistent disk for this instance, as well](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=239.058) [as a repo on the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=241.3912) [Repositories. An SSH key is going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=244.1184) [propagated to the instance, and by the end](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=246.4673) [of this process, a connection is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=248.83762500000003) [be open. This is an SSH commit,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=251.14314285714286) [effectively a port forwarding mechanism](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=253.72737500000005) [from our Cloud Shell VM instance to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=255.9753333333333) [actual Datalab instance. As this message](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=260.07485714285707) [tells us, that connection is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=262.3623999999999)[remain open until the command is killed.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=264.12228571428585) [We can click on the Web Preview button](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=267.155) [within the Cloud Shell dialog in order to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=269.221) [connect to the instance. We are going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=271.892) [do that in a minute, but before actually](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=274.56944444444434) [connecting, let's go ahead and examine the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=276.71825) [state of the system. So in the Navigation](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=279.23200000000014)[menu, let's find Compute Engine, and click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=281.78439999999995) [on VM Instances, and there we find that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=283.8744999999999) [our spikey-python-datalab instance has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=286.67428571428565) [come into existence in the zone that we had selected.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=1&mode=live&start=288.88999999999993)

[Datalab Persistent Disk and Network](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live)

[Let's click through and examine the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=2.444) [instance details, and there we find that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=3.609) [it resides on a network called the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=6.155249999999999) [datalab-network. Let's click on that, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=9.693) [we are taken to the VPC network section of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=11.12033333333333) [the GCP. We can see the Description](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=14.46042857142857) [telling us that this is a network for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=16.69025) [Google Cloud Datalab instances, and it's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=19.075874999999996) [of type Auto. So it's got subnets for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=21.674999999999997) [every region out there, we can also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=24.64612499999999) [examine the Firewall rules from the tab on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=26.75642857142857) [the left. We can see that there is just](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=29.84257142857142) [the one Firewall rule created by the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=31.373333333333346) [platform. The name of this Firewall rule](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=35.00050000000001) [is datalab-network-allow-ssh, and this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=37.09957142857142) [going to allow us to SSH into the Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=39.48375000000001) [VM instances. Finally the other two](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=43.85999999999997) [Firewall rules, which we can see here are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=45.83833333333333) [for a different VPC network, that's the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=48.034666666666645) [default network. That's not the network on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=50.45566666666666) [which our VM instance is running. Let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=52.636874999999996) [back to the instance details for our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=56.92425) [Datalab instance, and there we can see the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=58.6395) [service account being used by this Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=61.57414285714286) [VM is the default Compute Engine service](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=63.375142857142855) [account. If you are not aware of this, in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=66.073875)[every project there's going to be a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=69.23299999999999) [service account created for all of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=70.66775) [Compute Engine instances in that project.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=72.269) [And the Datalab instance is going to make](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=75.181) [use of that same service account. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=76.935) [mentioned that every Datalab instance also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=80.66166666666666) [has its own repo created in the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=82.23677777777777) [Source Repositories, so let's check that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=84.531) [out as well. In the Navigation menu, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=86.855) [find Source Repositories, and click on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=89.55242857142858) [Repositories tab. The UI for the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=92.57333333333334) [Source Repositories is about to change, so](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=95.30987500000003) [we click through to the new version. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=96.8858888888889) [find our project, spikey-dl, and when we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=99.3575) [click on the drop-down, we find that there](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=101.63457142857142) [is already a repo there, it's called, all](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=104.12637500000002) [Datalab VMs come with this folder](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=107.39857142857144) [pre-created. We can configure the settings](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=110.54440000000002)[by clicking on the icon over on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=112.85557142857145) [extreme right. When we click on that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=115.80550000000004) [Settings icon, we are taken into a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=117.64500000000002) [drill-down, we can see the repository name](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=119.31044444444443) [and the location. The Permissions tab is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=121.715) [on the left, we click on it, and we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=124.85085714285717) [see that the service account associated](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=126.6914) [with the Datalab VM has got Editor Role](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=128.127) [access to this repo. We click the back](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=131.90055555555554) [button, and now we find the Clone icon](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=134.98411111111113) [next to the Settings. Let's click on that,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=137.20628571428574) [and it's got the instructions there for us](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=139.29000000000002) [to create a local clone of this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=141.15850000000003) [repository. We can see that we have a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=143.56) [preferred authentication method that we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=145.54162500000007) [can choose, let's just go with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=147.75666666666666) [default, Google Cloud SDK. Then are a set](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=149.29416666666665) [of steps to actually clone the repo.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=152.57455555555555) [That's fine, we don't need that right now.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=155.646) [So let's close this dialog and return to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=157.984) [the Settings. We are back to the General](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=159.565) [settings page where we began a moment ago.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=162.551) [Let's turn now to a different tab, this is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=164.685) [the Connected repos tab on the left. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=167.48411111111108) [allows us to mirror different repositories](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=170.04766666666666) [from a hosted service like GitHub or](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=171.80149999999998)[Bitbucket. Then there's the Billing](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=175.39333333333332) [section, this is the Billing account that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=178.0402) [we are using that's called SpikeyBilling.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=180.14899999999997) [Let's hit the back arrow again and head](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=182.158) [back to our repo that's called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=184.44) [datalab-notebooks. We click on it, and we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=187.74171428571424) [can navigate the files in there, the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=189.08933333333331) [Repository root, a README file, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=191.34133333333335) [there are no project notebooks right now.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=193.77425000000005) [We'll head back to the Datalab instance and change that in just a moment.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=2&mode=live&start=197.151)

[Connecting to a Datalab Instance](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live)

[From the Web Console, let's head back into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=1.988) [our Cloud Shell window. Let's now go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=4.269) [and connect to our VM instance. To do so,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=6.587799999999999) [we will make use of the Web Preview button](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=9.193899999999998) [over on the top-right. We select the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=11.233333333333333) [Change port option, and as directed by the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=14.145) [instructions, we change to 8081 and click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=16.82283333333333) [on CHANGE AND PREVIEW. That is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=20.2072) [open up a browser session with our Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=23.302888888888887) [instance. And we can see the same Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=26.897499999999997)[Source Repo that we explored a moment](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=29.374333333333343) [earlier. This is the folder called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=31.130833333333328) [notebooks. If you'd like to stop the VM,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=33.99733333333333) [we can click on the button on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=35.93190000000002)[top-right. There's a big red button, STOP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=38.297833333333344) [VM, above it there's a link for us to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=40.95999999999999) [manage the VM, and down below there's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=43.201888888888874) [information about the default idle](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=45.3) [timeout, which is set to 1 hour and 30](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=47.2062) [minutes. Let's turn back to the file](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=49.68233333333334) [directory information, and there is a docs](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=51.92714285714285) [folder there, which has a wealth of useful](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=54.387142857142855) [tutorials and samples. Let's click into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=56.022) [the tutorials folder, and we can see that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=59.300999999999995) [there are examples there which have to do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=60.63912499999999)[with BigQuery, general data manipulation,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=62.804857142857145) [Stackdriver monitoring, and Cloud Storage.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=64.632) [Let's click into BigQuery, and there are a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=67.663) [wealth of notebooks there for individual](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=69.269) [operations. Let's navigate the filesystem](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=72.89814285714286) [of this VM instance by clicking on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=75.02185714285714) [root directory, that's the datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=77.79528571428568)[directory up top. Now let's click on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=79.99050000000001) [notebooks folder, and let's get started](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=82.67628571428568) [with our first little IPython Notebook.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=84.19949999999999) [Along the way, notice the README.md file,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=86.3154) [which we had also seen in the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=89.4464285714286) [Repo. To create our first notebook, let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=93.40814285714288) [click on the plus icon up top. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=95.156375) [going to bring into existence an untitled](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=98.45299999999999) [notebook, let's change the title to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=100.3775) [something descriptive, let's call it Hello](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=102.493) [World. This is a way to rename the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=104.4508)[notebook. We can then type our Python code](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=107.19319999999998) [and hit Shift+Enter to execute that code.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=109.12266666666662) [Let's run another really simple Python](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=112.803) [command just to make sure that we are able](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=114.168) [to run code here successfully. In the menu](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=116.351) [up top, we can Save and Checkpoint, this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=120.34066666666665) [is going to save our notebook on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=122.39457142857144) [persistent disk attached to this VM. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=125.40171428571426) [we can verify this by changing tabs to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=128.10025) [tab where we are browsing the file](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=130.29199999999997) [structure of this persistent disk.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=132.04800000000003) [However, if we now turn back to the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=133.83742857142857) [Source Repos and hit Refresh, our files](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=137.18849999999998) [are not automatically synched to the repo.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=139.56750000000002) [This will only happen if we commit our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=142.686) [code and then go ahead and push. We'll get](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=145.352) [to that in just a little bit. But this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=148.25688888888888) [point that we just made was an important](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=150.51000000000002) [one. When we save and checkpoint our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=152.11771428571427) [IPython Notebook, all that we are doing is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=154.227125) [persisting them to the persistent disk](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=156.89542857142857) [associated with our VM instance. We are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=159.586) [not actually pushing them out onto our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=162.30025) [Cloud Source Repo. So if we were to delete](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=164.791) [our instance and the associated disk, that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=167.88366666666667) [code is lost. The Datalab is service is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=170.5057142857143) [however backing up our code to a Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=173.3402857142857) [Storage bucket at periodic intervals. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=175.5826666666666) [can verify that this is the case by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=177.61800000000002) [navigating into the Storage Browser, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=180.84125000000006) [there we'll find a bucket, this bucket has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=182.77357142857147) [the same name as our project. We click on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=184.977) [the bucket, it has a folder called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=188.55271428571427) [datalab-backups/, and clicking through we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=191.35816666666668) [find a subfolder for each zone, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=192.74371428571428) [for each Datalab instance, and finally](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=196.314125) [down within is the content. There are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=199.376375) [daily, hourly, and weekly backups on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=202.45042857142855) [multi-regional buckets. Let's click and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=204.928) [download one of those backups to see what](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=206.68985714285714) [it looks like. We open it in our local](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=209.20642857142857) [machine, and we find that it has pretty](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=211.82542857142863) [much the entire file directory structure](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=214.18822222222232) [that we were just browsing. Inside this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=216.42333333333332) [content directory is a datalab folder,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=219.79966666666672) [inside which are the docs, as well as the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=222.88) [notebooks. However when we click into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=226.093) [notebooks folder, we find that our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=227.35257142857137) [notebook has not yet been backed up. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=229.16924999999995) [this shows the dangers of relying on these](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=231.67337499999996) [hourly, weekly, or monthly backups. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=234.3681428571428) [should be diligent about committing and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=236.52442857142861) [pushing our changes out to the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=238.75250000000003) [Source Repo. Let's head back to the Web](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=241.49566666666664)[Console and check out the VM instance, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=243.70074999999997) [SSH into it. This Datalab VM is a VM like](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=246.528) [any other. So this SSH session allows us](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=249.8933333333333) [to run the docker ps command, and that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=251.65199999999996) [shows that our Datalab process is running](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=254.18275000000003) [within Docker. Datalab VMs are basically](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=258.043) [running a special Docker container, which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=260.7222857142858)[has the hosted notebook, as well as a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=262.66399999999993) [number of other data libraries running within.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=3&mode=live&start=265.1314444444444)

[Executing Python Code on Cloud Shell](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live)

[We are now going to take a segue to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=1.818) [execute Python code on Cloud Shell. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=4.5882) [is intentional, we are doing so before we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=6.9163749999999995) [run Python code on Datalab so that we see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=9.418111111111111) [just how much easier Datalab is. We'll see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=12.325714285714286) [how cumbersome it is to set up the service](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=15.29288888888889) [account credentials and use the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=17.049) [non-interactive Python mode. So let's pick](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=18.719) [up the action from a Cloud Shell window,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=21.886000000000003) [where the first thing we are going to do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=24.179750000000002) [is to create a service account. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=27.432999999999996) [something that we do using the gcloud iam](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=30.11525) [service-accounts create command, followed](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=32.2828) [by the name of the service-account, which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=34.463499999999996) [is datalab-services. We will need to point](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=36.917) [an environment variable known as the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=40.303) [application default credentials to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=42.32899999999999) [JSON key file of this service account. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=44.04575) [this is a step which we do not need to do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=46.505875) [with Datalab, and that's one of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=49.314250000000015) [reasons why Datalab is so much simpler. In](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=51.407875000000004) [any case, our service account is created,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=53.79914285714284) [let's now go ahead and list all of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=56.691) [service accounts on this project and see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=58.344) [that there are two, the datalab-services](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=60.415) [account we just created, as well as the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=62.433) [default compute Engine service account,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=65.057) [which is always in existence in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=67.652) [project. We will now need to create a key](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=71.14849999999998) [for this service account called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=73.34559999999996) [datalab-services. It's easiest to do this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=75.4215) [from the Web Console. So let's navigate](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=77.5508888888889) [into the IAM and admin section, click on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=79.594375) [the Service accounts tab, find the service](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=82.60157142857142) [account that we just created, this is the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=85.32914285714286) [datalab-services account, click on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=88.46239999999999)[three vertical dots in the extreme-right](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=90.61100000000002) [corner, and choose the Create key option.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=92.93085714285715) [We'll go with a JSON key, and then CREATE](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=95.789375) [and download the private key to our local](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=99.84899999999998) [machine. We keep track of where this file](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=103.09533333333337) [is, then we switch back to Cloud Shell,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=105.357375) [and click on the Upload file button in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=108.051)[top-right. We navigate to our key JSON](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=109.497) [file, and this now gets uploaded to our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=114.045) [Google home directory, where we can access](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=116.266) [it via Cloud Shell. This next step is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=118.879) [important, we've got to export an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=121.691) [environment variable called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=124.718) [GOOGLE\_APPLICATION\_CREDENTIALS. And we've](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=125.413) [got to set its value to point to our key](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=128.3996) [JSON file. Client libraries, which we'll](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=131.615) [be running inside our Python code, will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=133.9126666666667) [pick up on these credentials, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=135.812125) [effectively our code will run using this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=137.99349999999998) [service account identity. On Cloud Shell,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=141.61128571428569) [we'll also need to run pip installs in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=143.97299999999998) [install our upgrade, whatever libraries we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=146.16619999999998) [need. Here we are going to write a simple](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=148.66924999999998) [script which relies on the google-vision](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=151.03477777777786) [library. Note how we run as sudo. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=153.66100000000003) [installation goes through successfully.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=156.05440000000002) [Before we can actually run our Python](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=158.34) [code, we need to enable the APIs from the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=159.85375000000002) [API explorer as well. So we ENABLE APIS](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=163.3766666666666) [AND SERVICES, find the Cloud Vision API,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=165.59249999999994) [choose it, and ENABLE it. We are now ready](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=168.985) [to actually write our code from Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=171.64555555555555) [Shell, so let's click on the Cloud Shell](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=172.75575) [code editor. We click on the little pencil](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=175.47450000000003) [icon over on the top-right. This opens up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=178.0093333333333) [an interface where we can navigate our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=180.81957142857146) [file structure and create code files.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=183.46228571428566) [Let's create a New Folder, and we'll call](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=185.654) [this folder spikey-image-detection-data.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=187.86) [Within this folder, let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=191.702) [create a new file, this is going to be our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=193.364) [image- detection.py file. Before we code](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=196.455) [up the file, let's also upload the images](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=199.76600000000002) [that we need to work on, so we'll need to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=201.78887500000005) [create a folder for that as well. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=204.04922222222223) [call that datasets, and within this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=206.52885714285713) [folder, we will upload any files that we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=208.568) [require from our local machine. We have a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=212.232) [simple image of a cell phone, so we go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=216.04466666666664) [ahead and upload this file, and find](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=218.72075000000004) [another little minor annoyance, the file](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=220.67533333333333) [has gotten uploaded to whatever directory](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=223.05714285714288) [we happen to be in in our Cloud Shell. So](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=224.6266) [we've now got to move it into the datasets](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=228.21244444444446) [directory. And then when we do that, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=229.86428571428573) [find that the code editor up top updates](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=233.07333333333335) [as well. We are finally ready to start](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=235.41125) [work on our image- detection.py code. So](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=238.4184285714286) [let's get started with the import](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=241.949) [statements. We import the io library, as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=243.64100000000008) [well as the google.cloud vision library.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=246.22233333333338) [We instantiate a client of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=249.74) [cloud.vision library, read in the image](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=251.2614285714286) [data, and we then go ahead and invoke the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=254.93833333333328) [Label\_detection function of our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=257.46) [cloud.vision library. We then print out](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=260.745) [all of those labels to screen. Next we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=263.6308) [perform another image classification. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=266.30266666666665) [go ahead and instantiate an image and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=268.664625) [point it to a URI on the pexels URL. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=271.035) [is repository of three images under a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=275.228375) [community license. Let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=277.268) [invoke the face\_detection method of our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=280.0283333333333) [google.cloud vision. Once that's done, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=283.85300000000007) [exit out of the code editor, cd into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=286.24244444444446) [right directory, make sure that our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=289.5063333333333) [datasets and our Python code appear](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=291.9435000000001)[correctly, and finally after all of this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=293.90000000000003) [jumping through hoops, we are in a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=296.382) [position to run our Python code. And it's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=298.92400000000004) [important that the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=301.29159999999996)[GOOGLE\_APPLICATION\_CREDENTIALS environment](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=301.711) [variable be set correctly in order for our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=304.19) [attempt to access the Google vision APIs](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=307.663) [to be successful. Our code now runs](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=310.02112500000015) [successfully. We can see all of the labels](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=312.8248571428572) [associated with the mobile phone, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=314.6605000000001) [we can also find the results of the face](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=316.6746666666666) [detection, the details of one of the faces](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=319.94057142857133) [in the image is displayed on screen now.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=322.6774444444445) [So we got our code to run successfully,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=326.157) [but it was not interactive, and it took](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=327.896) [quite a bit of effort on our end. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=329.734) [now go ahead and see how easy it's to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=332.87800000000004) [accomplish all of this from with Cloud Datalab.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=4&mode=live&start=334.471)

[Execute Python Code on Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live)

[Let's now go ahead and execute that same](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=2.294) [Python code, but this time on Datalab.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=4.008) [Hopefully this will give us a sense of how](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=7.323) [much easier Datalab makes all of this. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=8.695) [start by running the datalab create](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=13.178714285714285) [command, this time with a lot more options](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=14.983) [specified. We start by explicitly naming](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=18.750111111111117) [the disk, let's call it the datalab-disk.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=21.280999999999995) [We also specify values for the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=23.682) [machine-type, the size of the persistent](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=25.78) [disk, the VPC network-name, which here is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=28.577)[datalab-network, and the idle-timeout. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=32.301) [are changing it from a default of 1 hour](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=35.2999) [and 30 minutes to just 1 hour. We can also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=36.316) [change the service-account which our code](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=40.393) [is going to run under. The default, if you](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=42.400124999999996) [do not include this flag, is the default](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=45.3335) [Compute Engine service account. Here we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=47.905499999999996)[are explicitly requesting Datalab to make](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=49.87233333333333) [use of the service account we created in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=51.43724999999999) [the previous video. That's all we need to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=53.9084) [do, no need to upload the key file, no](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=56.50700000000001) [need to set any environment variables.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=58.44100000000002) [Next, let's specify port 8081 for the port](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=61.045) [forwarding, a maximum of 3 reconnects,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=64.678) [let's also define the project and the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=67.6) [zone. And finally at the end of it all is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=70.49624999999995) [the name of the instance,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=72.37699999999997) [spikey-datalab-server. So we run this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=75.8016) [command, and as always, the persistent](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=77.41250000000001) [disk is created first, then the instance.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=79.27000000000001) [Note that because we had specified a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=82.30685714285714) [preexisting VPC network, the Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=84.90100000000001) [network, there is no additional VPC](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=86.89428571428572) [network provisioned at this point. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=89.00683333333333) [process goes through successfully, and it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=92.1388) [ends with the connection to Datalab being](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=93.758) [open on the port 8081, which we had](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=95.6391111111111) [specified above. Let's now go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=98.016) [connect as always by clicking on the icon](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=101.125) [on the top-right. That button might have](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=103.982) [been named a little more descriptively,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=106.518) [but hey, let's not quibble, let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=108.776) [and click on the CHANGE AND PREVIEW](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=111.225)[button. This will open up our connection](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=113.22349999999999) [with the Cloud Datalab instance. Now we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=115.18599999999999) [navigate straight into the notebooks](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=118.68285714285715) [folder, click on the plus icon up top, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=119.935) [our notebook comes into existence. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=123.76283333333333) [rename it to something descriptive, let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=125.87083333333334) [call it image-detection-notebook. Remember](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=129.25375)[that Datalab runs a kernel, and that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=131.02033333333333) [kernel supports both Python 2 and Python](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=133.5365) [3. The default is Python 2, let's just](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=135.83242857142858) [stick with that for now. We can start](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=138.86242857142858) [typing our code in beginning with the pip](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=141.393625) [install of the google-cloud-vision](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=143.3095) [library, check out how easy it is to get](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=144.661) [this up and running. Next let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=148.27933333333328) [and add some code by clicking on the Add](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=150.40644444444442) [Code button up top. Because Datalab is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=152.80749999999998) [running Jupyter, we can also make use of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=155.577)[IPython magics. If you are not familiar](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=158.66400000000004) [with these, these can be thought of as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=161.2238571428572) [syntactic sugar, these are simple commands](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=163.94924999999995) [which are understood by the kernel. There](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=165.38933333333333) [are two types of magics, line magics and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=168.28383333333335) [cell magics, depending on whether they](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=170.27280000000005) [apply to a single line or more than one](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=172.15699999999998) [line. Here we are making use of a cell](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=175.16966666666661) [magic to run bash scripts from within our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=177.36720000000005) [Jupyter Notebook. We've created a one-line](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=180.65075000000004) [shell script, and we are now going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=183.00499999999997) [display its contents using the cat](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=184.95949999999996) [command. It's simply the pip install](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=186.89040000000003) [google-cloud-vision command. We can Save](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=188.568) [and Checkpoint this code. Again, this is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=191.8884285714286) [only going to save to our persistent disk.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=193.33066666666667) [Now that we've carried out a few](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=195.15033333333335) [operations and saved to disk, let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=197.555) [ahead and restart this server. We do this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=199.68671428571432) [by clicking on the icon in the top-right,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=202.1691) [clicking on the About Datalab button down](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=203.92133333333334) [below, and there's a Restart Server option](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=207.49442857142856) [in there. This dialog also tells us the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=210.16) [version of Datalab that we are running,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=212.32425000000006) [and it confirms that this is indeed based](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=214.595) [on Jupyter 4. In any case, let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=216.135) [and restart this server. This takes us](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=220.872) [back out into a view where we can navigate](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=223.87420000000003) [the file structure. Let's click on this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=226.01119999999997)[image-detection-notebook. And when the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=230.26639999999998) [IPython Notebook opens up, we can find](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=231.66757142857145) [that the old code, as well as the old](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=233.30540000000002) [results are still maintained. Let's now go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=236.39633333333336) [back out into the Datalab home directory,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=239.42033333333333) [let's create a new folder, and let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=241.73433333333332) [ahead and upload our datasets into it. So](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=245.26100000000002) [let's call this the datasets folder, check](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=247.52225) [out how much easier it is to do this using](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=249.67877777777778) [a web console than using Cloud Shell. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=252.995875) [now we can Upload whatever files we'd like](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=255.76014285714288) [directly into this folder. So we have our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=258.5465000000001) [cellphone.jpg file, which gets uploaded](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=261.8893333333333) [directly into the persistent disk of our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=263.54100000000005) [Datalab VM. This cellphone.jpg is now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=266.2743333333333) [going to be referenced in our Python code.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=268.4924285714286) [Let's head back to the IPython Notebook,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=271.81) [and write that code. The code here is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=274.447)[identical to the one which we executed in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=277.2916666666667) [Cloud Shell in the previous video. We are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=280.08033333333333) [instantiating a client after carrying out](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=282.74) [some imports. Notice the only important](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=284.983) [point here is the relative path to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=288.03400000000005) [datasets directory. That's because we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=291.46400000000006) [executing our code from within the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=293.0928571428571) [notebooks folder, and so we've got to set](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=295.6107999999999) [up our relative path correctly. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=298.9306666666665) [also important because it tells us how we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=301.208) [can use files on the Datalab VM. The rest](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=303.23100000000005) [of this code is exactly the same as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=306.04800000000006) [before, we make a call to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=309.556) [label\_detection, and print out the labels](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=312.598) [into our browser window. And the beauty is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=314.5378) [that we are able to do this interactively](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=317.3906) [just by hitting Shift+Enter within each](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=319.08779999999996) [code window. Let's continue and execute](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=322.24680000000006) [the remaining little bits of code,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=324.99933333333325) [including our face detection on the URL](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=327.3225714285715) [from pexels.com. So we have the same code,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=331.25233333333347) [we invoke the face\_detection method of our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=333.99499999999995) [client, and print out the results again to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=336.2336) [screen. We have successfully executed](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=339.8929999999999) [Python code from within Datalab. Compare](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=341.35733333333326) [how much easier this was. We did not have](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=343.982) [to upload the JSON key file, we did not](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=346.4315555555555) [need to set any environment variables, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=348.8539999999999) [it was also a lot easier to work with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=350.66428571428577) [file structure on the persistent disk of the Datalab VM.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=5&mode=live&start=353.4270000000001)

[Working with Cloud Datalab in a Team Environment](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live)

[In this little demo, we are going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=1.744) [demonstrate working with Cloud Datalab in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=3.104) [a team environment. What we are simulating](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=5.81) [here is a set up where a team has a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=8.502) [designated individual who is in charge of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=10.782) [creating Datalab instances on behalf of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=13.868) [others. This designated individual would](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=16.917714285714283) [start by running the Datalab command, but](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=18.923333333333332) [with a special flag, that's the for-user](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=21.424428571428574) [flag. The for-user flag would specify the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=25.304000000000002) [user ID of the person who is going to use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=28.193000000000005) [this Datalab instance. So here we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=30.524111111111104) [running the datalab create command for the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=33.56442857142856) [user spikey.engineer. The rest of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=36.252857142857124) [options are familiar, there is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=39.46700000000001) [service-account, and then the name of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=41.988500000000016) [server, spikey-developer-instance. When we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=44.030666666666676) [run this command, we are prompted for a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=47.843250000000005)[zone, let's go with number 36, that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=49.58725) [asia-south1-b. The disk and the instance](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=52.4005) [are created. If we now switch into our VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=55.77242857142856) [instances dashboard, and hit Refresh, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=57.95000000000002) [can see that our spikey-developer-instance](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=60.103749999999984) [has come into existence. Now there are a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=63.249333333333325) [couple more steps which we've got to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=68.19349999999997)[undertake before our spikey.engineer user](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=69.94000000000001) [can make full use of this instance, so](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=71.41957142857144) [let's understand what they are. First, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=74.21900000000002) [will need to give instance admin rights to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=76.49899999999998) [spikey.engineer. To do that, we navigate](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=80.32220000000001) [into the IAM and admin section, and click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=82.16277777777775) [on the IAM tab. And there we notice along](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=85.37650000000001) [the way that our service account, the one](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=88.86866666666667) [which we created datalab-services is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=90.88485714285716) [assigned the Role Compute Admin. Compute](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=92.8834) [Admin implies full control of all Compute](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=96.1605) [Engine resources. Let's now go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=100.03499999999997) [run spikey.engineer. A role for this, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=103.65614285714283) [click on the Add button up top.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=105.647)[Spikey.engineer is the member, but now the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=108.14933333333333) [role that we select is not Compute Admin,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=111.74900000000001) [we are going to select something less](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=113.877) [powerful, we are going to select Compute](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=116.44085714285714) [Instance Admin. Now this is a really](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=119.44649999999999) [important point. There's a lot going on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=122.11999999999998) [here. Notice first off that there is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=124.12183333333336) [Compute Instance Admin in beta, that's not](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=125.81774999999998) [what we are going with, we are using the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=128.15025) [Compute Instance Admin v1. Such a user can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=130.46412500000008) [connect to VM instances using gcloud or](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=133.57000000000002) [SSH from the browser. Now this user cannot](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=136.53699999999992) [create new instances. This user also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=141.0138571428571) [cannot manage or alter network or security](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=144.01799999999994)[settings, but change the service account](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=147.318) [that a Compute Engine instance is using.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=150.233) [So there's a lot that cannot be done using](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=153.24) [this role. So we SAVE this and confirm](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=154.885) [that spikey.engineer does indeed have the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=158.154) [Role Compute Instance Admin v1. Next we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=161.664) [also have to give spikey.engineer access](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=165.72357142857143) [to the service account, and for that let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=167.64325) [navigate into the Service accounts tab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=170.25966666666667) [over on the left. In the list of service](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=172.73) [accounts there, we find the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=175.78442857142858)[datalab-services service account, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=177.552) [we SHOW the INFO PANEL on the top-right.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=179.3756666666667) [This allows us to add a member, the member](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=181.892) [here is going to be spikey.engineer, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=184.866875) [the role here is pretty simple, it's going](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=187.2206666666667) [to be Service Account User. This allows](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=190.06885714285718) [spikey.engineer to use the service account](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=193.60719999999998) [associated with our Datalab VM instance.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=195.36871428571428) [Let's go ahead and SAVE these changes, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=200.051) [we can confirm that spikey.engineer does](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=202.87566666666666) [indeed show up as a Service Account User](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=204.34675000000001) [for this datalab-services service account.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=206.74183333333332) [We can then sign out and sign back in to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=210.221) [console.cloud .google .com as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=213.532) [spikey.engineer. So we sign out of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=215.293) [spikey.developer, and then we sign back in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=217.747) [as spikey.engineer. The first interesting](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=220.638) [bit worth paying attention to here is how](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=224.297) [different the home console looks. We do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=226.328) [not have access to resources other than](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=229.37324999999998) [Compute Engine, so App Engine, Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=231.37766666666667) [Storage, Cloud SQL, all of these are out](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=233.841) [of bounds for us. The only bit that we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=237.0336) [access is Compute Engine and the three](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=239.32599999999996) [instances. So let's navigate into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=242.13859999999997) [Compute Engine VM instances dashboard, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=244.0604285714286) [confirm that we see our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=245.98928571428573) [spikey-developer-instance. We do see it,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=249.707) [and so it's easy enough for us to activate](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=251.7132) [Cloud Shell and run the datalab connect](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=253.58775000000003) [command. This is the first time in this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=256.95233333333334) [course when we are connecting to a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=258.5429999999999) [preexisting Datalab server, but as we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=260.76557142857143) [see, it's not very complicated. We simply](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=263.6165000000001) [run datalab connect rather than datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=266.29028571428574) [create, we follow this up with the port,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=268.159875)[that's 8082, and finally the name of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=270.4655) [Datalab server, which is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=273.55266666666665) [spikey-developer-instance. The server](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=276.90133333333335) [already exists, and so the SSH tunnel can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=278.806) [be opened up pretty quickly. Now we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=281.45028571428577) [connect to this using the familiar button](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=284.192875) [up on the top-right. Change Port 8082,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=286.423) [CHANGE AND PREVIEW, and we are in. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=290.2885) [click on the notebooks folder, and we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=293.3631250000001) [now go ahead and create a new notebook](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=295.7672499999999) [just like the person who created this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=299.11650000000003)[Datalab server. Let's call this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=301.95166666666665) [dev-notebook, we can import a few](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=303.5212857142857) [libraries, print out the version of sys](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=305.5465) [library that we are using, and that's 2.7](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=308.36783333333335) [.15. Let's go ahead and checkpoint this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=312.01087500000006) [code, and then let's switch back to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=315.96157142857146) [spikey.developer account. Remember that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=319.45980000000003) [the Save and Checkpoint only backs up to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=321.1201428571428) [the persistent disk of the Datalab VM.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=323.170875) [This code can now be accessed by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=325.39275) [spikey.developer, let's switch back to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=328.55899999999997)[spikey.developer login. So we are now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=331.64166666666665) [going to list all of our running](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=333.92660000000006) [datalab-server instances. We can filter by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=336.71366666666665) [the zone and the project, and we can see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=339.343) [that there are three server instances and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=341.16655555555553) [this includes the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=343.16560000000004) [spikey-developer-instance, which was](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=344.77) [kicked off by our colleague. Let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=347.00724999999994)[ahead and stop this instance, so datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=349.85685714285717) [stop, followed by the project, the zone,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=352.9312857142857) [and the name of the instance, which here](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=354.9625) [is spikey-developer-instance. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=357.8015) [spikey-developer-instance has been](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=360.16999999999996) [stopped, and it's no longer going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=361.463) [accepting connections. Let's switch back](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=363.147) [into the Web Console, navigate to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=366.9984285714286) [Compute Engine VM instances, and there we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=369.1225) [can confirm that the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=371.38714285714275) [spikey-developer-instance is indeed in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=372.59119999999996) [stopped state. The two other servers are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=374.644) [still running. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=377.35) [spikey-developer-instance is grayed out,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=379.87775) [and we can see that the SSH button is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=381.4712) [grayed out as well. There's also no](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=384.641) [external IP. Let's also explore how to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=386.482) [delete a Datalab instance. The command](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=389.74) [that we've got to run is datalab delete.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=392.80025) [Note that we specify a delete-disk flag.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=394.79742857142855) [This is going to delete the instance's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=398.0308571428571) [persistent disk regardless of whether that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=401.13939999999997) [disk has the auto-delete set to on or off.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=403.76199999999994)[There is also a keep-disk flag, which is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=406.709888888889) [way to preserve the persistent disk in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=409.4418750000001) [respect to the auto-delete configuration.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=411.7365714285714) [We execute the command, and we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=415.825) [prompted for a confirmation because the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=417.37462500000015) [notebooks in this disk are going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=419.01457142857134) [deleted as well. We hit yes, and now if we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=421.59399999999994) [switch back to our VM instances browser,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=424.78819999999985) [and hit Refresh, the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=427.57514285714285) [spikey-developer-instance no longer shows up there.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=6&mode=live&start=429.441)

[Using Magic Functions and Client Libraries to Work with Cloud Storage](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live)

[In this demo, we will see how we can use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=2.272) [magic functions and client libraries to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=4.277) [work with Cloud Storage. Magics are a term](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=5.775) [borrowed from Jupyter, these are syntactic](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=10.018714285714289) [sugar, these are simple commands which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=11.995714285714286) [start with either one percentage sign or](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=13.652666666666669) [two percentage signs, and so are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=16.3235)[shortcuts, these are understood by the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=18.578428571428574) [kernel for more complex and common](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=21.047444444444444) [operations. Let's get started by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=24.336777777777776) [connecting to the spikey-datalab-server on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=25.703857142857142) [port 8082. This opens up the browser](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=28.308) [window with the connection, let's click on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=31.575500000000005) [the notebooks folder. Let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=33.87457142857143) [open a new notebook. Let's call this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=36.4375) [notebook gcs\_crud\_operations. The first](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=39.363749999999996) [item on the agenda is to import the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=43.098888888888894) [context. So this is from the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=45.677285714285716) [google.datalab client library. The Context](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=47.059) [is an object which encapsulates](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=50.098000000000006) [information such as the project ID, the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=52.153) [service account credentials, and whether](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=54.754) [the user is signed in or not. Next let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=56.55344444444444) [go ahead and import the google.datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=60.040285714285716) [.storage client library. Let's call this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=62.01075) [just storage. Now what we are going to do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=66.20040000000002) [is first perform a set of operations using](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=68.17877777777777) [the client libraries, and then go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=70.3738571428571) [and use magics to perform those same](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=72.5485) [operations again, and we'll see how much](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=74.96249999999999) [easier the magics make it. Let's keep](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=77.79624999999999) [going and import a few other libraries](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=80.55528571428569) [that we need, such as random and string,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=82.67274999999998) [and then let's create our bucket\_name](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=85.76712500000002) [variable. This is datalab-emplib, please](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=87.97399999999999) [note that bucket does not exist yet, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=90.73799999999999) [are going to create it from right here](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=93.50899999999999)[within Datalab. Given the bucket name, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=96.94585714285712) [can convert it into a bucket\_path by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=99.49562500000002) [qualifying it with the gs://. Let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=101.58857142857146) [ahead and create our bucket, we first need](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=104.90950000000002) [to get a handle to the bucket from the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=108.21944444444443) [storage client, and then we go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=111.21233333333335) [invoke the create method on it. So we run](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=113.54299999999999) [this command by hitting Shift+Enter as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=116.92766666666671) [usual, but we encounter a snag. We find an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=119.81325000000001) [exception has been thrown, our HTTP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=124.21342857142855) [request to the underlying REST API](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=126.10824999999998) [endpoint has failed, and that's because](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=129.463) [the Datalab service's service account does](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=131.74985714285717) [not have access to gcs. To change that,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=134.2526666666666) [let's navigate into the IAM and admin](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=138.009) [section where we will have to go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=140.333) [add a role to this service account. We ADD](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=143.377) [using the big button right up top, the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=147.52866666666665) [member is the datalab-services-service](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=150.6146) [service account, and the role that we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=151.917) [interested in granting is Storage Admin.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=153.78) [This will give the service account full](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=156.415) [control of all gcs resources. So let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=157.907) [ahead and hit SAVE and confirm that our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=162.78033333333337) [service account is indeed a storage admin,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=164.80242857142855)[and then we can switch back to Datalab and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=166.698) [try our command again. And this time it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=170.3082857142857) [goes through successfully, and it creates](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=173.2408571428571) [our Google Cloud Storage Bucket. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=175.481375) [confirm that creation was successful.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=178.34283333333335) [Let's navigate into the Storage Browser,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=179.897) [and there we find that the datalab-emplib](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=182.613)[bucket does indeed exist. This bucket has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=184.821) [just been created, and so it's empty.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=189.39549999999997) [Let's go head and change that. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=191.4975) [switch back to Datalab and change that.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=193.99557142857142) [First let's just confirm that our bucket](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=196.50442857142855) [does indeed exist. We can see that we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=199.26050000000004) [invoke the bucket.exists method. In this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=201.80424999999997) [way we can programmatically confirm that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=205.76142857142855) [our bucket creation was successful. Next](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=207.64683333333335) [let's go ahead and create an object, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=210.65425) [let's write that object into our bucket.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=213.87675000000002) [So let's parse this, we first create a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=216.92) [bucket object, that's a file with the name](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=219.718) [emp- fields.txt, and then we go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=221.605) [live stream into that file the data. That](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=224.898) [data takes the form of a header stream](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=229.281375) [with the field name separated by commas.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=231.1435) [Let's now go ahead and list the contents](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=235.83)[of this bucket using the bucket.objects](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=237.09755555555566) [method, and we can see that our emp-](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=239.626) [fields.txt is included. We switch back to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=242.54475) [the Storage browser, and REFRESH our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=245.91142857142862) [BUCKET, we can see that the file has come](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=247.16799999999998) [into existence there as well. Let's check](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=250.01312500000003) [out some other attributes of this bucket](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=252.7475714285714) [such as the size, making use of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=253.89222222222224) [bucket\_object.metadata .size, and it's 45](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=257.152) [bytes in size. Let's read in the contents](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=260.648) [of this bucket using the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=263.53450000000004)[bucket\_object.read\_stream method, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=265.8515) [print those contents out, and we can see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=267.88175) [that this is the exact same data which we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=270.67555555555555) [had streamed in. We will also go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=272.76399999999995) [delete a bucket after confirming that it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=276.23242857142856) [still exists using the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=279.0652) [bucket\_object.exists method, and now the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=281.65) [bucket\_object.delete method will get rid](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=284.747) [of it. If we now switch back to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=287.4384285714287) [Storage browser and hit Refresh, we will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=289.22374999999994) [see that our bucket there no longer](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=291.2210000000001) [exists. Let's now change track, let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=294.7238333333333) [switch back to Datalab and make use of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=296.58514285714296) [magics available for working with Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=299.04249999999985) [Storage buckets. So we are going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=301.84285714285704)[perform very similar operations, but in a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=303.64887500000003) [far more succinct way. Let's start by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=306.0275) [making use of the gcs magic, so this is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=308.888) [two percentage signs followed by the word](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=311.57975) [gcs, and we can get help by using the help](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=313.53200000000004) [switch. We run this command and we see a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=317.03600000000006) [whole bunch of operations which we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=320.50800000000004) [perform using the gcs magic. So we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=322.9848333333333) [copy, create, delete, list, read, view,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=327.389125) [and write buckets with just this one](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=330.28587500000003) [single line. You should be aware that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=332.595) [under the hood, this is just going to make](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=336.449) [calls to the same gcs client library which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=338.128) [we were using a moment ago. Let's start by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=341.026) [creating a bucket using the gcs create](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=344.69812500000006) [command, followed by the bucket\_path. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=347.2413333333334) [that's all that we need. If we go back to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=350.2542857142857) [the Storage browser and hit Refresh again,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=353.3433333333333) [we find that our datalab-emplib bucket is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=354.72299999999996) [back in action. Let's repeat all of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=357.8804999999999) [operations we performed a moment ago, so](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=360.74028571428573) [we create a string, and then write it into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=362.61112499999996) [a bucket\_object using the gcs write](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=365.4064285714286) [command. Notice how when we do this, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=368.2424999999999) [can both specify the text that we wish to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=370.41588888888873) [write, as well as the bucket that we want](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=373.41737500000016) [to write it to. This goes through](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=375.8900000000001) [successfully as well, we can now list the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=378.27585714285715) [objects in this bucket\_path, and we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=380.7943333333334) [see that our schema.txt has come into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=383.04885714285706) [existence. We can also go to the Storage](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=386.13000000000005) [browser and hit Refresh, and confirm that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=388.5518888888887) [the schema.txt appears there. Let's keep](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=390.78449999999987) [going with our exploration. Let's use the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=395.815) [gcs read magic, this is going to read the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=397.9189999999999) [contents of an object. We can print this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=400.9030000000001) [out to screen. And finally, let's make use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=403.36185714285705) [of the gcs delete magic. Notice how we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=405.7527499999999) [specifying the object that we wish to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=409.5019999999999)[delete. So we are invoking the gcs delete](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=412.2421428571429) [magic with the object flag first, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=414.77587500000016) [we go ahead and invoke it again with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=417.88399999999984) [bucket flag, this time it's going to get](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=420.2878750000001) [rid of the bucket. And we can now switch](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=422.6403333333334) [to the Storage browser and confirm that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=425.11911111111107) [our crud\_operations using the gcs line](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=428.15150000000006) [magics have worked. Datalab supports](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=430.57516666666675) [magics for working with gcs in BigQuery](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=433.26400000000007) [and other GCP services, these are very](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=435.985375) [handy because of the tight integration](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=438.7635714285715) [that they offer with the rest of the platform.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=7&mode=live&start=440.85028571428575)

[Working with Big Query from Cloud Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live)

[In this demo, we'll make use of the other](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=2.182) [set of really useful magic functions in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=3.73) [Datalab. These have to do with working](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=6.359375000000002) [with BigQuery. Let's pick up the action](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=8.96775) [with a new notebook, let's call this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=10.639) [bq\_crud\_operations. We start with a whole](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=12.95) [bunch of import statements, the first of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=16.227) [these is the Datalab context, which has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=18.39) [the project ID and service account](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=20.655375) [credentials. The second is the BigQuery](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=23.008999999999993) [client, then the Cloud Storage client, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=25.084999999999997)[finally pandas. Let's also go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=28.800000000000008) [try and import a stringIO library. Notice](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=31.25699999999999) [how we first try to import it directly](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=33.76357142857142) [from StringIO. If that results in an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=37.42700000000001) [exception, we intercept the exception and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=39.941166666666675) [import it from a different place. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=41.882142857142874) [create a Storage bucket to hold some data,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=46.05425) [which we will then move to BigQuery. So we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=48.598375000000004) [navigate to the Storage browser, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=50.66885714285714) [CREATE a BUCKET. Let's call this bucket](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=52.65575) [spikey\_hr\_data. We'll go with the defaults](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=56.494000000000014)[and hit Create, and then Upload a couple](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=58.74062500000001) [of files from our local machine. These are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=60.66922222222224) [two files which we've uploaded into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=62.99557142857143) [spikey\_hr\_data bucket. Both of these are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=66.29866666666663) [comma-separated values. Next, let's switch](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=69.16966666666666) [back to Datalab, and use the gcs magic to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=71.52300000000001) [read the contents of this object into a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=74.81866666666669)[variable, and that variable is called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=77.4358333333333) [emp\_aug2018. We execute this statement,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=81.57850000000002) [and print out emp\_aug2018, and we find](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=83.68700000000001) [that it does indeed contain all of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=86.24885714285712) [data that we had in the object location on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=88.82033333333334) [gcs. We will now load this data into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=93.11033333333333) [BigQuery, and in order to do that, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=96.44412499999999) [first convert it into a pandas data frame.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=98.04255555555555) [So the first thing that we do is to use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=101.099) [the pandas.read\_csv file method. In order](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=103.35718181818184) [to pass in our in-memory variable into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=107.73275000000001) [this method, we have to pass it through as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=110.07637500000001) [a StringIO buffer, and that's where the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=112.93280000000001) [StringIO comes in handy. This gives us a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=116.03549999999998) [data frame, that's the variable df, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=118.66866666666664) [then we do something really interesting,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=120.67762499999998) [we use the bq client in order to infer the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=123.41399999999999) [schema of this data frame. So we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=127.42811111111106) [making use of the bq.schema .from\_data](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=129.65033333333335) [command, and we pass in our data frame.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=133.2345) [This is our first use of the BigQuery](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=137.028) [client library. The result of this is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=138.697)[BigQuery schema object which we are going](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=142.753) [to use in just a moment. But before that,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=144.498) [let's go ahead and insert all of this data](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=147.406125) [into BigQuery using the bq.Dataset .create](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=150.63699999999997) [method. And that really is all there is to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=154.6966666666667) [it. We have specified the name of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=158.22622222222225) [dataset that we wish to create, that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=159.55137500000004) [hr\_data, and this one line of code is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=162.48385714285718) [enough for us to programmatically create a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=164.37040000000007) [BigQuery dataset. This command runs](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=167.53666666666663) [through successfully, and we can now go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=169.8812) [ahead and create a table inside this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=171.68199999999996) [dataset. This once again is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=174.60733333333332) [require a single line of code, we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=176.275) [going to use the bq.Table .create command,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=178.71033333333335) [and we pass in the name of the table, that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=182.08799999999997) [is hr\_data.emp\_aug2018. Notice how the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=187.65233333333333) [table name is qualified by the dataset](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=190.730625) [name. And once more, we also pass in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=192.80833333333334) [schema object which we had just created a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=195.95833333333331) [moment ago from our pandas data frame. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=197.97300000000004) [finally we have a flag which sets](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=200.4715) [overwrite to True, so that just in case](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=203.21550000000002) [this table already exists in this dataset,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=205.58400000000003) [this operation is going to go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=207.9975714285714) [overwrite it. Let's now switch over to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=211.33871428571422) [Web Console. In the Navigation menu, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=213.5975) [navigate into the BIG DATA section, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=215.76814285714292) [locate BigQuery, and click on it. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=218.4105714285714) [leads us to the BigQuery UI, where we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=220.61822222222216) [find the project name or on the left, that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=223.73975) [spikey\_dl, below that is a list of all of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=228.0208571428571) [the datasets contained within this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=230.58480000000003) [project, here there's just the one, that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=232.08024999999998) [hr\_data, and within that dataset is the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=235.2408571428572) [emp-aug2018 table, the one we just](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=238.88699999999997) [created. Let's click on that table, let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=241.6568333333334) [then hide the editor because we aren't](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=244.34450000000007) [going to run any queries from this UI,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=245.81100000000004) [let's free up some screen real estate, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=247.6855)[we can see the schema. We can then change](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=250.48949999999996) [to the Details tab, and that gives us](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=253.69050000000004) [information about the table itself. Right](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=255.64557142857146) [now there's no data in here, and that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=257.264875) [why the Number of rows here shows up as 0.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=260.01674999999994) [Let's put some data into this table from](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=263.53133333333324) [Datalab. So let's switch back, and use the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=266.4772000000001)[table.load command. Here notice how the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=269.334) [first argument is the Google Cloud Storage](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=273.393) [bucket, which has the data we wish to load](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=274.978) [into our table, and then additional](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=277.01) [arguments such as the mode, which is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=279.387) [append, the source\_format, which is csv,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=282.01300000000003) [and the csv\_options, where we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=284.6055) [requesting BigQuery to skip the first](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=287.51471428571426) [header row. This runs through](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=290.1445) [successfully, we've inserted data into our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=292.15450000000004) [table, and we can now verify this by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=295.48583333333335) [switching to BigQuery and hitting Refresh.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=297.45622222222227) [The Number of rows has changed from 0 to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=300.682) [6. And if we now switch to the Preview](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=303.08230000000015) [tab, we can see all of the data that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=305.539222222222) [been loaded in there. Finally, let's make](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=306.81033333333323) [use of the BigQuery magic in order to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=309.3469999999999) [query our data, so this requires the use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=311.92133333333345) [of the key word bq proceeded by two](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=315.50799999999987) [percentage signs, and this is where it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=319.2724285714287) [gets really interesting. We are defining a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=321.885625) [query here, and we are saying that we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=323.95622222222215) [would like to store that query in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=326.01225) [variable hr\_data. Please note that we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=329.43799999999993) [not yet executing that query, that we'll](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=331.7166250000001) [do in just a moment. Also note the two](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=333.5841111111112)[percentage signs which proceed the word](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=336.80471428571434) [bq. That's because this is a cell magic.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=338.75825000000003) [Cell magics are concepts from Jupyter.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=341.895) [These refer to magic functions which span](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=344.63) [more than one lane. Once we've defined](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=346.864) [this query, we can go ahead and execute it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=349.239) [using a line magic. Line magics take only](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=351.443)[one percentage sign. The line magic here](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=355.167) [is bq execute, followed by the query name.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=358.27900000000005) [We hit Shift+Enter and execute this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=362.419) [command, and the results of our query appear within our Datalab notebook.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=8&mode=live&start=363.881)

[Committing Notebooks to Cloud Source Repositories](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live)

[In this example, we will see how we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=1.803) [commit the contents of a notebook to our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=3.996) [connected private Cloud Source Repo. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=6.462) [pick up the action with our Cloud Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=9.968125) [notebook bq\_crud\_operations. The first](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=12.549333333333333) [thing that we are going to do is to click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=15.328999999999999) [on the ungit button over on the top-right.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=16.502111111111113)[Notice how when we click on that button,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=18.868285714285715) [the URL changes, so we are still connected](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=22.04575) [to our same 8081 on our Datalab instance,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=25.254250000000003) [but now this is all about the integration](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=28.777749999999997) [between Cloud Source Repos and the Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=31.942333333333334) [notebook. Right up top is a directory](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=35.64275000000001) [folder, which tells us where we are. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=37.62142857142858)[are in the /content/datalab/notebooks](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=41.0315) [folder. And we can see the contents of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=44.02150000000001) [this folder down below. We have two](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=45.95822222222224) [notebooks here, Hello World and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=47.71014285714284) [bq\_crud\_operations. Below that, we can see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=50.92400000000001) [buttons, Fetch from origin, create](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=53.302833333333325) [Submodules, or change the master, and down](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=55.46280000000001) [below is the master currently being used.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=57.801333333333346) [Let's go ahead and delete one of these](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=61.637) [notebooks, that's the Hello World. We will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=63.543) [not commit this one to the master. So](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=65.74111111111111) [let's discard it, and then let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=68.373375) [and commit the bq\_crud\_operations](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=71.17366666666666) [notebook. So we can see that there is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=73.65633333333332) [Commit button over on the top-left. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=75.55299999999995) [will need to go ahead and enter a title](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=78.5625) [and a body for this Commit operation. When](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=80.385) [we click Commit, we should be very clear](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=83.694125) [that this is not pushing the file contents](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=85.56099999999999) [back out onto the Cloud Source Repo, this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=88.76971428571429) [is still within the master area of our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=90.58325) [local Datalab VM. In order to go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=93.86139999999999) [commit this, we will have to select and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=97.76875000000003) [push from the master to the remote repo.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=100.28033333333333) [So to do that, we'll have to go and click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=103.087) [on the master checkbox, and that in turn](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=104.833) [will open a button which allows us to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=107.997) [push. So we check this checkbox, and that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=111.39699999999998) [brings up a Push button, and now when we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=114.03750000000004) [push this button, that is finally going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=117.234) [push the changes to the master repository.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=119.15174999999998) [So this is an important point. If you've](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=122.726) [committed your code, but you've not yet](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=124.09219999999999) [pushed it from your local machine to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=125.90099999999998) [master, your code is lost. So we now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=128.67955555555554) [finally hit the Push button, and switch](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=132.09037499999997)[into the Web Console. We navigate to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=134.55700000000002) [Cloud Source Repositories, and click on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=136.97300000000004) [the Repositories pane. We can see our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=140.27928571428575) [private rep called datalab-notebooks, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=143.32957142857148) [click into it, and navigate into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=145.28119999999998) [files, and there we can see our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=148.20550000000003) [bq\_crud\_operations IPython Notebook. It's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=151.17100000000005) [successfully been pushed into the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=153.341) [Source Repo. That gets us to the end of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=155.61166666666665) [this module in which we went into a lot of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=158.11860000000001) [depth on the intricacies of how Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=160.8488) [works. We began by seeing how we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=164.47139999999996) [create and connect to Datalab instances.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=166.4972222222223) [We then moved on to the use of GCP APIs](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=169.07) [from client libraries, both for Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=172.143) [Storage and for BigQuery. We explored](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=174.755) [working with Datalab in a team environment](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=177.72650000000002) [and the complex role-based access control](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=179.478) [required for that. We saw just how](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=182.75119999999998) [convenient the magic functions available](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=185.27928571428572) [for BigQuery and Cloud Storage make it to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=186.66466666666668) [work with those services, and finally we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=189.58314285714283) [used Git to commit Datalab notebooks to the Cloud Source Repos.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=30662b9d-73f1-4f7b-9368-8e1c19f15bc0&clip=9&mode=live&start=191.768)

[Using Cloud Source Repositories for On-cloud Development](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live)

[Module Overview](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live)

[Hello, and welcome to this course on Using](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=0) [Cloud Source Repositories for On-Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=4.164) [Development. This module is all about the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=7.0465) [Cloud Source Repos and Cloud Build. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=9.637499999999996) [will begin by understanding how to create](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=12.288857142857141) [a Cloud Source Repo and clone it to a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=14.293555555555557) [local machine. We will work with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=17.1245)[service using the web interface, as well](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=19.046) [as the gcloud commandline utility. And we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=20.999) [will then create a very cool little](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=24.54611111111111) [application of a simple CI/CD pipeline. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=26.573) [will first use our Source Repo to deploy](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=30.118000000000002) [an App Engine application. We will then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=32.47) [integrate it with a Cloud Build trigger.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=34.239125) [Any change by a developer who pushes code](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=35.91171428571429) [into the Cloud Source Repository will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=38.709428571428575) [trigger an automated build and a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=40.78666666666667) [redeployment of the updated app. After](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=43.610571428571426)[that, we will study three specific topics,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=45.83857142857143) [working with a remote repo and manual](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=48.208285714285715) [provisioning of credentials, connecting to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=51.094) [a repo hosted on GitHub and testing the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=53.433249999999994) [directional sync between GitHub and the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=56.04766666666667) [Cloud Source Repos, and lastly,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=58.89671428571428) [integrating the Cloud Source Repos with a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=60.856)[Pub/Sub topic. That's an exciting agenda, so let's go ahead and plunge right in.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=0&mode=live&start=62.401)

[Creating a New Cloud Source Repository](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live)

[Let's go ahead and get started with our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=1.828) [first demo on the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=3.523) [Repositories. In this demo, we will see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=6.097000000000001) [how to create a new repository and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=7.658199999999999) [use that repository from a local machine.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=10.221571428571426) [Let's get started. In the Navigation menu,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=12.792) [we find Source Repositories, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=15.331) [click on the Repositories pane. At this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=17.878428571428575) [point, we already have one repository in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=19.909142857142857) [this project that's called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=22.056333333333335) [datalab-notebook. Let's go ahead and add](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=23.565) [another repository by clicking on that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=25.696) [button over on the top-right. We are now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=28.019) [presented with two options, we can either](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=30.782999999999998) [create a new repository or connect an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=33.03337500000001) [external repository from a hosted source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=35.827333333333335) [such as GitHub or Bitbucket. Let's just go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=38.18085714285714) [with the first option for now. We will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=40.90533333333334) [return to the second option in a bit. This](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=43.1648) [will result in the creation of a new empty](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=44.88777777777778) [repository. Let's give this a name, let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=47.882999999999996) [call it spikey-reviews-repo, and notice](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=50.00925)[how it's enclosed within the spikey-dl](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=52.889714285714284) [project. There is also a way for us to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=55.482875) [create a new project and host this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=58.21) [repository within that, but let's skip](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=60.065)[that and just click on the big blue Create](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=63.01014285714287) [button down below. Now at this point our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=64.888) [repo is empty, and so we are going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=67.367) [prompted for whether we want to add code](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=70.024) [to our repo. Now there are two options](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=72.02755555555552) [here, the first is to push code form a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=74.64050000000003) [local Git repo, the second is to clone our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=77.37000000000005) [repo to a local Git repo. Let's go with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=79.99380000000001) [the second because we don't yet have any](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=82.58249999999998) [files that we would like to push. We are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=84.8953333333333) [also asked what our preferred](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=87.627) [authentication method is, let's just go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=89.59240000000001) [with the default Google Cloud SDK. And if](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=92.09266666666667) [we scroll down just a little bit, we will](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=94.36844444444445) [see that there are helpfully-provided](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=96.109) [instructions telling us exactly how we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=97.48775) [go about pushing files into this repo. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=100.33549999999998) [are going to perform all of these steps,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=102.67450000000002) [but in just a moment. For now, let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=104.94066666666664) [continue exploring the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=107.5037142857143) [Repositories. We can see all repos up top,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=109.5035) [and we can see that our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=111.73081818181822) [spikey-reviews-repo has come into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=113.83814285714286) [existence. We can also play with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=116.04842857142856) [settings, and this page also has a way to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=118.17042857142857) [delete the repo. Let's navigate to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=120.78327272727277)[Permissions tab on the left, and we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=122.81414285714287) [see that there are various members who](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=124.8082222222222) [have access to this repo, that includes](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=126.69542857142858) [various service accounts and also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=129.42419999999998) [spikey-developer and spikeysales, both of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=131.57640000000004) [whom have inherited access from their](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=133.749) [project owner role. We've created the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=136.46450000000002) [repo, we are now ready to go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=138.55866666666665) [clone it from a local machine. For this,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=141.2036666666667) [let's navigate into the Compute Engine](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=144.05071428571426) [section, and create a VM instance, which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=145.93642857142856) [is going to serve as our local machine](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=149.20125) [while we explore the Cloud Source Repos.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=150.803) [So let's give our instance the name](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=153.869) [spikey-engineer-instance. We set the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=155.266) [region and the zone to asia-south. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=158.69400000000002) [specify 1 vCPU, that's enough for us. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=161.33724999999998) [can also change the peristent disk if we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=164.9066) [like. And then this is an important bit,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=166.84740000000008) [let's be sure to go ahead and Allow HTTP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=169.25) [traffic. We can now Create our VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=172.35770000000008) [instance. And it takes a minute to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=174.9212857142857) [provision, it's called the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=176.2064285714286) [spikey-engineer-instance. Let's SSH into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=178.05700000000002) [this instance and start work. Now Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=179.86724999999998) [Source Repos are fully compatible with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=182.68242857142857) [Git, and that's why we will start by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=184.76711111111112) [installing Git. The command for this is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=186.616) [sudo apt install git, and we also do not](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=189.213) [want to be prompted. This install goes](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=192.168) [through successfully, and we've set up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=194.83799999999997) [Git. Next, let's identify ourselves to Git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=197.24759999999998) [using the git config command, and specify](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=199.94957142857135) [the spikey.developer email ID. And we also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=202.54157142857147) [go ahead and specify our user.name as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=205.76975) [Spikey Developer. Now the next step is an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=208.1595) [important one. We need to run the gcloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=210.89475) [init command, and that's required because](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=213.42000000000004) [we are going to be making use of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=214.89449999999997) [gcloud commandline utility, but from a VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=217.4737142857143) [instance. We do not need to run gcloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=220.95933333333335) [init when we are working from Cloud Shell,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=222.7780999999999) [but we do need to run this when we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=224.62087500000004) [working from a VM instance in order to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=226.9847) [make sure that the environment is set up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=228.68411111111115) [correctly. So we kick off this command,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=231.0834) [and we are prompted for the account that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=232.44166666666663) [we would like to use. The two options are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=234.191125) [the default service account associated](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=237.14724999999993) [with VM instances, and the other is to log](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=239.41620000000003) [in with a specific account, so let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=242.81166666666658) [with number 2. We would like to log in as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=244.94566666666665) [spikey.developer, and so when we go with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=247.226) [option 2, are prompted to run a gcloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=250.046) [config set account command. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=252.971) [continue. This is going to require us to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=255.70371428571428) [paste a link into our browser, let's paste](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=258.88550000000004) [that link in, and we are going to sign in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=260.9102222222222) [here as Spikey Developer. We will allow](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=263.43300000000005) [access to all of the Google Cloud SDKs. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=265.63500000000005) [will find a code, a verification code,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=268.2835714285714) [which we need to copy and paste back into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=270.70025) [our SSH window. This is the verification](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=274.32557142857144) [code which was required, so we paste this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=276.9574285714285) [in and hit Enter. Because we had signed in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=279.63088888888893) [via the browser as Spikey Developer, that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=282.3262222222222) [is going to be our identity. Next, we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=284.4603333333334) [prompted for the Cloud project that we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=287.61749999999995) [would like to use, let's go with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=289.5726)[spikey-dl. So we type in the corresponding](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=291.7692000000001) [numeric value, that's 4. We could choose](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=293.34814285714293) [to specify a default Compute Region and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=295.7215714285713) [Zone, but that's fine, we don't need that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=298.4811428571427) [right now, so let's skip it. And now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=300.28362500000003) [finally after all of this preamble, we can go ahead and clone our repo.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=1&mode=live&start=303.38925000000006)

[Pushing Files to a Cloud Source Repository](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live)

[We are going to make use of gcloud, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=2.17) [the exact command is gcloud source repos](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=4.079428571428571) [clone, followed by the name of the repo,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=6.5378750000000005) [which is spikey-reviews-repo, as well as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=9.703) [the project, which is spikey-dl. Let's run](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=13.689250000000001) [this command, and that repo is going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=17.024749999999997) [cloned into our current directory. Note](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=20.135375)[the warning that we seem to have cloned an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=22.17025) [empty repo. That's fine, we are going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=25.158499999999997) [check some files into this repo in just a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=27.136999999999993) [moment. Let's run the ls command, and we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=30.481250000000003) [can see the spikey-reviews-repo does](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=32.35455555555555) [appear. Let's upload a file, which we do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=34.4925) [by clicking on the Upload button over up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=37.21162500000002) [top-right. And this will open up an upload](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=40.72049999999997) [window, and we'll choose a simple CSV](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=42.67424999999998) [file, this will get uploaded onto the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=45.19285714285713) [current present working directory. And we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=48.08928571428572) [can now move this into the repo directory,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=52.15344444444444) [which we'll do using the mv command. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=54.937375) [now we're ready to actually add this into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=57.8825)[our repo. So we cd into the directory, run](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=59.3855) [an ls -a to view the hidden files, then we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=62.0818888888889) [run git status. This shows us the state of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=66.12799999999999) [our current directory, and note that we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=68.88374999999996) [can see our CSV file, it appears in red](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=70.96977777777778) [because it's not being tracked yet, we've](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=73.71424999999996) [got to add it. So we'll run the git add](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=75.97750000000002) [command, followed by the name of this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=78.7804285714286) [file, this is going to make Git aware of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=81.29900000000004) [this as a new file. Now if we rerun git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=82.8596) [status, we can see that it shows up as a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=86.4678888888889)[new file. Let's go ahead and run the git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=88.44390909090903) [commit command. This is going to move our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=90.86766666666666) [new file into the head directory, i.e.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=94.06920000000004) [it's still going to be on our local](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=96.7095) [machine, but after we run this command,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=99.08266666666668) [it's going to be ready for us to push out](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=101.062) [onto the Google Cloud Source Repository.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=103.70025) [So we run the git push command, here the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=105.903) [exact command is git push -u origin](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=109.497) [master, origin refers to the remote server](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=112.27871428571429) [origin and the master here refers to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=115.097)[master branch. And this command causes a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=118.22614285714286) [new branch that's the master to be created](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=121.253375) [on the Cloud Source Repositories. If we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=124.28866666666667) [now switch over into the Web Console and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=126.69488888888888) [check out the Cloud Source Repos, we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=128.982) [see that our spikey-reviews-repo has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=132.16085714285717) [appeared there. Let's click through, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=134.303) [there in the source browser, we can see](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=136.51711111111112) [the CSV file that we had just uploaded. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=139.118) [have successfully cloned a repo to our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=142.170875) [local machine, gone ahead and added a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=144.151) [file, and then pushed that file into the master on the Cloud Source Repositories.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=2&mode=live&start=147.21612499999995)

[Using Source Repositories to Deploy an App Engine Application](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live)

[In this example, we will use the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=2.344) [Source Repositories to deploy an App](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=3.784) [Engine application. In the previous](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=7.117000000000002) [example, we were working from the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=8.901499999999999) [persistent disk of a VM instance. Here we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=10.397250000000003) [are just working from Cloud Shell. Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=12.589999999999998) [Shell has all of the latest libraries](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=14.469000000000001) [installed, and so we don't need to do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=16.625285714285713) [gcloud init or any of that other stuff.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=19.398600000000005) [Let's start by creating a new repo for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=21.9085) [this example. We make use of the command](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=24.1785) [gcloud source repos create, followed by](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=26.503250000000005) [the name of the repo, which is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=28.670999999999996) [spikey-web-repo. And as we can see from](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=31.99925) [this, we can also create a repo using the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=34.2994) [gcloud commandline utility. Let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=37.059249999999984) [and clone this repo, which is empty at](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=38.865571428571435) [this point, using gcloud source repos](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=41.47566666666667) [clone. As before, we are warned that we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=43.979800000000004) [may be cloning an empty repository. That's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=46.01866666666668) [fine, we are going to add some files in,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=48.41577777777778) [so let's cd into that directory and use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=50.324333333333335) [the Nano text editor to open up a web.py](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=53.703) [file. This is going to be a really simple](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=57.62340000000001) [Python file, all that it really does is to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=59.488333333333316) [accept incoming HTTP requests and go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=62.273222222222245) [and print out a simple message. That](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=65.41985714285715) [message is Welcome to Spikey Sales! And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=67.81985714285715) [this is the message that we will greet](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=71.08355555555555) [anyone who hits the root URL of our App](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=72.24) [Engine web app. Let's hit Ctrl+X, that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=74.953) [the way we save changes in Nano. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=78.2255) [write this to web.py, and then let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=81.3645) [ahead and create an app.yaml file. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=84.03157142857143) [a simple configuration file that's wired](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=87.08642857142857) [for App Engine, and we will use this file](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=88.81244444444444) [to specify details such as the version of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=91.752375) [the runtime that we are going to use, here](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=93.70922222222222) [we can just go with Python 2.7, The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=96.198375) [api\_version, and whether our app is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=98.749125) [threadsafe. Down below, we also have the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=101.64787500000001) [URL handlers, this is where we point](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=104.4965) [incoming requests into our web.app. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=106.97642857142858) [finally, we has a list of the required](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=109.37300000000002) [libraries. In our case, there's just one,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=112.52660000000002) [that's the webapp2 Python package, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=114.705) [we've specified version 2.5 .2. Let's go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=117.88266666666667) [ahead and save this file by hitting](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=121.14500000000001)[Ctrl+X, and then as before, let's use git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=122.59100000000001) [config to specify our user.name and user](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=125.88971428571429) [email. We've got all the files that we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=129.20975) [need in the current directory, so let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=131.048) [run the git add command, then we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=132.8365) [commit all of them with the message add](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=135.38099999999997) [welcome app to cloud source repo. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=137.9395) [going to add a couple of files to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=140.32300000000004) [head, that's app.yaml and web.py. We are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=143.59888888888887) [now ready to push these out, so let's run](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=146.41574999999997) [git push to the remote server origin from](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=149.0823333333333)[the master branch. And we can see that Git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=152.77379999999997) [takes over, it compresses them and copies](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=155.17725000000004) [them over to the Cloud Source Repo. We can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=156.672625) [verify that these files are indeed in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=159.60450000000003) [Cloud Source Repo by opening up the Web](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=161.81133333333335) [Console, navigating to Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=163.62816666666666) [Repositories, and there we do indeed find](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=165.724) [our spikey-web-repo. We click into it, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=169.375) [our app.yaml and web.py files are both in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=172.12612500000006) [there. Let's go ahead and deploy this App](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=176.2203333333333) [Engine app, for which we first need to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=177.9878750000001) [enable the APIs and Services. So we find](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=180.25511111111115) [the API browser, search for App Engine](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=183.33999999999992) [Admin API, and go ahead and enable it. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=186.79300000000003) [can confirm that the API Engine APIs have](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=190.668625) [been enabled, their Activation status is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=192.61816666666667) [Enabled, and now in Cloud Shell we can go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=195.0098888888889) [ahead and deploy our app with a single](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=197.705) [command, gcloud app deploy app.yaml.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=200.329) [That's all that we need in order to deploy](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=204.711) [our App Engine application. Remember this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=206.755) [is a regional service, so we are prompted](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=209.05633333333333) [for the region that we wish to use, let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=211.53744444444447) [go with asia-south1. This process will now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=214.4754285714286) [go through, and in just a little bit, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=217.00966666666667) [will have our App Engine application up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=219.80549999999994) [and running. It's important to note that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=222.1363333333333) [there is nothing that we've done so far](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=224.26499999999996) [with App Engine which was tied to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=226.41474999999994) [Google Cloud Source Repos. We are going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=229.07949999999994) [change that, in the next section, we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=232.52125000000007) [going to actually deploy directly from a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=234.60025) [Cloud Build, but first let's at least](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=236.66249999999997) [confirm that the local deployment is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=239.38671428571433) [working fine. So we type the command](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=241.43785714285715)[gcloud app browse. If we were doing this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=243.73399999999998) [from a machine which had a browser](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=245.90333333333328) [installed, it would directly open up the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=247.71157142857143) [URL for our Web App, but since there is no](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=249.770375) [browser available here, it gives us the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=252.40885714285713) [URL, we paste that into a browser on our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=254.4645555555555) [local machine, and we are greeted with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=257.31871428571424)[welcome message. So our local App Engine deployment has gone through successfully.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=3&mode=live&start=260.05175000000014)

[Implementing a CI/CD Pipeline Using Cloud Build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live)

[In this example, we will build on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=2.184) [previous one, we will integrate our Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=3.432) [Source Repo with Cloud Build, and set up a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=5.916) [simple CI/CD pipeline. As usual, we've got](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=9.373) [to begin by enabling the Cloud Build APIs,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=13.2815) [so we start in the API explorer, type](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=15.499999999999998) [Cloud Build API, find it and enable it.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=18.101000000000003) [Once that's done, the next thing that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=21.771) [we've got to do is to give the Cloud Build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=23.089625000000005) [service account the right credentials to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=25.64) [work with App Engine. So we find the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=28.117)[Navigation menu, IAM and Admin, and click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=30.74533333333334) [on the IAM tab. There we'll find the list](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=33.45355555555555) [of the service accounts in this project,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=35.611625000000004) [and one of them was created when we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=37.14249999999999) [activated the Cloud Build API. Let's edit](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=39.88028571428571) [it by clicking on the button over in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=42.31549999999999) [extreme right. We need to provide the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=45.94685714285713) [right role-based access control, and the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=48.02557142857141) [role that we are interested in adding here](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=49.8855) [is the App Engine Admin role. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=52.312) [going to allow Cloud Build to build and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=54.55399999999999) [deploy App Engine apps, and the reason we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=57.257000000000005) [need this is because we are going to use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=59.57977777777777) [Cloud Build on the code in our Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=61.36540000000001) [Source Repos, and the output of that build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=63.23950000000001) [is going to be pushed out and deployed](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=65.98077777777779) [into App Engine. Let's switch back to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=68.21275) [Cloud Shell, and there we cd into our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=70.94285714285716)[source directory, this is spikey-web-repo,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=74.0425) [and there we've got to add a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=76.057) [cloudbuild.yaml file. This is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=78.99866666666668) [configuration file which is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=80.47962500000001) [govern exactly how the build occurs. So we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=81.90528571428571) [use Nano to edit the file, and that brings](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=85.504) [us to maybe the most interesting part of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=87.685375) [this entire example. Here are the build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=90.0385) [steps, and in fact there's just one of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=92.35900000000001) [them, there's just one build step, that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=94.45600000000002) [build step is equivalent to running gcloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=96.47885714285715) [app deploy from the commandline. But the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=99.24425000000001) [reason this is so interesting is because](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=102.03575000000001) [we are invoking gcloud as a Docker](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=103.8848888888889) [container. This is something which is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=107.21611111111112) [available inside the Google Container](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=109.32414285714289) [Registry, that's the gcr.io, and the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=110.81774999999999) [arguments that we pass in to our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=113.24442857142856) [invocation of this container are the words](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=115.39549999999998) [app and deploy. When we put all of this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=118.26585714285717) [together, running this Cloud Build is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=120.4035714285714) [effectively just going to run gcloud app](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=122.15466666666667) [deploy, which is what we just did from our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=124.66657142857143) [local directory a minute ago. This time,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=127.69755555555551) [however, the action is going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=130.01324999999997) [performed by our service account, and it's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=130.99683333333334) [going to be operating on the files in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=133.365) [Cloud Source Repository. Let's save this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=136) [YAML file, add it to Git, and then go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=138.74966666666668) [ahead and commit so that it's present in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=141.66366666666664) [the head, and then let's push using git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=143.632) [push. And once this command runs through](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=146.80374999999998) [successfully, we will have three files in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=148.86383333333333) [our Cloud Source Repository. Let's switch](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=151.39266666666668) [back to the Web Console and confirm that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=153.8195) [that's the case. And indeed when we click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=155.9088) [through into the spikey-web-repo, the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=157.95587499999996) [cloudbuild.yaml file has appeared there as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=160.12) [well. So far, so good. The next step is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=162.98720000000003) [for us to wire up the Cloud Build with a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=165.7674) [trigger. In effect, every time a push](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=169.46144444444445)[happens to any branch in our repo, we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=171.37033333333338) [going to go ahead and build, and that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=173.73666666666662) [build is going to execute the gcloud app](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=175.7867777777778) [deploy command. So in the Navigation menu,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=179.08966666666666) [we find Cloud Build, and click on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=181.402) [Triggers. Then we click on the Create](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=184.4364) [trigger button. We give our trigger a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=186.62525000000005) [source, that's the Cloud Source Repo.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=188.99499999999995) [Notice as an aside that we can also use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=191.727) [Cloud Build in order to build Bitbucket or](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=194.65) [GitHub repos. We will then be asked for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=196.573)[the repo that we wish to build against,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=199.627) [that's spikey-web-repo, and then we move](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=201.735) [on to configuring the trigger settings. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=204.0398571428571) [name this the website-trigger, it's of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=207.1558) [type Branch, this means that the build is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=209.8095) [going to happen against all of the code in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=212.3803333333333) [a particular branch. The alternative is of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=214.8184) [type Tag, this would have the effect of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=217.60033333333337) [building all of the commits which match a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=219.98174999999992) [certain tag. Now we only have the one](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=222.79525) [branch in this repo, and that's the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=224.58799999999997)[master, so it's fine for us to go with](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=226.37250000000006) [the. \*, that's a wild card which is going](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=228.79849999999996) [to build all branches. In our case, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=231.463) [just have the one branch, and so this is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=233.5174444444445) [fine. Next, we've got to specify the build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=236.20999999999995) [configuration. Now notice that the default](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=238.97837499999994) [option here is Dockerfile, that's because](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=241.04200000000006) [Cloud Build is usually used to build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=243.198) [Docker containers. Remember that in our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=247.15933333333334) [case though we do not want to construct a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=249.46933333333328) [Docker container, rather we would like to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=251.74266666666662) [just run the command gcloud app deploy.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=253.42787499999994) [And that's why this is a non-Docker build,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=257.103) [and so we've got to specify a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=259.603) [cloudbuild.yaml file. As an aside, if](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=261.002) [you're executing non-Docker builds using](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=265.18314285714285) [Cloud Build, then you've got to specify a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=267.19685714285714) [build config file. So that's what we'll](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=270.99749999999995) [do, we specify the location of our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=273.5484999999999) [cloudbuild.yaml file. And finally we are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=276.00079999999997) [ready to Create our trigger. As the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=278.4286666666666) [dashboard tells us, this trigger is going](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=280.71450000000004) [to be pulled on a push to any branch.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=282.6954) [Let's go ahead and try it out. Let's edit](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=286.551) [our web.py to change the greeting. Right](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=289.03575) [now it's set to be Welcome to Spikey](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=292.0142) [Sales! Let's alter that so that it's now a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=295.03979999999996) [different message, something like](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=297.888) [Automatic updates using Cloud Build. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=299.69599999999997) [save this by hitting Ctrl+X, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=303.4458333333333)[let's go ahead and git add. There's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=306.08150000000006) [actually no need for this. Then let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=308.442) [commit, once that's done, we can finally](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=310.91266666666667) [push. And the git push from origin to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=313.9944999999999) [master is actually going to go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=316.5683333333333) [transfer our edited files to the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=320.18575000000004) [Source Repo, and once more, it's also](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=322.499857142857) [going to trigger a Cloud Build. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=324.4090000000001) [switch back to the Web Console, into Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=326.70300000000003) [Build, and navigate to the History. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=329.7328571428572) [there we can see that pushing the changes](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=332.35875) [to App Engine indeed did trigger a new](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=334.9812857142857) [build. At this point that build is still](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=337.639) [in progress, but if you wait for a second,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=339.33412500000014) [we see that it completes and we get a nice](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=341.567) [big green checkmark. Let's click on this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=344.019) [build and look at some of its results. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=347.39388888888885) [can see that the Status was successful, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=349.23388888888894) [can see that the Build steps, well there](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=351.495625) [was just the one step, and it was](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=353.9795) [equivalent to running from the commandline](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=356.59) [gcloud app deploy with the important](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=358.4956666666667)[difference that we were invoking gcloud as](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=360.789) [a container, and we were passing in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=362.9255) [words app and deploy as the arguments.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=365.77188888888895) [Let's scroll down and examine the build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=368.526) [logs. And down at the very bottom, we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=371.40999999999985) [see that the target URI was the same URL](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=373.7215555555557) [at which we have deployed our App Engine](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=377.21233333333356) [app. This has the default format project](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=380.61325000000005) [name .appspot .com. Let's copy that into a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=383.3655714285715) [browser window, and once we hit this URL,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=386.642) [we do indeed see the new message,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=389.682) [Automatic updates using Cloud Build. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=392.503) [have successfully engineered a simple](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=395.98566666666665) [CI/CD pipeline, in which we triggered a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=397.424) [Cloud Build whenever a push occurred into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=401.256) [our Cloud Source Repo, and the result of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=403.208) [that build was to update our App Engine deployment.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=4&mode=live&start=405.579)

[Adding a Repo as a Remote Repository](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live)

[In this demo, we will see how we can add a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=2.177) [repo on the Cloud Source Repositories as a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=4.456) [remote repository. And along the way,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=6.609) [we'll also check out how we can make use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=8.869) [of manually-generated credentials. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=10.979500000000005) [get started by SSH-ing into our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=13.977428571428572) [spikey-engineer-instance. This is a VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=15.612) [instance, which we had previously used, so](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=18.256499999999996) [let's just SSH into it. The first command](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=20.484499999999997) [that we run is git init, followed by the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=23.65666666666667) [spikey\_remote\_repo name. Git init is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=27.259) [command which is going to create a new Git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=29.564999999999998) [repository. This is going to be done](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=32.5498) [locally here, right here on this VM](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=34.795000000000016) [instance. Git init can be used either to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=37.647166666666664) [convert an existing un-versioned project](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=40.06466666666667) [into a Git repo, or to initialize a new](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=41.97350000000001) [empty repo. In either case, this local](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=46.40675000000002) [repo is going to be the starting point. In](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=49.19822222222222) [other words, this local repo is going to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=52.68677777777778) [be the origin. That changes some of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=55.021) [steps that we are going to run in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=57.04)[course of this demo. Our empty Git repo](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=58.553) [has been initialized, let's ls its](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=62.4817142857143) [content, cd into it, and then go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=64.72314285714285) [configure the credentials. Now this step](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=68.94962499999997) [is in the Google Docs, and it's pretty](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=71.43775000000001) [arcane. Let's try and make a little sense](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=73.69875) [of it. Effectively, we are going to use](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=75.18477777777775) [the git config command with a credential](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=77.49024999999997) [helper, and that credential helper is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=80.72716666666666) [going to be the gcloud.sh file. And where](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=83.12112499999999) [is that credential helper going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=86.87300000000003) [obtained, at the URL which is included in](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=89.17466666666665) [the command. That URL requires your Google](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=91.68288888888887) [account credentials in order to access,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=94.77883333333334) [and the credential helper there is going](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=97.12) [to work with Git and allow this command to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=98.91812499999996) [connect securely to the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=101.383) [Repos. This step is going to allow us to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=104.04528571428575) [connect to our repos using](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=106.1334444444444) [manually-configured credentials, more on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=108.1406) [that in a minute. First, let's just](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=109.977) [examine the contents, and we can see that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=113.12799999999999) [this is indeed an empty Git repo. This is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=115.27300000000002) [the origin right here, let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=118.14750000000002) [now create the remote. So we navigate into](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=121.45150000000001) [the Cloud Source Repositories, and go](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=123.52642857142858)[ahead and create a new repository, this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=125.18725) [one has the name spikey-remote-repo. As](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=127.61599999999999) [usual, it's in the project spikey-dl.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=129.82366666666667) [We'll go ahead and create the repo, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=132.85266666666666) [once it's ready, we go ahead and clone it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=136.00628571428572) [by clicking on that little plus icon over](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=137.77300000000008) [on the extreme right. And while doing so,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=141.0556666666666) [we'll have to make use of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=143.76055555555556) [manually-generated credentials, so we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=145.20733333333334) [select that option, we copy the URL of our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=147.24644444444445) [repo, and we go ahead and add it as a new](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=150.13045454545457) [remote into our local repo. The command](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=153.959) [for this is git remote add, followed by an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=157.61050000000003) [alias for the remote, which here is the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=160.6981428571428) [word google, and then the remote URL. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=162.88277777777773) [are not naming this the origin because](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=165.45825) [that would be more intuitively applicable](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=168.22466666666665) [to the local repo. Next, let's go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=170.90366666666668) [and create a simple file by echoing a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=174.03900000000002) [complex statement into that strategy.txt](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=176.39499999999998) [file. Let's confirm that the file has come](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=180.04566666666668) [into existence, and then go through the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=182.21575)[usual steps required to add this file, git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=184.54757142857142) [status, which confirms that this file is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=187.1272857142857) [untracked, then we go ahead and run git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=189.41544444444446) [add strategy.txt, which goes ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=192.971) [adds it into the master, and then git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=195.25185714285715) [commit. The next step is for us to push](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=197.9752499999999) [this to the remote, and we are going to do](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=200.07145454545463) [that using the git push command, followed](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=202.1218888888888) [by the alias we had for the remote, which](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=204.49774999999997) [was google, and the branch, which is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=207.20974999999993) [master as usual. And from here on in,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=209.48674999999994)[everything else works just as before. Our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=211.96362499999992) [files have been pushed out onto the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=214.5575) [Source Repo, so if we hit Refresh, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=217.2335555555555) [navigate into the spikey-remote-repo, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=219.57399999999998) [find that strategy.txt appears there. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=221.81799999999998) [notice about the contents of the file, the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=225.93825) [commit tag, which is that system-generated](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=227.83416666666668) [string 07b6af3. Next let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=231.45600000000002) [create a new file, this is a 5% off offer.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=236.5046666666667) [We git add the offer.txt, then we commit](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=240.022) [it, and then we push it out into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=243.373) [remote, which was called google this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=245.912) [instance, using the command git push](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=248.729) [google master, instead of the git push](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=250.56671428571426) [origin master, which we've been using all](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=252.63100000000003) [along. We go ahead and run this command,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=255.46028571428567) [and we can see now that there is a new](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=256.996) [commit tag, and the same tag is visible](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=259.61) [when we refresh the Cloud Source Repo, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=261.356) [examine offer.text. Now let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=265.5106666666666) [push yet another version of the same file,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=268.0741249999999)[this time the offer has changed.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=270.30475000000007) [Previously it was 5% off, now it's 10%](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=272.5205714285715) [off. So we are updating the local file,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=276.6696000000001) [then we are rerunning git add, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=278.901)[git commit, and then git push. This git](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=282.3872222222223) [push has yet another commit tag, and we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=286.48625000000004) [can now use these two different commit](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=289.27925000000005) [tags in order to compare the versions of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=291.21757142857143) [our file. In the Cloud Source Repos, we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=294.02049999999997) [can select this file offer.txt, and then](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=296.88224999999994) [hit the Compare button right up top. As](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=299.83085714285704) [the tool tip tells us, we can compare](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=302.81533333333334) [against a branch, a tag, or a commit.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=303.978) [Let's click on that, and we can see that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=307.763) [there are now two versions corresponding](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=309.008) [to the two commits. We can see it's nicely](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=311.45685714285725) [highlighted how the 5% off has become 10%](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=315.502) [off. And finally let's take a quick look](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=319.2851111111109) [at how we can undo changes made to our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=320.7566666666668) [local repo. Let's say we delete the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=323.95166666666654) [strategy.txt file by mistake, so now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=326.90014285714295) [there's only the offer.txt in this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=328.34985714285716) [directory. Thankfully the remote still has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=330.6425) [our strategy.txt file safe and sound, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=333.00266666666664) [in fact we can even see that there are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=336.129) [versions for each of the commits. So we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=337.983) [switch back to the local repo, and just](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=340.501) [run a git reset --hard, and this will have](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=342.9134285714286) [a reset effect, it will sync us back to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=346.5431428571429) [the remote, and if we now run the ls](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=349.23275)[command, we will see the strategy.txt file has reappeared.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=5&mode=live&start=351.15962499999983)

[Configuring Cloud Source Repositories to Work with GitHub](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live)

[Let's go ahead and see how we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=1.694) [configure a repo hosted on GitHub to work](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=3.0815555555555547) [with a Cloud Source Repo. Let's pick up](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=5.704222222222221) [the action by creating a new repo, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=8.858333333333333) [this time the repo is going to be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=10.3978) [connected to an external repository. Note](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=12.489) [that this external repository could be](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=15.643714285714285) [either on GitHub or on Bitbucket. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=17.544) [click on Continue, and we are prompted for](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=20.40385714285714) [the details of the external Git provider.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=22.848714285714284) [So let's go with GitHub, we've got to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=25.53557142857143) [agree to the interconnection. Notice that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=28.55342857142857) [we're allowing Cloud Source Repos to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=30.879333333333335) [collect and store our GitHub](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=32.68942857142857) [authentication credentials. Once that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=34.328)[done, let's go ahead and connect to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=36.72128571428572) [GitHub, we'll have to enter our username](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=38.66100000000001) [or email ID and our password, and this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=40.56971428571429) [moves us on to another dialog where we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=43.193000000000005) [specify which repository on GitHub we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=45.87971428571429) [would like to connect. At this point, this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=48.206) [user, Spikey User, has just the one repo](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=50.78542857142858) [on GitHub, and that repo is called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=53.2452857142857) [datalab. So let's go ahead and connect the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=55.392166666666654) [selected repository. The connection has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=58.10444444444443) [been established, we hit OK, and now we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=60.62180000000001) [find this shows up in our list of All](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=63.18354545454547) [repositories. Notice the name is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=65.81039999999999) [github\_spikeyuser\_datalab. We were not](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=67.544) [prompted for the repo name, this is just a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=71.37925) [combination of the external host, that's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=74.33349999999999) [GitHub, the user, that's Spikey User, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=76.42160000000001) [the external repo, which is datalab. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=79.18914285714285) [go ahead and click on the Settings icon](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=81.20499999999998) [over on the right, that's the little wheel](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=83.77099999999999) [icon. And this allows us to see the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=86.63099999999997) [connected repository URL. Now let's go to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=88.64037500000002) [that connected repository and create a new](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=91.55985714285715) [file. This file is going to be called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=94.70857142857145) [schema.txt, it's within the Datalab](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=97.08312499999997) [repository, and we edit it by typing out a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=99.45159999999998) [few fields. Once we are done, we hit](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=102.41179999999994) [Commit, and we can confirm that just as we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=103.90119999999997) [can view this file in the Git repo on](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=106.2557777777778) [GitHub, we can also switch back to the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=109.08333333333336) [Cloud Source Repos and find the file](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=111.2815) [there. This is because of the automatic](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=114.06575) [sync between Cloud Source Repos and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=116.20399999999998)[GitHub. We can click through and find the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=118.57416666666663) [exact data which we just entered in the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=121.01987499999998) [GitHub repo. We can also see that there's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=123.38100000000004) [just the one branch, that's called the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=125.11633333333337) [master, and there are no tags. Let's now](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=127.5544) [switch back to the external repo and make](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=130.92274999999998) [a few changes there. Let's go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=133.21433333333334)[create a new branch, so right now there's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=136.42050000000003) [the master, but we add a new branch called](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=138.51933333333332) [develop, this forks off from the master,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=140.78700000000003) [so we have two branches now in total. And](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=143.05312500000002) [sure enough, if we now switch back over](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=145.79088888888887) [into the Cloud Source Repositories and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=148.30485714285712) [Refresh, we shall find that there are two](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=150.10399999999998) [branches there as well. There is the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=153.429) [master as before, but the develop branch](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=155.32000000000002) [has appeared as well. At whatever point we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=157.07450000000003) [would like to break the link between the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=159.41) [Google Cloud Source Repo and the remote](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=161.51814285714286) [GitHub repo, that's easy enough to do.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=164.13199999999998) [Let's just navigate into the details of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=166.494) [our repository, and there in the General](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=168.72699999999992) [settings tab, we'll have a big button](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=171.472) [saying Disconnect this repository. If we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=173.571) [click on this, we get a warning telling us](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=176.13599999999997) [that this disconnection will remove the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=178.65566666666666) [connection between the external GitHub](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=181.19066666666666) [repository and Cloud Source Repos. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=182.82150000000001) [original repository in GitHub is not going](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=185.01771428571428) [to be affected, but once we disconnect, it](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=187.40185714285712) [no longer appears in our list of the repos](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=189.40699999999998) [in this particular project. We have](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=192.97849999999994) [demonstrated the linkage between an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=195.6035714285714) [external repository and a Cloud Source Repo.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=6&mode=live&start=197.075)

[Integration with Pub/Sub to Receive Change Notifications](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live)

[Let's round off this course with an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=2.076) [example that will show we can send out a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=3.8391250000000006) [Pub/Sub message each time a push occurs](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=6.627000000000002) [into our Cloud Source Repo. By wiring up a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=9.2945) [cloud function or some other piece of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=12.935750000000004) [compute at the other end, we can integrate](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=14.722499999999997) [source repos and take pretty much any](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=16.554285714285715)[action that we would like each time a push](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=19.021000000000008) [happens. So let's get started by locating](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=21.30875) [Pub/Sub in the Navigation menu, it appears](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=23.496249999999993) [under BIG DATA, and we click on the Topics](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=25.891999999999996) [section. The first thing that we need to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=29.536750000000005) [do there is to create a topic, this is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=30.642599999999995) [where the message is going to be emitted.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=32.75775)[Let's call this topic the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=34.905) [spikey-web-repo-pub. This tells us that](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=38.25166666666667) [it's a publisher. Let's create this, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=40.34785714285713) [we now have a publisher, we can now click](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=42.1705) [on the three vertical dots over on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=44.75862500000001) [extreme right, and there's a menu for us](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=48.56428571428571) [to create a New subscription on this](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=50.47340000000001) [topic, to Publish a message on this topic,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=51.965714285714284) [or to even Delete it. Let's use this menu](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=54.78088888888888) [to create a new subscription, let's call](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=57.468500000000006) [that the spikey-web-repo-sub. And the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=59.3744) [suffix sub tells us that this is a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=63.634090909090915) [subscription. 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So this command](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=90.526) [is gcloud beta source repos update,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=95.24537499999998) [followed by the name of the repo, which is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=97.73725) [spikey-web-repo, and then the add-topic](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=100.27099999999999) [flag. We've got to specify the Pub/Sub](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=102.57685714285714) [topic that we want to publish onto. We run](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=105.98475) [this command, and the update goes through](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=110.17625) [successfully. Let's now go ahead and try](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=112.2495) [this out. So let's cd into our repo, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=114.37525000000002) [let's edit the web.py file using Nano. As](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=117.7211111111111)[before, let's go ahead and update our](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=122.701875) [greeting, so this has something about](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=124.815) [eye-popping Black Friday offers, and let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=126.411) [save this out. Let's run git add, follow](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=129.732) [that up with a git commit, and finally the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=132.94755555555562) [git push. Now remember that this is the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=136.60300000000004) [same repo which we have wired up to a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=139.90600000000003) [Cloud Build. So let's switch back into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=142.95911111111113) [Web Console, go to Cloud Build and check](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=144.79025000000007) [out the history. As before, the gcloud app](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=147.0203333333333) [deploy command ought to have run, we can](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=150.47) [see that the build is still in progress,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=152.70600000000005) [but when we scroll down, we can see the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=154.183625) [target URL has indeed been updated. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=156.38566666666665) [paste it into the browser, and we see once](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=160.27499999999998) [again that our simple CI/CD pipeline has](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=162.0272857142857) [worked. We get the message about the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=164.664) [eye-popping Black Friday offers. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=166.645) [also check whether a message was published](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=170.45585714285713) [on our topic, this we can do using the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=171.917375) [gcloud alpha pubsub subscriptions pull](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=175.185) [command, followed by the name of the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=178.197) [subscription. This is the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=181.59899999999993) [spikey-web-repo-sub, it's a subscription](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=183.627) [we had previously created. And when we run](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=185.41428571428568) [this, we find that there is indeed a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=188.08520000000001) [message, the event time, and URL, and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=190.4965) [other information about our push are](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=193.70285714285714) [indeed reflected here. In fact, if we look](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=195.814)[really carefully, we can even find the old](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=199.35271428571434) [and the new commit IDs, these are the same](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=201.38559999999993) [IDs which are displayed in the output of](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=204.49637499999997) [the git push command. We have successfully](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=207.29600000000005) [wired up a Pub/Sub topic to receive](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=209.20085714285716) [notifications when a push occurs to our Cloud Source Repo.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=7&mode=live&start=211.81128571428573)

[Summary](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live)

[That gets us to the end of this module and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=2.217) [the end of this course. Let's summarize](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=4.305) [the ground we covered in this module. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=6.396428571428571) [began by seeing how we can create and](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=8.411666666666667) [clone repos to our local machine. We](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=10.78825) [performed various operations with the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=13.799333333333333) [Cloud Source Repositories using both the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=14.706)[web interface, as well as the gcloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=17.444) [commandline utility. We then moved on to](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=19.825) [an interesting example in which we used](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=22.387625000000007) [the Cloud Source Repositories to deploy an](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=24.378000000000004) [App Engine application. We then integrated](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=26.894714285714283) [that app with Cloud Build and triggered a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=29.247999999999998) [simple CI/CD pipeline, where as soon as a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=32.86533333333333) [developer pushed in a change into the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=36.31628571428572) [source code, that led to an automatic](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=39.09750000000001) [build and a redeployment of the updated](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=41.532374999999995) [App Engine app. We then also learned how](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=44.03142857142857) [to work with a remote repo and manual](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=46.13855555555556) [credentials, and finally we connected to a](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=48.879) [hosted repo on GitHub and tested the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=51.548749999999984)[synchronization between the Cloud Source](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=54.690833333333345) [Repos and GitHub. We rounded out the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=56.760857142857155) [module by learning how to integrate Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=58.60200000000001) [Source Repos with Pub/Sub. Before we part](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=60.588) [ways, I'd like to remind you to delete all](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=63.17066666666666) [of the cloud resource which you](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=65.57887499999998) [instantiated during this course. This was](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=67.55) [a pretty diverse and broad course, so we](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=70.57624999999999) [made use of a lot of different resources.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=72.74600000000001) [Please remember to delete all your Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=75.494) [Source Repos, then go ahead and delete](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=77.114) [your Datalab VM instances, as well as the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=79.84400000000001) [VM instance which we had created to work](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=82.33137500000004) [with Git. There is also the Cloud Storage](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=85.0405555555556) [bucket that's used to automatically back](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=87.835) [up Datalab, then there is the Cloud Build](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=89.38100000000003) [trigger, the Pub/Sub topic, and finally](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=93.094) [the App Engine deployment. All of these](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=95.00800000000001) [are billable resources, and you probably](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=97.55499999999998) [want to be careful about deleting them,](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=99.220875) [else you might end up with an unpleasant](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=100.93050000000001) [surprise the next time you get your GCP](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=103.01157142857144) [bill. Depending on whether you found](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=105.59642857142856) [Datalab or the Cloud Source Repos more](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=108.01740000000001) [useful, here are a couple of related](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=110.23550000000002)[courses that might come in handy. The](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=112.0287142857143) [first of these is called Architecting](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=113.917125) [Production-ready ML Models Using the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=115.95175) [Google Cloud ML Engine, and the next is](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=118.46766666666667) [Architecting Scalable Web Applications](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=121.19585714285715) [Using Google App Engine. These are a part](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=122.6388) [of Pluralsight's excellent catalog on the](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=126.14314285714288) [GCP. Thank you for watching, and I hope you enjoyed the course.](https://app.pluralsight.com/player?course=google-cloud-platform-datalab-source-repositories-developing&author=vitthal-srinivasan&name=7239101a-5037-40a5-99b8-377d6f2badfb&clip=8&mode=live&start=128.19514285714286)