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However, the vast](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=49.506666666666675) [number of Firebase services are geared](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=52.25449999999999) [towards helping mobile and app developers](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=54.3142) [build better apps, improve the quality of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=56.27566666666668) [their applications, and grow their](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=58.36966666666668) [business. 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Integrating Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=85.443) [Functions with your mobile or web apps](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=88.04540000000001) [make it easy to set up triggers for user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=90.28320000000002)[notifications, realtime database](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=93.91424999999998) [operations, and allow you to move your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=95.42699999999999) [intensive operations to the cloud rather than doing them in-app.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=0&mode=live&start=98.32900000000001)

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We'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=83.756) [write to Cloud Firestore, that is,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=85.28357142857142) [Firebase's realtime database, using Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=87.273) [Functions. We'll also see how we can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=90.02049999999997) [trigger functions from Cloud Firestore. In](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=92.13899999999998) [the module after that, we'll see how we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=94.91944444444445) [can use Firebase hosting to host our web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=96.883) [applications. We'll host our website on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=99.47588888888886) [Firebase and store our static assets on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=102.08999999999999) [Cloud Storage. We'll also see how easy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=104.97385714285717) [Firebase makes it to integrate](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=107.49412500000001) [authentication into our apps. We'll have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=109.45233333333333) [our web user sign in anonymously, as well](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=111.741) [as using Google auth into our application.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=114.00371428571428) [And in the final module of this course,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=117.643) [we'll see how we can use Facebook Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=119.928)[messaging in order to integrate app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=122.477) [notifications. In-app notifications are a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=125.72985714285718) [user engagement and growth service offered](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=127.736) [by Firebase, and we'll see how easy it is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=129.8233333333333) [to set up this integration. Through all of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=132.39379999999997) [the demos in this course, we'll assume](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=135.12975000000003) [that we are engineers working at this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=136.67785714285714) [hypothetical online retailer called](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=138.76066666666665) [SpikeySales.com. SpikeySales specializes](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=140.942) [in flash sales of trending products, which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=143.856) [means they experience great variation in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=146.44383333333332)[user traffic. Traffic is especially high](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=148.40116666666665) [on sale days. Engineers at this company](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=151.1632857142857) [are contemplating a move away from their](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=153.0885714285714) [on-premise datacenter to the cloud,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=155.30466666666666) [specifically the GCP. Cloud computing fits](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=157.458) [their bill perfectly. They want](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=160.5385) [pay-as-you-go functionality and do not](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=162.57500000000002) [want to provision extra resources during off-sale periods.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=1&mode=live&start=164.8602857142857)

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It's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=8.498333333333335) [distinct from the Google Cloud Platform of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=11.240571428571432) [the GCP, but there are some integrations,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=13.699000000000002) [close integrations, in fact. There are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=15.541)[many products out there that are based on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=17.89) [applications, either web apps or mobile](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=19.854999999999997) [apps. Firebase allows these developments](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=22.2578) [to get up and running quickly without](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=24.96985714285714) [worrying about the infrastructure](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=26.721249999999998) [available on the Google Cloud Platform.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=28.1002) [Firebase and the GCP have many elements in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=30.75242857142857)[common, such as certain products. Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=33.979124999999996) [storage buckets and Cloud Functions that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=36.33233333333333) [we'll study shortly are part of both](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=38.51611111111111) [platforms. In fact, when you work with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=41.330888888888886) [Firebase, you can add additional](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=43.3392857142857) [infrastructure components from the GCP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=45.07740000000001) [very easily as and when you need it. All](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=46.365500000000004) [of the resources that you use on Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=49.139124999999986) [Cloud Platform lie within a project. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=51.65171428571428) [same is true for Firebase. You can set up](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=53.87883333333333) [one project which uses services and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=56.659499999999994)[products from Firebase, as well as from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=58.5798) [GCP. You can get a single integrated bill](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=60.927) [for the products and services that you use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=63.383250000000004) [across both platforms. The mechanisms for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=65.549) [access control on the GCP, as well as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=68.31128571428573) [Firebase is exactly the same. The same](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=70.80944444444445) [role-based access control works for both.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=73.33966666666666) [Similar terms of service apply to products](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=75.74328571428572) [from both platforms. There is a concerted](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=78.63579999999999) [effort to move all the Firebase services](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=81.06533333333336) [to the GCP's terms of service. And if you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=83.09125) [want to work with Firebase, you'll sign in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=86.953) [using a Google account, whether it's a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=89.03785714285715) [Gmail account or a G Suite account that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=91.05266666666668) [belongs to your organization. So if these](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=93.40566666666666) [two platforms are so similar and share](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=95.99787500000001) [services, why does it make sense to have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=97.83699999999999) [two rather than just one? The answer to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=100.266) [this question boils down to whom these](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=103.14725) [platforms target. 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GCP makes Google's infrastructure](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=112.373) [publicly available as services. With the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=115.27859999999998) [GCP, you're using the same infrastructure,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=117.93914285714285) [networks, VMs, clusters that Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=120.314) [developers work with. 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The main users of the GCP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=133.57399999999996) [are server-side and back-end developers.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=136.13975000000002) [They provision in for a write back-end](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=137.716) [code skill services. As we explore the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=139.78099999999992) [Firebase platform, you'll find that the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=142.3551428571428) [services available are targeted at](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=144.6283333333334) [building applications quickly, engaging](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=146.50060000000002) [and growing the user base for your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=148.20780000000002) [product. 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When we explore the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=178.478) [Firebase platform, you'll find that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=181.63233333333338) [services in Firebase are broadly divided](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=183.23757142857147) [into three categories. Services which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=185.7014) [allow you to get up and running with your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=187.90900000000002) [application quickly, services which allow](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=190.7614) [you to improve the quality and performance](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=192.54842857142862) [of your applications, and finally,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=194.40139999999997)[services targeted at growing your business](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=196.52) [and users. You'll find that most of these](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=199.107) [services are available for Android, iOS,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=201.513) [web applications, C++, and unity](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=204.262) [developers. Here are some examples of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=207.8886666666667) [Firebase services that speed up](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=210.1632857142857) [application development. Cloud Firestore](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=212.08380000000002) [allows you to sync content across](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=213.65185714285715) [applications in real time. An ML Kit will](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=215.7656) [allow you to perform machine learning on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=218.4665) [your device. Cloud Functions is for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=220.83880000000002) [event-driven computing. 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Firebase was initially a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=236.59750000000003) [separate company that Google bought in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=239.07100000000003) [October 2014. At that point, they had just](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=241.2633333333333) [one offering, the realtime database, which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=244.31850000000006) [was extremely popular amongst app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=246.5526666666667) [developers. That is still available, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=248.61249999999998) [you can use it if you want to. Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=250.35177777777776) [Firestore is a newer alternative to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=253.28611111111104) [realtime database that is currently in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=255.55100000000002) [Beta. Here are some of the services that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=257.862)[Firebase offers in order to improve the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=260.51275000000015) [quality of your application. Crashlytics](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=262.01925000000006) [gives you realtime insight into your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=263.929) [application crashes and other performance](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=266.3046) [monitoring issues. You can also use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=268.9496666666667) [Google's test lab that allows you to test](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=271.485) [your functionality on devices. Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=273.8547142857143) [has an entire sweep of products focused](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=277.2805714285714) [only on engaging and growing the number of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=2&mode=live&start=280.24285714285713) [users for your applications. 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[In this module, we'll be working with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=0.759) [Cloud Functions, which is a feature that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=2.385625) [is available on the GCP, as well as on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=4.427428571428571) [Firebase. If you've worked with Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=7.4525555555555565) [Functions on the GCP before and you're](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=8.686571428571428) [only interested in Firebase integration,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=10.53971428571429) [you can skip over this clip entirely.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=12.294714285714283) [Cloud Functions are Google's event-driven](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=14.985500000000002) [serverless compute platform, which means](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=17.525999999999996) [that this is a way for you to execute code](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=19.80728571428571) [on the Google Cloud without provisioning](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=23.014333333333337) [any VMs or hosting any applications.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=25.691500000000005) [Serverless compute abstracts away all of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=28.376) [these underlying details of provisioning,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=31.596) [managing servers, and configuring](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=33.57) [software. You only focus on writing code](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=35.95640000000001) [and the platform takes care of the rest.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=38.46624999999999) [Here is a big picture overview of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=40.923) [event-driven serverless compute on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=43.408) [GCP. An external event occurs. This is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=45.216333333333324) [typically with another GCP service, or](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=48.077571428571424) [maybe an HTTP event. The GCP is constantly](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=50.6068) [monitoring these events, and if you have a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=53.978666666666655) [function registered to listen for this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=55.74499999999998) [event, the platform will take care of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=57.95016666666665) [triggering the execution of that function.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=60.27371428571427) [Once the function is triggered, the actual](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=62.453) [code that you've written for the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=64.81757142857143) [Function is executed and it performs all](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=66.39028571428572)[of the operations that you've asked it to.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=68.58414285714287) [Cloud Functions are closely integrated](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=71.17514285714284) [with all other services on the GCP and on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=72.97771428571428) [Firebase. You can have your Cloud Function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=75.96549999999999) [invoke these services to perform whatever](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=77.92542857142854) [operations that it needs to. Maybe it](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=79.73) [needs to write to a database. Maybe it](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=81.82275) [needs to process text using natural](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=83.96042857142858) [language APIs. The execution of a Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=86.53733333333334) [Function is in response to an event that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=88.984) [occurs in the external environment, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=90.918) [you can explicitly wire up your Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=93.33875) [Function to respond to these events. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=95.64) [functions can choose whether it wants to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=98.86128571428571) [respond or not. Let's see using Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=100.88875) [Functions to respond to user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=103.687) [notifications. A notification comes in and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=106.0578333333333) [is written out to a database. This writing](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=107.72512499999999) [out to a database can trigger a Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=110.34162499999996) [Function, which can then clean up the data](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=113.52616666666667) [that's written out or maybe inform other](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=114.81524999999998) [apps. Cloud Functions respond to basic](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=117.62899999999996)[categories of events. HTTP events, which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=120.14033333333333) [can be triggered HTTP requests such as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=122.84942857142856) [GET, PUT, or POST requests are background](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=125.55585714285716) [events. Background events are triggered by](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=128.48433333333332) [other services on the GCP. This can be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=130.80449999999996) [Cloud Storage, the Pub/Sub message](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=133.0611428571429) [delivery platform, stackdriver logging, or](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=135.01866666666666) [the services within Firebase, such as the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=137.456) [realtime database. When an external event](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=140.40533333333332) [occurs that triggers a Cloud Function, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=142.39257142857147) [GCP takes over and ensures that the event](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=144.6835) [information is passed onto the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=147.21966666666663) [Function with all of the function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=149.19899999999996) [parameters nicely packaged up. Additional](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=151.18585714285715) [context is also passed into the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=152.76457142857143) [Function. Once the Cloud Function is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=155.33985714285714) [invoked, the code that you write is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=157.343) [executed. Currently Cloud Functions just](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=159.43425000000008)[supports limited runtimes. If you use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=161.65939999999995) [Cloud Functions directly without Firebase,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=163.4743333333334) [you can write code in Python or JavaScript](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=165.893) [using Node. When you work with Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=168.73) [Functions for Firebase, you can write code](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=170.587) [in JavaScript using Node.js or TypeScript.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=173.07) [Cloud Functions are meant to be stateless](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=176.621)[and they automatically scale to handle the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=178.864) [load that you generate with your request.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=180.963) [Multiple function instances are created](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=182.61) [based on the current load. These functions](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=185.66) [do not share memory or variables, so each](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=187.71714285714285) [function can be thought of as stand-alone](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=190.44828571428567) [stateless processing. A single instance of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=193.88360000000003) [a Cloud Function processes just one](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=196.05914285714283) [incoming request. So if you have multiple](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=198.06579999999997) [requests, they'll be handled by different](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=200.68250000000003) [Cloud Function instances, which means](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=202.0911666666667) [functions should be stateless. That's a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=204.803) [best practice when you're working with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=206.5171428571429) [Cloud Functions. Cloud Functions are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=208.17533333333333)[extremely useful for app developers when](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=210.51899999999998) [they want to move intensive processing to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=212.38785714285711) [the Cloud rather than doing it in-app.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=214.37750000000003) [Cloud Functions can invoke other GCP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=217.274) [services for its processing task. This is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=219.778) [a basic idea of how Cloud Functions work](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=222.72488888888887) [on the GCP and with Firebase. In the next](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=224.86928571428572) [clip, we'll see how Cloud Functions can be useful for app developers.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=4&mode=live&start=227.797875)

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[In this clip, we'll talk about how having](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=0.777) [event-driven serverless compute functions](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=3.099) [available to us can make app development](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=5.938) [even more powerful. So we have GCP Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=7.914428571428569) [Functions, which are closely integrated](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=10.467000000000002) [with Firebase. Cloud Functions for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=12.545333333333335) [Firebase is what we are going to look at.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=14.171000000000003) [Cloud Functions are a great fit for many](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=17.142) [common application development scenarios,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=19.307) [such as user notifications. Let's say a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=20.789) [user of an e-commerce site wants to track](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=23.875375000000005) [his or her package delivery. You can have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=25.95475) [Cloud Functions send out a notification](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=28.224) [each time the status of the package](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=30.30485714285714) [changes. Cloud Functions are also a great](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=32.774166666666666) [way to get notified of realtime database](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=35.2265) [updates. Let's say one user writes to a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=37.436) [database. This can trigger a Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=40.054249999999996)[Function that processes that message and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=42.026285714285706) [maybe writes it out somewhere else. For](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=43.37533333333333) [any client application that you write,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=46.17671428571429) [whether it's for the web or for a mobile](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=47.297) [device, you'd want this to be lightweight](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=49.654) [and responsive, which means intensive](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=52.016) [tasks have to be moved to the cloud. Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=53.829333333333345)[Functions make it very easy to integrate](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=56.307) [this setup. You can also have Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=58.68833333333333) [Functions integrate with third-party](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=61.644) [services and APIs instead of doing so](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=63.017999999999994) [directly from within your app. Here is an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=65.04537499999998) [example, a big picture overview, of how](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=67.65825000000001) [Cloud Functions can be used to integrate](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=69.81949999999999) [user notifications into your application.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=71.79533333333333) [Let's assume the app that you're building](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=74.437) [is kind of like Twitter where a user has](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=75.906) [followers. Each time a new follower is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=79.10550000000006) [added to a particular user, you might want](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=80.69099999999999) [to update your database. 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A follower for a particular user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=88.45262500000004) [has been added or written out to this path](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=89.92224999999996) [that you see here onscreen. When the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=92.14611111111113) [chooses to follow another user, this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=95.24785714285716) [information is now available in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=97.61885714285712) [database. Let's say it's the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=99.80479999999999) [realtime database. This can trigger a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=101.86342857142859) [Cloud Function, which can then call into](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=104.14) [Firebase Cloud Messaging, and Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=107.4855714285714) [Cloud Messaging can inform the user that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=109.639) [he has a new follower. This is how](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=112.09349999999998) [serverless event-driven compute offered by](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=115.4255) [Cloud Functions can form an integral link](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=117.5732857142857) [the chain of user notifications. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=119.82414285714286) [take a look at another example here where](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=122.52624999999999) [Cloud Functions can work with realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=124.77116666666667) [database operations. We'll use Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=126.36933333333333) [Functions to sanitize the data that we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=128.44957142857143) [write out to the realtime database. For](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=130.87900000000002) [example, SpikeySales.com has an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=133.4614) [application where a user is allowed to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=135.935) [write out reviews. These reviews are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=137.484) [written out to the realtime database so](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=139.309) [that they are immediately updated on other](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=141.116) [client apps. However, we want to be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=143.862) [careful that these messages do not contain](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=145.946) [offensive content. Updates to the realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=148.184) [database can trigger a Cloud Function. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=150.5525714285714) [Cloud Function will then read the incoming](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=152.92928571428573)[message and do a quick sanity check for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=155.24585714285715) [offensive content. The Cloud Function can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=158.192) [then perform the processing needed to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=160.63242857142862) [sanitize this message and write the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=163.02949999999998) [sanitized message out to the database so](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=165.41237499999997) [that other client apps see only the sanitized message, not the original.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=5&mode=live&start=167.47375)

[Build and Deploy the First Cloud Function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live)

[In this demo, we'll write a simple Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=1.247) [Function using TypeScript, and deploy it](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=3.682) [to the cloud using our Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=5.716857142857142) [command-line utility. We'll store the code](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=8.430285714285715) [for this Cloud Function inside the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=10.153714285714285) [spikey\_greetings\_func directory cd into](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=12.890999999999998) [this directory, and here is where we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=14.8424) [set it up. In order to get started with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=16.899625) [Cloud Functions from the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=19.73328571428572) [command-line, you'll need to first run the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=21.176399999999994) [firebase init functions command. This will](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=23.800500000000007) [prompt you to associate your Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=25.76628571428571) [Function with a particular Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=27.7925) [project. All of the resources that you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=30.178) [provision on the GCP has to be associated](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=32.65425) [with the project, as does your Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=34.77049999999999) [Function. All of the projects where you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=36.756666666666675) [have Firebase enabled should be listed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=38.831500000000005) [here on your screen. I have just the one](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=40.568000000000005)[spikey-firebase, and this is the project](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=43.938666666666656) [I'll choose to go with. The next step is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=45.7015) [to figure out which language I want to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=48.3615) [write my Cloud Function in. For this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=50.805333333333344) [particular example, I'm going to use my](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=52.76114285714286) [arrow keys and choose TypeScript.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=55.138999999999996) [TypeScript is an open-source programming](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=57.464) [language. It's very similar to JavaScript,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=59.98399999999999) [except that it provides type safety.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=62.376) [JavaScript is an untyped language.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=65.304) [TypeScript allows you to specify static](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=67.818) [types with JavaScript. Since this is going](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=70.429) [to be a very simple TypeScript function,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=72.18133333333334) [I'll turn off the PSLinter. Firebase will](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=74.28457142857143) [generate a number of files that is needed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=78.27971428571428) [for your Cloud Function project structure.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=81.05228571428573) [Firebase now gives you the option to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=83.06666666666666) [install all of the dependencies needed to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=85.87042857142858) [work with Cloud Functions using npm. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=88.1545) [can go with yes. If you want to manage](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=90.273) [dependencies another way, you can simply](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=92.71471428571427) [say no here. I'll just say yes and move](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=94.57242857142855)[ahead, and that completes the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=97.58914285714287) [initialization of this Cloud Function. If](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=99.16000000000003) [you run the ls command here, you'll see](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=101.71614285714286) [that we have one file in a directory under](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=103.555) [the current working directory.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=106.242) [Firebase.json describes the properties for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=107.696) [your current Firebase project. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=111.422) [functions directory is where you'll write](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=113.523) [the code for your Cloud Functions and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=115.331) [specify all of the dependencies that it](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=117.17788888888889) [needs. Let's explore the package structure](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=119.69011111111108) [for our Cloud Functions using the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=122.23257142857145) [interface. Click through to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=124.86516666666665) [spikey\_greetings\_func directory. And here](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=127.23366666666665) [is the firebase.json file that was created](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=128.92825) [when we initialized Cloud Functions for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=131.413) [Firebase. You can see that this file](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=133.9105) [contains a simple script that is run in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=136.483) [the predeploy phase just before a function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=138.8243333333333) [is deployed to the Cloud. Let's continue](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=141.04299999999998) [our exploration by clicking through to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=144.00600000000003) [functions folder. You can see a number of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=146.2466) [files exist here. The node\_modules folder](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=149.027) [is where all of the dependencies for your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=151.30375) [functions declared in the package.json](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=154.15550000000002) [file will be installed. You can see that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=156.35866666666664) [some Firebase and Google Cloud related](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=159.831) [dependencies are already present here. And](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=161.59560000000002) [here is the package.json file that Node](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=164.35714285714283) [uses to manage dependencies. This gives](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=167.652) [you an idea of the npm commands that are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=169.9028888888889) [run to build, serve, and deploy this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=172.45100000000002) [function. And because we are working with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=174.67575) [Cloud Functions from within Firebase, our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=176.6454285714286) [dependencies on the Firebase SDKs have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=178.68742857142857) [already been added in here. And](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=181.12) [tsconfigure is the configuration file used](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=183.70383333333334) [by the TypeScript compiler. Now if you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=186.6456) [were to write your Cloud Function in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=188.826625) [JavaScript, some of these files may not](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=190.71200000000002) [exist, such as the tsconfig. Many of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=193.56925000000004) [other files in this directory structure](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=195.92087499999997) [will remain the same, whether you write in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=197.315) [JavaScript or TypeScript. Index.ts is the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=200.2824285714286) [main file where you'll write your code.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=202.91085714285714) [This is a TypeScript file. For a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=205.89587500000005) [JavaScript function, you'll write your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=208.024) [code in index.js. I'm going to go ahead](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=209.9375) [and delete the existing code here and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=212.71162500000003) [paste in something simple of my own. This](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=214.42900000000006) [is a very simple TypeScript function which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=216.6905555555555) [returns Greetings from Spikeysales! This](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=219.67399999999998) [Cloud Function will be triggered using an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=222.4072) [HTTP trigger, as you can see from the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=225.5051428571428) [functions.https .onRequest. In order to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=227.324) [build my function, I'm going to cd into](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=231.33233333333334) [the functions folder here. We'll build our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=233.529) [function using npm by running npm run](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=236.8031428571429) [build, and once the build is complete,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=238.96224999999998) [we're ready to serve this function. Before](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=241.49875) [we deploy to the Cloud, let's run a local](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=244.62883333333332) [development server to test our Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=247.49628571428568)[Function locally. This can be done using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=249.81459999999998) [the firebase serve command. The --only](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=253.04100000000005) [flag indicates which Firebase service you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=256.21933333333334) [want to serve. We only want to serve Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=259.36359999999996) [Functions here. This command brings up the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=262.171) [local development server. You can copy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=263.8749999999999) [over the localhost URL where your function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=265.63928571428585) [is available, paste it on the browser, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=268.076) [hit Enter, and there is our Greetings from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=271.01462499999997) [Spikeysales! At this point, we're pretty](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=274.3796) [confident that our function will run in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=276.44933333333336) [production as well. So let's deploy it to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=278.65250000000003) [the cloud by calling firebase deploy. Once](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=280.7551111111111) [again, we only want to deploy our Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=282.98414285714284)[Functions, which is why we say --only](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=285.80800000000005) [functions. You can see from the deployment](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=288.99600000000004) [messages here that our predeploy script](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=291.1029999999999) [configured in firebase.json was executed.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=294.40616666666654) [All of the preparatory steps were complete](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=298.042) [and finally our function has been deployed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=300.422) [to Cloud Functions on the GCP, and this is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=303.149) [the URL where we can access our function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=305.03) [in production. Let's hit this URL using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=307.5211999999999) [our browser, and here it is. Our Greetings from Spikeysales!](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=6&mode=live&start=310.199)

[Exploring Cloud Functions on Firebase and the GCP Console](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live)

[Let's take a look at where we can find our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=0.777) [functions, one that's deployed to Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=2.427) [and the Google Cloud. Here we are on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=4.913) [Firebase console. Click on Functions here](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=6.861142857142859) [and you can see that our spikeyGreetings](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=8.2985) [function is now available. You can see](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=10.920428571428571) [here that the user interface clearly](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=13.869749999999998) [points out that this function has an HTTP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=15.432857142857143) [trigger. We had set up our function with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=18.26775) [an HTTP trigger when we had specified it](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=20.899500000000003) [using TypeScript. This function is hosted](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=23.957) [in the us-central1 region and it's running](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=26.502142857142854) [on Node.js 6. This is the default Node](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=29.05328571428571) [environment for Cloud Functions at the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=32.27828571428571) [time of this recording. So, even though we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=33.690999999999995) [had version 8 on our local machines on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=35.406444444444446) [cloud, our function is running on Node.js](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=38.6058) [6. In fact, this is something that you'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=41.47542857142858) [need to watch out for. Ensure that you're](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=43.27912499999999) [testing locally with the same environment](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=45.787) [that is available on the cloud. The Health](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=48.029) [tab will allow us to view monitoring](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=50.837) [details for our functions Let's choose the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=53.2626) [spikeyGreetings function from this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=55.762600000000006) [drop-down. Here you can view invocations](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=57.66033333333333) [per second, latency, and memory](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=60.05214285714287) [information for your Cloud Functions and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=61.988) [outbound networking details. We haven't](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=64.8675) [really used this function much. That's why](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=67.2057142857143) [these graphs are not populated. If you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=69.51714285714287) [want to view logs for your function, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=71.78033333333333) [Logs tab is where you'll go. You can use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=73.59585714285714)[the drop-down here to filter by function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=76.11600000000001) [and view the logs only for specific](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=78.47557142857143) [functions. Let's take a look at](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=81.14142857142858) [spokeyGreetings logs. Any custom log](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=82.68)[messages that you write out within your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=86.05799999999998) [Cloud Function will also be available](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=87.872) [here. The Usage tab will allow you to view](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=89.85585714285715) [invocations and other analytics for your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=93.32728571428574) [function. This is, again, fairly empty and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=95.59433333333334) [uninteresting at this point in time. Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=97.63) [Functions have a great integration with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=100.04699999999998)[Firebase. However, Cloud Functions are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=102.05099999999999) [also available directly on the Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=104.24299999999997) [Cloud Platform without using Firebase. So](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=106.82666666666667) [this Cloud Function that you see here is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=109.66722222222222) [actually deployed on the GCP. If you take](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=112.373) [a look at the detailed usage stats, that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=114.757) [will take you to the GCP web console. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=117.23320000000001) [can see that here we are in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=120.08766666666666) [spikey-firebase project, which is our GCP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=122.309) [project, and here are the monitoring](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=124.521) [graphs for this Cloud Function. And if you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=126.45042857142859)[take a look at the login details, we are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=128.30233333333334) [logged in as Spikey Engineer. This is the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=130.74712499999998) [project for which we have enabled](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=133.25650000000002) [Firebase. You can see here from this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=135.1554285714286) [drop-down that we have exactly one version](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=137.67514285714287) [for this function, that is the live](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=140.1288888888889) [version. By default, we view the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=142.55711111111108) [monitoring graph for invocations. You can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=144.21614285714293) [use the drop-down here and switch to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=145.8101428571429) [execution time, as well as memory usage.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=148.0153333333333) [The Trigger tab for this HTTP trigger](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=150.928) [function shows you the URL where this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=153.867) [Cloud Function is hosted. This is the URL](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=156.261) [that we hit on the browser to view its](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=158.84379999999993) [response. If you take a look at the source](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=160.70049999999998) [code here, that'll give you the source](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=162.3613999999999) [code information for this Cloud Function.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=164.76950000000002) [You'll find a number of different files](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=167.14) [here that were deployed along with this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=168.798) [TypeScript function. Because this is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=170.637) [compile file, the actual source code is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=173.2376666666667) [not available here. The Testing tab here](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=175.757375) [allows you to invoke and test the function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=178.21550000000002) [right here from within your browser. We'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=180.6888571428571) [pass in an empty request to the Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=183.15371428571424) [Function, click on the Test the function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=185.76466666666667) [button, and here we see the result,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=188.01100000000002) [Greetings from Spikeysales! Click on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=189.111) [Google Cloud Platform link here to head](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=192.47385714285713) [over to the main GCP web console](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=194.73633333333336)[dashboard. Under Resources on this page,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=197.3838) [you can see that there are two different](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=199.63366666666667) [resources provisioned within this project,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=201.8008) [Cloud Storage buckets, and the one Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=203.31314285714288) [Function that we deployed. Let's take a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=205.7048) [look at these Cloud Storage buckets. These](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=208.38299999999998) [are the buckets that were created on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=210.6035) [GCP when we enabled Firebase for this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=212.43633333333332) [project. Because we haven't really done](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=215.53966666666662) [much with Firebase yet, these buckets are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=217.54300000000006) [currently empty. The first bucket listed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=220.72057142857136) [here, spikey- firebase.appspot .com is the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=222.72359999999995) [default bucket that Firebase uses when you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=226.05233333333337) [use storage from within Firebase. And the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=229.36471428571426) [second bucket, the staging bucket, is used](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=232.35114285714286) [internally by Firebase. Let's orient](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=234.47820000000002) [ourselves and find where Cloud Functions](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=236.816) [exist on the GCP web console. Click on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=239.04075) [hamburger icon and head over to Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=241.77037499999997) [Functions, and there you see it, our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=243.80925) [spikeyGreetings function. We successfully](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=245.815)[deployed our first Cloud Function from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=248.52033333333333) [Firebase and explored it using the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=251.0983333333333) [Firebase console, as well as the GCP web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=253.02275) [console. Let's go ahead and delete this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=255.30371428571428) [function. For the demos that are coming](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=258.22566666666665) [up, we'll set up Cloud Functions that can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=259.9024285714287) [be triggered by events fired by Firebase Services and Products.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=7&mode=live&start=262.0477500000001)

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We'll be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=7.213375000000001)[integrating with these services across](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=8.806) [many demos. Let's take a quick look at](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=10.350714285714286) [what they are. Cloud Firestore on the GCP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=12.819) [is currently in Beta. It's a NoSQL](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=15.330333333333334) [database where data is stored in the form](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=17.947124999999996) [of documents, and all of these documents](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=21.130333333333333) [are organized in collections. So we have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=23.332) [collections made up of documents and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=26.343499999999995) [documents have field value pairs. As](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=28.7725) [you'll see in the demo, you can access a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=31.62622222222222) [particular field in a document by](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=33.379714285714286)[specifying the path hierarchically. So](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=35.682) [you'll specify the name of the collection,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=37.58614285714286) [the ID of the document, and the name of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=39.30416666666667) [the field. 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The original](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=47.50271428571429) [database that Firebase offered to its app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=50.29433333333333) [developers was the realtime database,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=53.420714285714276) [which is also a NoSQL database. The data](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=55.08642857142857) [model for the realtime database is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=58.77271428571429) [little different. Data is stored in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=60.718999999999994)[JSON format. So it has a natural JSON](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=62.56242857142857) [hierarchy, which is very familiar to most](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=65.84842857142858) [app developers. 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Even though](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=74.03928571428575) [the word realtime is not present in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=76.58414285714285) [name for Cloud Firestore, Cloud Firestore](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=79.41800000000002) [is also a realtime database. So a good](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=81.52571428571429) [question for you to ask right now is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=84.22266666666665) [what's the difference between these](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=85.87914285714285) [databases and how do I choose which one to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=87.032) [use? The realtime database was the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=89.8868) [original Firebase database. This is their](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=92.31483333333334) [main offering that was very popular](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=95.12866666666669) [amongst app developers. Cloud Firestore is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=97.57637499999997) [their new flagship database. The way in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=100.19157142857144) [which data is stored within the realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=102.88466666666666) [database and Cloud Firestore is different.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=104.92757142857143) [The realtime database stores data as one](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=107.805) [large JSON tree, whereas Cloud Firestore](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=110.313) [has documents organized in collections and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=113.482) [documents have field value pairs for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=116.193) [attributes. The realtime database is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=118.69242857142858) [optimize for very simple data that is easy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=120.72671428571427) [to store. Whereas Cloud Firestore works](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=123.47857142857141) [better with complex hierarchical data. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=125.70666666666665) [realtime database has limited](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=128.5366) [functionality for sorting and filtering,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=130.047) [whereas Firestore has richer sorting and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=132.167) [filtering functionality. With the realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=134.565) [database, queries are deep by default.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=137.765) [With Cloud Firestore, every individual](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=140.52) [field of a document is index by default,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=142.90228571428568) [which means lookups are very fast. 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The performance of Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=158.25342857142851) [Firestore only depends on the size of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=160.31466666666662) [result that you query from it. Writes to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=162.64566666666664) [the realtime database are non-atomic in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=165.667) [nature, whereas Cloud Firestore supports](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=168.03566666666669) [atomic writes, as well as transactions.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=170.38039999999998) [The realtime database requires explicit](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=172.874) [sharding of the underlying data to improve](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=175.7) [performance, whereas Cloud Firestore](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=177.668) [supports automatic scaling. The realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=180.158) [database has been around for a long time.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=182.63) [It's currently in general availability and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=185.0557142857143) [integrated with many apps using Firebase.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=187.3216666666667) [Cloud Firestore is currently in Beta. So,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=190.0902) [overall I would say Cloud Firestore offers](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=192.952) [more features and is more powerful. But](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=195.26128571428572) [it's also a more complex database. So if](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=197.78685714285712) [you're starting off a new app and you need](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=200.296) [the powerful features that Cloud Firestore](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=202.41611111111104) [offers, that's the database that you'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=204.6222) [use. If the data that you want to store is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=206.54883333333336) [fairly simple and you want something that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=208.885) [is proven and robust, you'll go with the realtime database.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=8&mode=live&start=210.581)

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This](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=10&mode=live&start=187.30625) [time it's Jane123, and her complaint is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=10&mode=live&start=189.7052857142857) [Delayed Delivery. 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When we enable Firebase for a GCP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=20.39155555555555) [project, we set up a default bucket, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=23.758625000000006) [that's what is the storage that is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=26.346555555555558)[typically used when you integrate Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=28.63275000000001) [with your applications. 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The default rules for storage](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=37.901) [allow all authenticated users to read and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=40.4245) [write to this bucket. Once again, storage](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=43.541000000000004) [within Firebase refers to the default](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=46.51800000000001) [bucket created on Cloud Storage. 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I'm not going to walk](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=100.1245) [through all of those steps once again.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=101.75077777777777) [Make sure that you choose the right](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=103.51) [project that you're working in and make](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=105.1235) [sure that you choose JavaScript as your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=106.8165) [implementation language. I'll directly get](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=109.63) [to writing the code for this Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=111.736875) [Function in the index.js file. 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So we say](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=146.85616666666667) [functions.firestore .document .onCreate.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=152.08550000000002) [You can think of this Cloud Function as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=154.585) [listening to the products\_info collection](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=156.925) [and prodid in curly braces here is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=160.311) [wildcard representing any document within](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=162.553) [the products\_info collection. 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The onWrite trigger](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=179.04733333333328) [encompasses onCreate, onUpdate, as well as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=182.47979999999995) [onDelete. The snap input argument to this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=185.6594) [Cloud Function represents a snapshot of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=187.85842857142862) [the new document that is to be created in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=11&mode=live&start=190.15300000000005) [Firestore. 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This is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=87.09600000000003) [the Cloud Storage path. This is the path](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=90.38133333333334) [that we copied over from the storage page.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=93.40088888888886) [Click on Save, and this will create a new](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=95.89249999999998) [document in the products\_info collection,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=98.68366666666667) [which means our Cloud Function ought to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=100.5082) [have been triggered. Let's go take a look.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=102.8542857142857) [Go to the GCP web console. Click through](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=105.01) [to createProductLabels and you can see one](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=107.35759999999999) [invocation here. The function has been](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=110.39066666666666) [executed. Let's see if it updated our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=112.73360000000002) [Firestore document. And yes, it did. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=114.67299999999997) [can see that the image labels field has](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=116.72744444444442) [been generated. Google's pretrained](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=119.91500000000002) [machine learning models for image](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=122.16460000000001) [recognition have worked well. They've](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=124.64699999999999) [correctly tagged this image as a dog, a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=126.22042857142857) [retriever, and so on. This is pretty](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=129.48733333333334) [exciting. SpikeySales engineers can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=132.27950000000004) [automatically tag all of their product](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=134.47979999999998) [images using this Cloud Function. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=136.83871428571433) [try this once again with our second dog](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=139.0325714285714) [image. 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Head back to Firestore and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=148.08533333333338) [create a new document which contains a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=150.37124999999995)[path to this image. This is prod02. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=152.6165) [img\_path is the storage URL that we just](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=155.28585714285717) [copied over from the last screen, and the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=158.13125000000002) [prod\_name is Labrador. 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And there you see it, the labels](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=165.5253333333333) [have been generated thanks to our Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=167.82322222222217)[Function. With this, we've successfully](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=170.44733333333335) [built an end-to-end real world use case](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=172.51233333333332) [using Cloud Functions, Firestore, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=175.2131428571429) [Storage in Firebase. And with this demo,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=177.673) [we come to the very end of this module on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=180.38520000000003) [integrating your Firebase applications](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=183.35614285714286) [with Cloud Functions. We started off with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=184.91925) [a quick overview of the Firebase app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=187.72522222222221) [development platform on the GCP, which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=189.9613333333333) [aims to get mobile and web app developers](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=191.4104444444444) [up and running very quickly. Firebase is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=193.78266666666667) [distinct platform, though many of its](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=197.4432) [products and services overlap with what](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=199.7222857142857) [GCP has to offer. Over and above the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=202.13342857142854) [services that you'd expect from any cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=204.75914285714285) [computing platform, Firebase also offers](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=207.16333333333333) [additional services geared towards app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=209.51579999999998) [developers. Authentication, web hosting,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=211.90574999999995) [storage, real-time databases, crash](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=214.40800000000002) [analysis, performance reports, everything](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=216.7785) [that you would need to build and grow your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=218.5486) [app. In this module, we saw how we could](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=221.89662499999994) [integrate and work with Cloud Functions](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=224.14) [from our Firebase web applications. We](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=226.067) [deployed and configured our Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=228.43783333333334) [Functions using the Firebase command-line](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=229.767) [interface. We saw how easy it was to use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=232.79199999999994) [the Firebase SDK from within Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=235.74419999999992) [Functions to integrate with Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=237.55233333333337) [Services, such as the Cloud Firestore,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=240.08525) [NoSQL database, and Storage. We also saw](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=242.009) [how we could trigger Cloud Functions from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=245.61149999999998) [Firebase services to respond to external](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=247.854) [events. We implemented a hands-on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=250.03799999999998) [end-to-end example of how we could use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=252.3685714285714) [Cloud Functions to annotate our product](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=255.11885714285714) [catalog images and store these annotations](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=257.848) [in Firestore. In the next module, we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=261.366) [work with Firebase Hosting to host our web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=263.85585714285713) [applications. We'll also see how we can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=266.32899999999995) [set up anonymous authentication for our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=268.4706666666667) [web apps and also authenticate using the Google Auth provider.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=339c903c-3d2c-4992-9f14-a36e763072f7&clip=12&mode=live&start=270.63557142857144)

[Using Firebase Hosting to Deploy Web Applications](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live)

[Module Overview](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live)

[Hi, and welcome to this module on Using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=0) [Firebase Hosting to Deploy Web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=2.7914285714285714) [Applications. You've built your web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=6.298571428571427) [application, and you've integrated with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=7.856000000000002) [many of Firebase's cool services. Where do](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=9.09) [you host this application where it's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=12.28) [secure, scalable, and reliable? That's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=13.09) [where Firebase Hosting comes in, a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=16.541666666666668) [production-grade hosting service on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=19.5) [Firebase platform. Firebase Hosting makes](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=22) [hosting and deployment very](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=23.817500000000003) [straightforward. With a single command,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=25.575000000000003) [you can get your app up and running.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=27.380000000000003) [Whether it's a plain vanilla static](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=30) [application or an application that is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=31.739999999999995) [fully fledged for which you require](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=34.15142857142858) [authentication methods, Firebase Hosting](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=36.346666666666664) [has a solution for you. Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=37.60857142857143) [Authentication provides an end-to-end](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=39.733333333333334) [identity solution. It supports email and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=42.03) [password accounts, phone authentication,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=44.37333333333333) [Google, Twitter, Facebook, GitHub login,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=46.242000000000004) [and a whole bunch more. You can also have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=48.61285714285714) [your users sign in anonymously first.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=51.654) [Firebase supports anonymous authentication](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=54.03) [as well, and once the user is ready to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=56.02333333333334) [sign up, your anonymous sign in can be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=58.60666666666667) [upgraded with an auth provider of your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=61.614285714285714) [choice. In this module, we'll see how we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=63.779999999999994) [can have users sign in anonymously to our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=65.60222222222218) [application. We'll also implement an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=68.60285714285713) [example of using Google authentication providers with OAuth for sign-in.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=0&mode=live&start=70.73857142857142)

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[You've built your web application, and you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=0.418) [want to quickly host it somewhere with all](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=2.9607272727272727) [of the security and bells and whistles](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=5.331636363636365) [that you need. That's when you'd use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=6.794666666666668) [Firebase Hosting, a production-grade web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=8.711333333333334) [content hosting service for developers.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=10.863000000000003) [Firebase Hosting is meant to be simple and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=13.398)[secure. With a single command, you can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=16.038) [deploy static websites, as well as more](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=18.341333333333342) [complex web apps. Firebase has SSL with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=20.487999999999996) [zero configuration. Your content is always](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=23.391333333333332) [delivered securely when you use Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=26.394666666666666) [Hosting. Firebase Hosting is meant for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=28.996000000000006) [static, as well as dynamic content. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=31.047999999999995) [might have a simple website with just CSS](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=33.513) [and HTML files. That will work well with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=35.858000000000004) [Firebase Hosting as well. Or you might](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=38.466888888888874) [have microservices or more complex web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=40.584) [applications built using Node.js. You can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=42.90299999999999) [use Firebase Hosting then as well. Content](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=45.155499999999996) [that you deploy to Firebase Hosting is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=47.658) [cached on SSDs at content delivery network](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=49.96228571428572) [edges around the world. You get the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=53.75) [advantage of delivering content to your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=56.263999999999996) [users, no matter where they're located,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=58.07599999999999) [extremely fast. Firebase Hosting also](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=60.51371428571427) [makes version control easy. You can deploy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=62.64514285714286) [new versions of your application with a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=64.868) [single command. You can also roll back](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=66.72133333333332) [with one click. With Firebase Hosting, you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=69.25050000000002) [don't have to roll out your own version management and rollback systems.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=1&mode=live&start=71.27022222222223)

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[In this demo, we'll get hands-on with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=0.377) [Firebase Hosting. We'll see how easy it is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=2.7025555555555556) [to deploy a static website to Firebase.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=5.307) [I'm going to set up the HTML page and all](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=8.337) [of the assets from our website in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=10.132) [spikey\_puppies\_app folder. Cd into this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=13.337) [folder, and let's authenticate ourselves](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=15.663666666666666) [to Firebase before we used the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=17.874777777777783) [command-line interface. I'm already logged](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=20.574499999999993) [in as spikey.engineer @ loonycorn.com, so](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=22.452) [we are good to go. When we worked with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=24.503666666666668) [Cloud Functions, we ran the firebase init](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=26.72033333333333) [functions command before we wrote our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=29.508428571428563) [Functions code. If you want to work with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=31.703666666666663) [Firebase Hosting, you can initialize](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=34.59699999999999) [hosting alone by calling firebase init](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=36.519) [hosting. Running just firebase init will](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=38.97099999999999) [bring up a screen that will list all of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=41.05922222222222) [the services that you can initialize from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=44.48271428571428) [the command line. From this, I'm going to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=46.57949999999999) [use the spacebar to select Hosting. I want](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=49.17336363636364) [to initialize hosting in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=52.25477777777778)[spikey-firebase project. We'll continue to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=54.44922222222223) [work with the same project that we worked](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=55.92700000000001) [in earlier. The next step is to indicate](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=58.58449999999999) [which folder you want to use to hold your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=60.86199999999998) [hosting assets. I'll go ahead and choose](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=63.586999999999996) [the default public folder here. For this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=66.84700000000002) [demo, we'll set up a very simple single](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=69.64033333333334) [page application. We just have the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=71.67366666666668) [index.html file. With this, Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=75.00366666666665) [initialization for hosting is now](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=77.81200000000001) [complete. Let's run the ls command and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=79.17900000000002) [take a look at what's in the current](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=81.14900000000002) [directory. There is the firebase.json](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=83.14899999999999) [file, which contains the properties of our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=84.98100000000002) [project, and we have the public folder,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=87.92414285714284) [which will hold the files that we want](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=89.96154545454543) [hosted. Let's take a look at the default](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=92.11699999999999) [firebase.json file that was created for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=94.7125555555556) [web hosting. The public key indicates](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=97.33033333333331)[which directory contents have to be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=100.03842857142858) [deployed. We want to deploy the contents](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=102.81450000000001) [of our public folder, so that's the value](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=105.10699999999999) [as well. The ignore key specifies which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=107.02033333333331) [files can be ignored during deployment.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=109.78985714285714) [Because we indicated that this was a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=112.387) [single page web application, all of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=115.16842857142856) [URLs will be rewritten to index.html. This](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=117.67033333333335) [will also help prevent broken links in our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=120.77499999999999) [app. Let's cd into the public folder and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=123.95899999999996) [run the ls command and see what its](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=126.62518181818182)[contents are. You can see that an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=128.77063636363638) [index.html file has been created for our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=130.7641428571429) [use. If you cat this file, you'll be able](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=133.00533333333328) [to see that it has some test HTML](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=134.96900000000005)[contents. Let's test out Firebase Hosting](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=138.7884285714286) [by running a local deployment server using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=141.357) [firebase serve. You can see that our local](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=144.4836666666666) [server is running on localhost:5000.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=147.04842857142864) [Select this URL, and let's paste it into a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=149.377) [browser window. And here is the default](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=152.666090909091) [static web page that Firebase Hosting](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=155.22200000000004) [provided us. If you click on this link](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=157.54099999999997) [here, it will simply open up the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=159.2484285714285) [Hosting documentation on the real site. On](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=161.96950000000004) [our localhost serving the static HTML](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=164.88825) [file, if you go to the location of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=167.83575000000005) [init.js file, you'll be able to see the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=170.74299999999994) [parameters used to initialize our Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=173.0955714285715) [SDK. Let's kill this local deployment](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=176.662) [server from our terminal window, and let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=179.00033333333337) [edit the index.html file to add in our own](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=181.34033333333335) [static website. You can choose any HTML](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=185.46271428571427) [file here. I have one with a lot of puppy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=187.75985714285716) [pictures. We'll use the firebase deploy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=190.9947777777777) [command to deploy to web hosting. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=192.9853333333334) [--only flag now says hosting, and that's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=194.85866666666666) [the service we'll deploy. Our app will be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=198.37699999999998) [available at project ID .firebaseapp .com,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=202.39299999999997) [which is spikey- firebase.firebaseapp](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=2&mode=live&start=205.387) [.com. 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When you use Firebase, you have a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=54.8098888888889) [variety of authentication options. You can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=57.54957142857142)[authenticate users using their email](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=59.9885) [addresses and passwords, or you can use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=61.85725000000001) [federated identity providers such as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=64.27766666666668) [Google, Facebook, Twitter, and GitHub. 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This might be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=98.25100000000002) [the email address and password of the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=100.36009090909091) [or the OAuth token from identity providers](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=103.211) [such as Google, Facebook, Twitter, or](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=105.281) [GitHub. Once these credentials are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=107.84385714285713)[available to you within the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=109.41385714285717) [application, you'll pass these credentials](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=111.771) [to the Firebase SDK. The Firebase backend](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=113.78599999999999) [will then take care of verifying these](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=116.39224999999999) [credentials and returning a response to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=118.88655555555555) [you. If you're using an auth provider such](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=120.91322222222219) [as Google or Facebook, you can then use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=122.693) [these credentials to access user profile](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=125.56766666666667) [information that you might want to display in your app.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=3&mode=live&start=127.81299999999999)

[Integrating with Firebase Storage to Host Static Assets](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live)

[In this demo, we'll continue working with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=0.274) [the static web app that we had built and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=2.774909090909091) [hosted on Firebase in the last clip. We'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=5.8915000000000015) [make a few changes to make this hosted app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=8.49775) [a little more interesting. Instead of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=10.564) [hardcoding the dog images in this app,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=11.946222222222223) [we'll set up a little script that will](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=14.264) [reference the images that we've stored in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=16.467636363636366) [our Cloud Storage. This will allow us to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=18.979714285714284) [see how we can use Firebase storage to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=21.239000000000008) [hold our static assets, such as image](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=22.87)[files. Start off in the Firebase web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=25.794) [console, and click on the Storage link in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=28.805428571428575) [the left navigation pane. That will take](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=31.126727272727283) [you to Firebase storage, the default](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=33.09685714285714) [bucket on Cloud Storage that Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=34.944) [works with. We already have two dog images](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=37.744) [in here. Let's go ahead and load two more.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=40.756499999999996) [Click on the Upload file button. I'm going](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=44.214) [to choose dog3 and dog4 from my local](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=45.836857142857134) [machine and store them here. If you've](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=48.419) [worked with Cloud Storage directly, you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=50.86257142857143) [know that you have to create buckets and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=52.649) [deal with individual buckets in Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=55.58025) [Storage. When you work with storage from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=57.83774999999999) [Firebase, you're only working with the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=59.988285714285695) [default bucket. Let's see this difference](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=62.40542857142858) [in action. Head over to the GCP web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=64.614) [console, go to Storage, and select](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=66.99114285714283)[Browser. We saw earlier that when we setup](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=70.55733333333333) [our Firebase project two buckets were](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=73.36300000000001) [created in Cloud Storage. Spikey-](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=75.55685714285715) [firebase.appspot .com is the default](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=77.662) [storage in Firebase, and you can see all](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=79.78649999999999) [four dog images are available as objects](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=83.13275) [here. When working with storage from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=85.83000000000003) [Firebase though, all you have to worry](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=88.3525714285714) [about is storage, not individual buckets.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=90.47899999999997) [Let's head over to our index.html file](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=93.264) [that is open in our favorite code editor.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=96.244) [We are now ready to set up the imports and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=100.204) [the script references to integrate](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=101.53685714285714) [Firebase with our static HTML site. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=103.00114285714287) [first reference should be the import for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=105.70257142857143) [the Firebase SDK to build a Firebase app.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=108.55066666666667) [This is always required when using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=111.244) [Firebase and should be the first import.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=112.98400000000004) [If you want to use Firebase storage from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=115.274) [within your application, you'll need to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=117.5115) [add an additional reference to Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=119.12828571428571) [storage as well. Observe that for the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=121.466) [simple application we are using JavaScript](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=124.544) [directly, no Node.js involved. Before you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=126.74900000000001) [can use Firebase in your JavaScript](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=128.95400000000004) [application, you need to set up a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=130.9340000000001)[customized code snippet that is specific](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=132.60399999999998) [to your app. This custom snippet contains](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=134.769) [initialization information to configure](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=138.89066666666668) [the Firebase JavaScript SDK to use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=140.90066666666667) [authentication, Cloud Storage, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=143.46599999999998) [real-time data store, and Cloud Firestore.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=145.66114285714283) [To use a particular feature, you need to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=148.284) [include a reference to that particular](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=150.61275) [SDK. In this case, we are only going to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=152.88524999999998) [use a Firebase app. That is the required](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=155.2306666666667) [admin SDK and Firebase storage. Your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=158.00066666666663) [custom web snippet can be found in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=160.66542857142858) [Firebase web console. Go to Project](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=164.042) [Overview on the left nav pane, and click](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=165.91066666666666) [on Add application. Once you've included](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=168.48000000000002) [the custom snippet, simply call](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=171.26399999999995) [firebase.initializeApp with this config.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=173.90733333333333) [Simply calling firebase.storage () .ref](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=177.214) [will give us access to the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=179.4473333333333) [storage, which we can then use to access](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=181.91733333333337) [individual files within it. Once we have a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=184.59733333333332) [reference to this storageRef variable, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=188.56177777777776) [individual files are present as children](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=190.56900000000002) [of the storage reference. Invoke the child](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=192.836) [function on storageRef, and pass in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=196.21900000000002) [name of the file that we want to access.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=198.15092307692314)[GetDownloadURL will give us a reference to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=200.214) [the public URL for this image. Remember,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=203.52114285714288) [all files in storage are public. That's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=205.6682857142857) [how we had configured it. Once we have the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=208.554) [complete URL path for the dog1 image on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=211.41399999999996) [Firebase storage, we access the HTML](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=215.09828571428577) [element with the ID image1. We set its](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=218.01066666666662)[source tag to this complete URL path. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=221.43499999999997) [image that will now be displayed on our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=224.36542857142857) [static HTML site will be the dog image](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=225.85114285714286) [that is hosted on storage. Set up the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=228.79025000000001) [exact same code for each of the four](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=232.27900000000002) [images that is present in storage and the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=234.93233333333345) [four images that we are going to reference](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=237.5817777777778)[within this page. So we have references to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=239.59733333333335) [images for dog2, 3, and 4. Make sure that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=242.06490909090903) [the file names are specified exactly as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=244.964) [they occur in Firebase storage. That](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=247.0882857142857) [completes a little JavaScript snippet](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=249.76233333333334) [where we integrated with Firebase storage.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=252.204) [Let's go ahead and make the changes to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=254.234) [HTML. Here is the image reference that was](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=256.9879999999999) [hardcoded to a pexels.com path. Pexels is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=259.4025714285714) [a great site. All of the images on this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=262.64399999999995) [site are completely free and free to use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=265.0440000000001) [for commercial purposes as well. Instead](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=267.5795555555556) [of hardcoding the image path, I'm simply](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=269.604) [going to set up an image element with the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=271.59400000000005) [ID image1. The little JavaScript code that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=275.08828571428563) [we wrote up top will automatically](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=277.2440000000001) [populate the source attribute for this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=278.7765) [image. Let's do the exact same thing for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=281.7915) [image2, image3, and image4 as well. So we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=284.9102499999998) [have four image elements, and each of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=288.264) [these have their IDs, and their source](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=291.0968571428572) [attributes will be populated using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=292.99899999999997) [JavaScript. We made the changes to our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=295.66999999999996) [HTML page. We are now ready to deploy this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=297.759) [updated version of this web app. Call](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=300.604)[firebase deploy, and we want to deploy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=303.4039999999998) [only to Firebase Hosting. Once the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=305.9095555555555) [deployment is successfully completed,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=308.25733333333335) [let's access the URL for our website.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=310.224) [Let's go to spikey- firebase.firebaseapp](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=312.254) [.com, and here is our updated site where](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=314.77066666666667) [all of the images are referenced from](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=317.78127272727284) [Firebase storage. We can confirm this by](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=320.44999999999993) [using Chrome developer tools to inspect](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=322.9351111111112) [the HTML for this site. Right-click, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=324.8382857142857) [choose the Inspect option from this menu.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=327.16066666666666)[You can see that our HTML element for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=330.264) [image1 has been updated. It now has a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=332.658) [source reference to our dog image stored](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=335.4111428571428) [in Firebase storage. We've successfully](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=338.5454285714285) [integrated our application with Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=340.9073333333333) [storage and used storage to host our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=342.757) [static images. The cool thing about having](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=346.2779999999999) [our static assets located on storage is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=349.204) [that we can update these assets provided](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=350.694) [the name of the file remains the same.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=353.43844444444443) [Head over to Storage on your Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=355.234) [console, and here is the dog1.jpg file.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=357.859) [Now for some reason, let's say you update](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=360.284) [an image that you want displayed on your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=362.6840000000001) [site. This can happen pretty often. All](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=364.96400000000017) [you need to do is to change the actual](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=367.4994545454545) [image. Keep the image name the same. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=369.9785454545452) [go ahead and delete this dog1.jpg image.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=371.76775) [Click on the Delete button, confirm](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=375.224) [deletion, and once this is deleted, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=376.9982857142856) [image is no longer available on your site,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=378.764) [but we can upload a new file with the same](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=381.264) [name, dog1.jpg. This is a completely](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=385.45566666666684) [different image. We are only preserving](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=388.23400000000004) [the name as stored in Firebase storage.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=389.9306666666667) [The name is what we use to reference this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=392.264) [image file from within our JavaScript](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=394.7430909090907) [code. By hosting the static assets of our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=397.62199999999996) [web application in Firebase storage, we've](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=399.7873333333333) [managed to update our website without](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=402.589) [doing a fresh deployment. This is a big](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=404.658) [deal. Head over to our site, and here is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=407.05) [our site updated with the brand-new golden](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=408.87) [retriever image. You did not have to touch](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=412.0811428571428) [the code at all. No fresh deployment was](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=413.8579999999999) [needed. All you did was update the static assets on Firebase storage.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=4&mode=live&start=415.87800000000004)

[Enabling Anonymous Authentication](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live)

[In this demo, we'll see how we can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=0.532) [configure authentication for the web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=2.9319999999999995) [application that we set up earlier. When](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=4.538666666666667) [you use the Firebase SDK, you can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=6.8886666666666665) [authenticate your app users using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=9.549499999999998) [passwords, phone numbers, and popular](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=11.993249999999996) [federated identity providers like Google,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=14.236285714285714) [Facebook, and Twitter. A feature that is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=16.728) [really useful though is to have our users](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=19.097714285714286) [sign in anonymously before they actually](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=21.420750000000005) [sign up for our application. And anonymous](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=23.652000000000005) [sign-in to our app is what we'll configure](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=26.07342857142857) [in this demo. Start off in the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=28.511999999999997) [web console, and click on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=30.950571428571422) [Authentication link off to the left](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=32.862)[navigation pane. This will take you to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=34.88533333333332) [page where you can set up the sign-in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=36.42771428571429) [method for your web app. This will take](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=39.47116666666667) [you to a page that will show you all of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=42.09290909090908) [the methods and authentication providers](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=44.41342857142857) [that Firebase supports. You can have your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=46.542) [users sign up to your application using an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=49.68771428571428)[email and password. They can use their](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=52.37574999999999) [phone numbers if they want to do so. They](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=54.16866666666667) [can use Google, Facebook, Twitter, GitHub.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=56.10628571428572) [And finally, at the bottom here, you can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=59.492) [see that anonymous sign-in to your apps is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=61.26977777777777) [also supported. This is what we want to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=63.88755555555558) [configure in this demo. Click on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=66.34799999999996)[Anonymous, and use the slider to enable](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=68.20088888888888) [anonymous sign-in to your application.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=70.542) [Click on the Save button, and this option](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=72.532) [will have been enabled on Firebase. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=75.82533333333333) [can see on this Authentication page that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=78.64628571428572) [there are just two domains that are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=79.902) [currently authorized. That is localhost,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=82.532) [which is the default, and the spikey-](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=84.39485714285716) [firebase.firebaseapp .com. Once again, a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=87.35399999999998) [default domain that Firebase offers. If](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=90.02700000000002) [you have your own custom domains where](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=92.78485714285713)[your Firebase-enabled applications live,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=94.886) [you can add that in here. There are other](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=96.502) [options you can configure here as well.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=100.10299999999998) [You can ensure that a user sets up just](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=101.552) [one account per email address even if they](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=104.04700000000001) [are with different authentication](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=107.66574999999999) [providers. This means if you've already](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=109.19074999999997) [signed up using your Gmail account with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=111.00057142857146) [the Google provider, you can't use the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=114.02824999999997) [same Gmail account to sign up using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=116.63342857142855) [Facebook. You can also manage quotas to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=119.12199999999999) [limit the number of new email password or](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=121.22914285714283) [anonymous sign-ups from the same IP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=124.03450000000001) [address. The default quota for this is 100](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=126.98950000000005) [sign-ups per hour. Firebase also offers](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=129.62400000000005) [templates allowing you to customize the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=131.67825) [emails that your users receive when they](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=133.96800000000002) [sign up. Here is the template for email](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=136.74000000000012)[address verification. There are templates](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=139.75200000000004) [for password reset, address change, SMTP](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=141.48700000000002) [settings, and so on. You can edit this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=143.37342857142858) [template here to include your own custom](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=145.86199999999997) [message, maybe your logo, and any other](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=148.2036666666667) [information that you want to provide. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=151.06199999999993) [can configure the message that is sent by](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=152.95600000000002)[verification using text messages as well.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=156.10800000000006) [The SMS verification looks like this by](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=158.522) [default, but can be changed. You will, of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=161.12075000000002) [course, be billed for phone verification](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=163.04199999999997) [of your accounts. There is a free tier](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=164.562) [though. 10K phone verification instances](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=167.23866666666672) [are free in the US, Canada, and India and 10K free across all other countries.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=5&mode=live&start=169.168)

[Configure Anonymous Sign-in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live)

[All right, we are now ready to head back](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=0.642) [to our text editor here and configure a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=2.412) [file which will allow our users to log in.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=4.6495) [I'm going to write the JavaScript required](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=7.612) [to sign in my users anonymously in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=9.602) [login.html file. I'll first set up some](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=13.594000000000005) [basic HTML on this page. The title of this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=15.612000000000004) [page is simply Log In, and I need a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=17.529777777777777) [reference to the Firebase SDK. This should](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=20.412000000000006) [always be the first import in your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=23.18914285714286) [Firebase integrated app. That's something](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=25.416)[you need to remember. We want to use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=26.951999999999998) [authentication for anonymous sign-in,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=29.167000000000005) [which is why we need to include firebase-](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=30.662) [auth.js as well. Here is a snippet of code](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=34.24745454545453) [written within JavaScript script tags,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=36.622) [which allows our site users to sign in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=39.602) [using temporary anonymous accounts. If the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=42.612) [user then chooses to sign up with your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=46.15563636363637) [application, temporary app data can be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=48.330181818181835) [carried over to the signed-up user. As its](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=50.08057142857141) [name suggests, the toggleSignIn method](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=54.77771428571428) [will toggle the sign-in status of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=57.592) [current user. If a user is currently](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=60.734222222222215) [signed in, this method will sign the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=63.08914285714284) [out. If firebase.auth () .currentUser is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=67.04057142857147) [valid user, we'll call firebase.auth ()](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=69.88949999999997) [.signOut to sign him or her out. Here is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=72.45927272727273) [snippet of code that allows you to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=76.28533333333334) [anonymously sign in a current user. Now,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=78.04057142857143) [we are explicitly going to set up a button](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=80.91499999999999) [that will allow anonymous sign-in. In your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=83.642) [real-world application though, you can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=86.45400000000001)[trigger this bit of code whenever the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=88.26599999999999) [uses an app feature that requires sign-in.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=90.642) [Let's say on anonymous user who's on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=93.652) [spikeysales.com website adds an item to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=95.632) [her cart. We might anonymously sign her in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=97.91949999999997) [so that her cart details are preserved](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=101.602) [when she chooses to sign up with our app.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=102.672) [The actual code for anonymous sign-in is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=106.602) [very straightforward. You simply call](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=108.952) [firebase.auth () .signInAnonymously, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=111.63200000000002) [catch any errors that might occur. For](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=114.05914285714286) [example, if you had forgotten to enable](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=116.87325) [anonymous sign-in from the Firebase web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=118.632) [console, you might get an error which says](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=121.22057142857142)[operation not allowed. In our prototype](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=123.74500000000003) [here, we won't really do anything with the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=125.41449999999998) [error. We'll simply log it out to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=127.36950000000004) [console. Once the user has successfully](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=130.26324999999997) [signed in anonymously, we can go ahead and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=133.11075000000002) [disabled the sign in button. We set](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=136.107) [disabled equal to true. Let's now write](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=138.2986666666667) [the code for the function initApp. This is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=140.65533333333332) [the function that will be called when the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=143.157) [login.html page is first loaded, and what](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=145.502) [this function does is to set up a listener](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=148.36836363636365) [on the AuthStateChanged event. This is the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=151.592) [listener that will be triggered if the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=155.38325) [signInAnonymously method that we saw](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=157.66199999999998) [earlier completes successfully. This is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=160.652) [the place where we'll add in the code to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=163.036) [handle anonymous sign-ins. The input](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=165.397) [parameter to this listener is the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=168.238) [object for the user who just signed in. If](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=170.35899999999998) [the user is an anonymous user, isAnonymous](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=172.95057142857144) [will be set to true. We access information](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=175.17033333333333) [as to whether this user is indeed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=178.14700000000002) [anonymous and access the user ID](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=180.258) [associated with the user as well and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=182.4656363636364) [display account details to an HTML element](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=185.141) [on screen. Since the user has signed in,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=188.63399999999996) [the textContent of the sign-in element](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=191.622) [will be set to Sign out. If the auth state](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=194.592) [has changed because the user had signed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=197.33200000000005) [out, there will be no valid user object,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=199.29866666666663) [and we update the HTML accordingly. We](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=201.612) [change the textContent of the sign in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=204.9442222222222) [button to be Sign in rather than Sign out,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=207.2697777777777) [and we enable it by setting disabled is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=209.612) [equal to false. This initApp function is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=211.83745454545456) [also where we add in the listener to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=213.99200000000005) [sign in button. We add in an event](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=216.80771428571433) [listener which listens to click events on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=219.30422222222225) [this button, and when the button is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=221.244) [clicked, the toggleSignIn function is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=223.28866666666661) [invoked. Make sure you wire it up so that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=226.01199999999997) [when the login.html page is loaded, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=228.65200000000002) [initApp function is called. This is what](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=232.02200000000002) [sets up our listeners for the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=234.53999999999996)[AuthStateChanged and the click event](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=236.37599999999986) [listener for the sign in button. I'm going](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=237.87800000000001) [to paste in some simple HTML for this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=240.21563636363638) [page. The most interesting element here is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=242.3901818181819) [our Sign in button with the ID sign-in.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=244.98755555555553) [Just below this button is an element that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=247.672) [we'll use to display the user details of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=250.056) [the signed-in user. There is one last bit](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=253.30533333333335) [of wiring up that we need to do before we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=255.7781538461539) [are ready to deploy this application. In](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=258.112) [the index.html page, add a link to log in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=260.3595)[as guest. This is the link that will take](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=264.88199999999995) [us to the login.html page that will allow](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=267.4095) [us to sign in anonymously. Let's switch](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=269.797) [over to our terminal window in order to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=272.23771428571433) [deploy this new update to our application.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=274.561) [We have the index.html page and the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=276.682) [login.html page. Call Firebase deploy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=280.5242222222222) [--only hosting, and once the deployment](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=283.41600000000005) [has completed successfully, let's head](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=285.7834285714286) [over to our browser and test out login.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=287.25600000000003) [Hit Refresh so that you get the new](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=289.632)[version of this page, and there you see](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=292.3319999999998) [it, the button to log in as guest. Click](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=294.99199999999996) [on this button, and this will take you to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=297.8595) [the sign-in page. This is the sign in to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=300.60199999999986) [Spikeysales page. You can see that we have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=303.1245000000001) [no current user, which is why user details](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=304.9786666666666) [is null. Click on the SIGN IN button here,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=307.7591428571429) [and you'll be signed in anonymously. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=309.672) [can see that your Firebase sign-in status](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=312.98018181818185) [is Signed in. Firebase has generated an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=315.5574545454546) [anonymous user object associated with you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=318.36485714285703) [at this IP address. If you head over to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=321.3434285714286) [the Authentication page on the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=325.0620000000001) [console, under Users, you'll find the one](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=326.46600000000007) [anonymous user who has signed in. Under](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=329.622) [the Providers column, you can see the icon](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=333.1395) [telling you that this is an anonymous](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=335.36628571428577) [user. This is the page on Firebase that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=338.1303333333334)[you can use to manage your user accounts.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=340.04299999999984) [If you click on the three-dot menu, you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=342.592) [can disable this account, delete this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=344.98575) [account, and perform a bunch of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=347.22824999999983) [administrative actions. You can also add](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=349.0877142857144) [users manually to your application using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=351.6486666666667) [this console. Let's head back to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=354.60533333333336) [browser tab that holds our website. We](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=356.96472727272715) [have the SIGN OUT button here. Click on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=358.88836363636364) [SIGN OUT, and you will be signed out. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=361.09927272727253) [button switches to a SIGN IN button, and there are no user details to be displayed.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=6&mode=live&start=363.88325)

[Configure Google Authenticated Sign-in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live)

[Well, it's great to have anonymous users](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=0.857) [signed in to your website or application,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=2.428111111111111) [but what's even better is to have these](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=4.897) [users actually sign up, and that's what](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=8.372) [we'll see in this demo. We'll see how we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=10.633249999999997) [can integrate authentication into our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=13.064142857142855) [Firebase app using the Google auth](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=14.801444444444444) [provider. We start off in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=17.45477777777777) [Authentication page on the Firebase web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=19.997000000000007) [console. We currently just have anonymous](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=21.677000000000003) [authentication enabled. Click on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=24.044142857142862) [Sign-in method, which will list out all of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=26.088999999999995) [the methods that you can use, and let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=27.89700000000001) [choose Google. Click through to enable](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=30.377000000000002) [Google authentication in the dialog that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=33.21033333333333) [pops up. Use the slider, and move it to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=35.21033333333333) [Enable. This requires you to update a few](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=38.51824999999998) [Firebase project-level settings here. We](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=40.877) [want the public-facing name of our project](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=44.245000000000005) [to be Spikey Puppies, and the project](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=46.698428571428565) [support email will be our email, the email](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=48.540333333333336) [that we used to log into this Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=50.64518181818182) [project. If you scroll down here, you'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=53.51790909090909) [find an option that is interesting. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=55.172714285714285) [say you have another application running](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=57.177) [with signed-up users. You can whitelist](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=58.917) [client IDs from external projects using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=61.917) [the option here. Ours is a brand-new](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=65.15700000000001) [application. We have no other client IDs.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=67.693) [Click on the drop-down here which says Web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=70.837) [SDK configuration. This will display a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=73.30899999999998) [client ID and a secret. 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Hit Save to enable Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=82.50700000000002) [authentication. We'll write all of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=86.24866666666668) [code required to sign up a user using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=88.17116666666666) [Google authentication in the signup.html](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=90.49842857142858) [file. 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I'm](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=97.917) [going to paste in all of the HTML and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=101.14922222222224) [JavaScript code here and walk you through](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=103.40700000000001) [the interesting bits that will show you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=105.98985714285716)[how you can configure Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=107.847) [authentication for your site. Remember the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=109.25699999999999) [web client ID that we copied over from the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=111.55922222222223) [Firebase web console? You need to specify](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=114.669) [that as a part of the meta tag here under](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=117.08161538461539) [your head element. The title of this page](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=120.3495) [simply says Log In or Sign Up. You can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=123.137) [change it to what you want it to be. Next](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=125.42518181818181) [up is where we reference the libraries](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=128.2160909090909) [that we need. In order to integrate Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=130.7997272727273) [sign-in into our current website, we need](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=134.3486666666667) [a reference to apis.google .com /js/](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=136.85700000000003) [platform.js. This gives you a very easy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=141.6095) [way to integrate Google auth into your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=144.5627142857143) [app. This is the script that will take](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=147.4441428571428) [care of bringing up the Google sign-in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=149.417) [page. And once sign-in has completed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=151.5236666666667) [successfully, you can handle the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=154.357) [post-processing flow using a callback](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=156.19700000000003) [configured in your code. All of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=158.15271428571424) [nitty-gritty of the actual sign-in page is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=160.85700000000003) [abstracted away from you. We need access](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=163.243) [to the Firebase Admin SDK, as well as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=165.9845) [Firebase Auth. Note that we reference](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=168.49500000000003) [these files locally. When you're hosting](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=170.61842857142855) [your website using Firebase Hosting, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=173.02325) [Firebase SDKs are available to you as a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=175.337) [part of the hosting framework at this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=178.47099999999998) [path. I'm going to scroll down and take a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=180.6199999999999) [look at the HTML in this page. We'll look](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=183.45200000000003) [at the actual code in just a bit. This](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=185.291) [page will have a message which says Sign](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=187.15575) [in to Spikeysales with your Google account](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=189.3381111111111) [below. And here, with the class g-signin2,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=192.42588888888878) [is the standard Google button. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=196.867) [platform.js file that will take care of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=200.22075) [signing into Google for us is wired up to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=202.837)[this Google button, and once the sign-in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=206.0184285714286) [is successful, the onSignIn method that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=208.2236666666667) [we'll write will be invoked. If you have a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=211.08700000000005) [valid signed-in user, we'll display user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=215.00271428571432) [details using this element. That takes](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=217.18414285714286) [care of the HTML bit. Let's take a look at](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=219.76128571428572) [the JavaScript code that we need to write](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=223.09075) [in order to handle Google sign-in. When](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=225.2097272727273) [this page is first loaded on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=227.237) [window.onload, we'll call the initApp](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=229.51699999999997) [function that is defined on top here. When](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=231.3588181818182) [this page is initialized, we'll add an](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=234.301) [observer to the authStateChanged event.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=237.73074999999997) [This function will be invoked when the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=240.887) [authentication status for the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=242.6345)[changes. If the user has signed in, there](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=244.52824999999999) [will be a valid user object. You can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=247.27557142857142) [extract the relevant bits of information](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=250.3595) [that might be interesting from the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=251.897) [object, such as the display name of the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=253.647) [user, the email address, photo URL,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=255.6295) [whether the user is anonymous or not, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=257.917) [so on. You might want to display this in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=260.301) [some way or use this to change the look](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=262.4603333333335) [and feel of your page. In our demo here,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=265.2403333333332) [we'll keep things very simple. We'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=268.23144444444443) [simply display all of the user details as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=270.38075) [a string in the account-details HTML](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=274.3445) [element. We'll enable the SIGN OUT button,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=277.38949999999994) [and we'll change the message to show the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=279.877) [user has signed in. If there is no valid](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=282.15700000000004) [user object present, that means the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=285.0995) [AuthStateChanged indicate that the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=287.675) [signed out. We'll update our HTML elements](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=290.09299999999996) [accordingly. And finally, when we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=294.2220000000001) [initialize this page, we'll add a click](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=296.0298571428571) [event listener, which will invoke the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=298.8536666666667)[handleSignOut function when the user wants](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=301.1970000000001) [to sign out. Since the handleSignOut](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=303.04271428571434) [function is very straightforward, we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=305.177) [take a look at that first. We'll access](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=307.1398571428572) [the Google auth provider by calling](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=309.35450000000003) [gapi.auth2 .getAuthInstance. And once we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=310.907) [have a reference to the Google auth](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=315.67699999999996) [provider, we simply call the signOut](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=317.56699999999984) [function on this provider. Once we are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=319.52588888888886) [signed out from googleAuth, make sure that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=321.7427142857142) [you call firebase.auth () .signOut as](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=324.39099999999996)[well. Let's now take a look at a helper](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=327.3789999999999) [option that we'll use in a short while.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=329.6370000000002) [This is the isUserEqual. The input](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=331.907) [parameters to this function is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=334.4612857142857)[googleUser and a firebaseUser. The Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=336.491) [auth provider will give us access to a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=339.4412857142857) [googleUser object. The Firebase auth](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=342.089) [provider has a corresponding firebaseUser](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=343.88699999999994) [object. This is the function code to check](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=346.857) [whether they represent the same user. You](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=349.847) [don't need to know the exact details of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=352.0242727272727) [this code because that is very specific to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=353.52245454545454) [Google authentication and Firebase users,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=355.867) [but you should have a big-picture](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=358.857) [understanding of what this method does.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=360.57985714285707) [We're finally ready to tackle the code in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=362.887) [the main method onSignIn. This is the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=365.293) [method that is called when we've signed in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=367.7698571428571)[successfully using Google. The input](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=371.17557142857146) [argument that is passed in when this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=373.285) [method is invoked is a reference to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=374.7130000000001) [googleUser. The first thing that we'll do](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=378.35574999999983) [here is to add an observer or a listener](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=380.35699999999997) [to the AuthStateChanged event. After we've](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=383.5727142857143) [logged in using the Google auth provider,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=386.51588888888887) [Firebase will also log in this user, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=388.857) [that's when this listener will be called.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=391.2945) [The unsubscribe variable here will get a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=393.867) [reference to this listener, and we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=396.1684285714285)[unsubscribe from AuthStateChanged after](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=398.66499999999996) [we've executed this bit of code once. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=400.282) [first thing that we'll do within this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=403.07533333333333) [listener is to called unsubscribe so that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=404.7684285714285) [the listener is invoked exactly once.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=407.65450000000004) [Within this function, we have access to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=409.927) [the googleUser object, as well as the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=412.4732499999999) [firebaseUser object. We'll now check to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=415.13199999999995) [see whether they're exactly the same. If](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=417.1050000000001) [they're not exactly the same, it means](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=419.2436666666666) [that we haven't yet signed in with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=421.287)[Firebase, and that's what we need to fix.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=422.72199999999987) [In order to sign in with Firebase, we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=424.887) [need to access the auth2 token from the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=428.1312857142857) [Google auth provider. Call firebase.auth](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=431.085) [.GoogleAuthProvider .credential, and get](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=434.397) [the ID token for Google. Now that we have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=437.0555714285714) [this ID token, we can use this to sign in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=441.0141428571429) [to Firebase. Call Firebase.auth ()](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=444.10699999999997) [.signInAndRetrieveDataWithCredential, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=447.8745) [pass in these Google auth provider](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=449.41825) [credentials. You can specify a function](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=452.42575000000016) [here that you'll use to handle errors in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=454.55199999999996) [the sign-in. You can check to see whether](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=457.9725555555554) [an account for this user already exists](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=459.65950000000015) [with a different auth provider. There is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=462.38199999999995) [specific error code for that, as you see](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=465.24575000000004) [highlighted here on screen. Firebase has](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=467.1784285714285) [the ability to check whether the email](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=469.5136666666666)[used for both of the auth providers, let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=471.75300000000004) [say Google and Facebook, are exactly the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=474.20366666666666) [same. Here we assume that the user hasn't](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=476.5603333333332) [already signed in anonymously. If you want](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=479.24899999999997) [to update anonymous accounts to permanent](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=481.7312857142858) [accounts, you'll simply change the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=484.19699999999995) [function that you call to log into](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=485.703)[Firebase. You'll use firebase.auth ()](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=488.4627142857142) [.currentUser](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=492.91366666666664) [.linkAndRetrievDataWithCredential. And](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=493.9203333333333) [this is all the code you need to write to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=495.17075) [handle Google sign-in. We'll make one](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=497.89199999999994) [change to the index.html file where we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=500.03575) [reference signup.html when the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=503.397) [chooses to sign up with Google. With this,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=505.87033333333335)[we've completed all of the code changes](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=508.3058888888889) [that we need to make to integrate with the Google auth provider.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=7&mode=live&start=509.877)

[Testing Google Authentication Integration](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live)

[With our code complete, we are now ready](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=0.33) [to deploy our application to Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=2.0988888888888884) [Hosting. Let's switch back to our terminal](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=4.82) [window where we'll use Firebase tools to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=7.017142857142858) [deploy our website. We currently have the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=9.28) [index.html, login.html, and signup.html](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=12.290000000000003) [pages. Deployment, of course, is very](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=15.286666666666669)[straightforward. Call firebase deploy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=18.605) [--only hosting, and once deployment is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=19.82) [complete, let's head over and test out our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=21.887999999999998) [website. Hit Refresh to get the latest](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=24.931250000000002) [version, and there we have it, the Signup](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=27.049999999999994) [with Google button. Click on this button,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=29.44700000000001) [and you'll be taken to our signup.html](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=31.81000000000001) [page, which presents you with a nicely](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=34.8225) [themed Google button that you can use to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=37.34000000000002) [sign in. Click on this Google button, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=39.72571428571428) [you'll be redirected to the Google sign-in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=41.784444444444446) [page. I'm going to choose Spikey Engineer](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=44.82555555555556) [to sign in here, and there it is. I'm now](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=46.48999999999999) [signed in using Google auth. And here are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=50.03727272727272) [my user object details displayed here on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=53.18428571428571) [screen. If you head over to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=55.84250000000001) [Authentication page on the Firebase web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=57.8475) [console, you can see that Spikey Engineer](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=59.910000000000004) [is now a Google authenticated user on our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=61.837500000000006) [app. Under Providers, you can see the G](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=65.7357142857143) [indicating that he was authenticated using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=68.66444444444441) [a Google auth provider. 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You're no longer authenticated](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=77.77428571428571) [as Spikey Engineer on the site. And with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=80.32) [this demo, we come to the very end of this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=83.59142857142858) [module on Firebase Hosting. 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This is the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=91.77499999999999) [production-grade hosting service that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=94.31) [comes along with the Firebase app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=95.66666666666667)[development platform on Google. We also](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=97.71) [implemented an example where we uploaded](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=100.09) [our static assets to Cloud Storage buckets](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=102.31) [and reference them from our application.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=106.27) [The Firebase Hosting platform supports a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=108.31) [number of different methods of](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=110.53750000000002) [authenticating to your web app. Email and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=112.40875)[password authentication, phone numbers,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=115.29666666666667) [and a variety of auth providers, Google,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=117.31) [Twitter, Facebook, all of these are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=119.96) [supported by Firebase. But firstly, to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=122.42857142857142) [make it easier for users to sign up to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=124.05874999999999) [your app, we saw how we could implement](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=126.40181818181819) [anonymous authentication. Anonymous](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=128.94) [authentication makes it easier for you to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=130.70600000000002) [preserve the state of your application for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=133.30666666666667) [your user once he chooses to sign up. In](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=135.59666666666666) [addition to anonymous authentication, we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=138.696) [also saw how we could integrate our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=140.60999999999999) [Firebase web application with the Google](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=142.8475) [auth provider using OAuth. We saw how easy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=146.0242857142857) [this was because the entire OAuth flow is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=149.3718181818182) [handled at Google's end. We only need to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=151.51000000000002) [access the access token and log in as a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=153.81500000000003) [Firebase user. In the next module, we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=156.7371428571429)[work with the Firebase Cloud Messaging](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=158.56375) [service, which allows us to send](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=160.8175) [notifications and direct messages to our apps.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=357601ca-2ac6-4d09-96c9-46915a2b7345&clip=8&mode=live&start=162.97833333333338)

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[Hi, and welcome to this module on Using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=0) [Firebase Cloud Messaging, or FCM, as it's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=3) [called for short, with your Web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=6.171999999999999) [Applications. Firebase Cloud Messaging is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=8.733999999999996) [Google's cross-platform messaging](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=10.923399999999999) [solution, which means you can integrate](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=12.625333333333334) [with FCM, whether you're on your mobile](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=15.07742857142857) [app or on your web app. Firebase Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=16.954124999999994) [Messaging supports two kinds of messages,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=19.4955) [notification messages, as well as data](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=22.069) [messages. Notifications are what you'd use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=24.29757142857142) [to drive user engagement or inform users.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=26.989714285714285) [Maybe an email has been received or a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=30.007) [package has been delivered. Or you can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=31.953) [have Cloud Messaging send data messages](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=34.95612500000001) [which are custom messages which are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=36.74166666666667) [completely handled by our application](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=39.033) [code. In this module, we'll see how we can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=41.14800000000001) [integrate with Firebase Cloud Messaging to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=43.768) [display notification messages to our app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=45.772) [users. Notification messages are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=48.26285714285712) [automatically handled by the Firebase SDK,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=50.57775000000001) [as long as you set things up right. In app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=52.869333333333316) [notifications, whether on the web or on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=55.976) [mobile, are an important user retention](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=58.02028571428571) [and engagement tool. You can use this to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=60.404) [inform users of promotional activities,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=62.789) [package delivers, and thus keep them interested in what you have to offer.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=0&mode=live&start=66.465)

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With Firebase Cloud Messaging,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=14.290599999999998) [you have a cross-platform messaging](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=16.515571428571427) [solution available to you that allows you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=19.0035) [to reliably deliver messages to your users](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=21.745250000000006) [at no cost. FCM, or Firebase Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=24.57271428571428) [Messaging, supports two kinds of messages;](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=27.721999999999998) [notification messages, which can be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=29.916) [thought of displayed messages. These are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=32.263999999999996) [messages that may not require immediate](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=34.523714285714284) [action from a user. We'll simply view](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=36.440999999999995) [these messages. They serve as a user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=38.9626) [engagement mechanism. FCM can also be used](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=42.00828571428571) [to send data messages. These are custom](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=44.439666666666675) [messages and have to be handled explicitly](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=46.6895) [by our application. Notification messages](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=49.391) [on Firebase have a well-defined format,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=51.608333333333334) [and the FCM SDK automatically displays the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=54.52766666666666) [message to end user devices. There's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=58.065999999999995) [nothing you have to do. You simply have to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=59.85525) [integrate with Cloud Messaging and set up](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=62.07814285714287) [your app right. Everything else is taken](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=64.34385714285715) [care of by the platform. The notification](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=66.65655555555557) [message has a standard format with a set](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=68.99466666666666) [of pre-defined keys that are automatically](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=72.07199999999997) [interpreted by the Firebase SDK and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=74.2876) [displayed to the user correctly. Data](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=76.49874999999999) [messages are custom messages, and the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=78.54520000000001) [format of these messages are only known to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=80.5465) [your app. The client application is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=82.77114285714285)[responsible for processing these messages.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=85.13966666666666) [Data messages have only custom key-value](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=87.943) [pairs. Firebase knows nothing about the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=90.80242857142859) [contents of these messages. The onus is on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=93.50066666666666) [your client application to parse and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=96.02837499999997) [process these messages correctly. Here is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=98.30683333333336) [a big picture overview of the various](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=100.77775000000001)[components involved in Firebase Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=103.16159999999999) [Messaging. Messages can be sent to your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=105.71549999999999) [application, which is identified by a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=107.78414285714287) [unique device token by a trusted](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=110.26285714285713) [environment. This can be the notifications](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=112.5652) [console. This is a user interface that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=114.69183333333336) [Google offers or it can be your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=1&mode=live&start=117.29825000000004) [application server. 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Notification](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=18.140428571428572) [messages are automatically handled by the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=20.17325) [Firebase Cloud Messaging SDK that you'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=23.06771428571428) [install on your app. We start off in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=25.442999999999998) [main Firebase web console. 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Now the FCM web interface](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=72.29233333333333) [uses web credentials called Voluntary](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=74.15628571428572) [Application Server Identification or VAPID](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=76.70850000000002)[keys. 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In order](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=129.4935714285715) [to use Firebase Cloud Messaging, you'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=132.28900000000002) [need to create a manifest.json file with a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=134.29285714285714) [gcm\_sender\_id. The value that you see here](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=138.40266666666668) [onscreen is a hard-coded value, which is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=140.54766666666674)[the same across all of the websites that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=143.1115714285714) [use Firebase Cloud Messaging. This is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=146.1914444444444) [fixed value common to all JavaScript FCM](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=148.73975) [clients. So you will have this exact same](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=151.8696666666667) [value in the manifest.json file. The](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=154.86344444444438) [presence of this manifest file with the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=158.1875) [gcm\_sender\_id indicates that Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=160.319) [Cloud Messaging is authorized to send](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=162.8638) [messages to this app. Hit Ctrl+X to save](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=165.2185714285715) [the changes to this file, and let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=168.82049999999998) [continue our setup. We'll create a new](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=171.18387500000006) [file called firebase-messaging- sw.js.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=173.41233333333332) [This is a must-have when you're using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=176.999) [Firebase Cloud Messaging with your web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=179.107) [application. This is required to set up](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=181.22671428571422)[the background notification handler when](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=183.68450000000004) [the browser where you're viewing your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=185.83300000000003) [website is not in focus. The actual](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=188.37537500000002) [contents of this .js file are very simple.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=190.641) [We simply import the scripts related to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=192.86357142857145) [the Firebase admin SDK and Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=195.7797142857143) [Messaging, as well as init.js. Observe](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=197.91766666666666) [that we point to the local paths where](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=200.705875) [these scripts are available when we use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=203.41157142857142) [Firebase Hosting. And from within](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=205.447) [Firebase, we simply invoke and initialize](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=206.877) [Cloud Messaging by calling](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=209.907) [firebase.messaging. Save this file and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=211.975) [we're all done with this particular file.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=213.78800000000004) [We'll create a new JavaScript file called](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=216.033) [main.js where we'll configure our web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=218.398) [application to receive messages from FSM.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=220.825) [We first need to configure our website](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=223.686) [with the web credentials that it needs,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=225.878) [the VAPID keys. Call firebase.messaging](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=227.689) [.usePublicVapidKey and paste in the public](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=232.34933333333333) [key that we had copied over earlier, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=235.11477777777773) [one that starts with BLG. We have used the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=237.30499999999995) [Firebase web console to generate a new key](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=240.43700000000007) [pair, and this is the public key of that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=242.73657142857135) [pair. An instance of your website, which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=245.85100000000003) [is running on your browser, is associated](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=247.84933333333333) [with a device token. This is the device](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=249.87633333333332) [token that is needed in order to send](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=252.9461111111111) [notifications to your browser. This](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=255.57471428571424) [registration token once retrieved can be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=257.74333333333334) [saved in a database somewhere if you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=259.8415) [change only when the web app explicitly](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=261.847) [clears the registration token or when the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=263.872) [user clears browser data. In this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=266.81) [function, saveMessagingDeviceToken, we'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=269.6875) [access the token to see whether it's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=271.53155555555554)[present. You can do this by calling](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=274.23744444444446) [firebase.messaging .getToken and pass in a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=276.889) [lambda function, which gets as its input](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=280.49) [argument the currentToken. Now, this token](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=282.792) [is accessible to us only when we request](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=285.76787499999995) [permission from the user. So if the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=288.5001428571429) [has already given us permission, we will](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=290.9265000000001) [have the currentToken, and I'll simply log](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=293.17100000000005) [it out to the console window. This is just](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=295.692) [for the purposes of our demo. In the real](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=298.288) [site, you won't do something as insecure](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=299.9786666666667) [as this. You'll retrieve the token if it's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=301.70883333333336) [available from a database, or you'll store](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=305.0011428571428) [it in a database if you're getting a new](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=306.59450000000004) [token from your site. In case this device](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=308.97049999999996) [token is not available, this means that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=311.1204999999999) [you need to get permissions from the user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=313.3377499999999) [in order to display notifications on this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=315.78371428571427)[website. So call](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=318.42475) [requestNotificationsPermissions. That's a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=321.11499999999995) [function that we'll write in just a bit.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=322.501) [If the user allows us to send push](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=324.2026) [notifications to our site on the browser,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=327.289) [we'll then be able to access the device](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=329.504) [token. Requesting notification permissions](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=332.2337777777776) [is very straightforward. Simply call](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=334.3265)[firebase.messaging .requestPermission and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=336.728) [if permission is given, you'll call](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=340.936) [saveMessagingDeviceToken. To start this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=343.516) [flow of accessing the token if it's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=346.3910000000001) [available or requesting permissions if](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=348.84899999999993) [it's not, simply call](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=350.56719999999996) [saveMessagingDeviceToken. We are done with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=351.496) [the code required to receive push](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=354.8550000000001)[notifications on our site. Let's switch](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=356.5406666666667) [over to the index.html page. Make sure you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=359.0657142857143) [add in the script reference to include the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=362.2255) [Firebase Messaging SDK here. Add a script](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=365.0385714285714) [reference to the main.js file that we just](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=367.90925000000004) [wrote. That's where we handle getting the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=370.55587499999996) [deviceToken that we'll use to send push](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=372.8084285714286)[notifications. Also link in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=375.83166666666665) [manifest.json file in our app, which](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=377.76149999999996) [contains the hard-coded GCM sender ID.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=380.44766666666663) [This is needed for all Firebase apps which integrate with the Firebase Messaging SDK.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=2&mode=live&start=383.96375)

[Testing Push Notifications](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live)

[Let's head over to the terminal window to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=0.927) [deploy this new version of our app. If you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=3.005) [run ls in the current working directory,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=5.1015) [you can see the two new files here,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=6.70575) [main.js and manifest.json. In addition, we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=9.296000000000001) [also have the firebase-messaging- sw.js,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=12.2525) [which allows us to receive notifications](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=16.27) [even when our browser window is in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=18.583) [background. Login.html, index.html, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=20.86833333333334) [signup.html are the same files that we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=23.759200000000003) [worked with earlier. This change was a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=26.929750000000006) [fairly big one. Let's test this out in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=29.006571428571426) [local development environment first before](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=31.082142857142866) [pushing it out to production. Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=32.68) [serve --only hosting will set up a local](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=34.935428571428574) [development server to server-side on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=38.391333333333336) [localhost:5000. Let's head over to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=39.978833333333334) [localhost:5000. Notice that I'm not using](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=41.763) [an incognito window here. The push](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=45.052) [notifications do not work in the incognito](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=47.643499999999996) [mode. Here is our puppy site, and notice](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=49.56728571428572) [that our script in main.js immediately](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=53.66357142857142) [asks us for permissions to show](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=56.5345) [notifications. You can choose to block](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=59.501500000000014) [these if you want, but we want to give it](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=60.99933333333332) [permissions. Click on Allow here and any](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=63.71085714285716) [push notifications sent from a trusted](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=66.60642857142861) [server can now be received by our browser.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=69.46600000000002) [But for that, we need access to the device](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=72.534)[token for our site on this browser.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=75.332) [Right-click and choose the Inspect option.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=76.53) [We printed out the device token onto our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=79.147) [developer tools console window. Copy over](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=81.992) [the Cloud Messaging Device token. We'll](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=85.07900000000001) [use this in order to send a push](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=87.08777777777777) [notification to our browser. Switch over](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=88.358) [to your terminal window where your](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=91.14442857142858) [localhost is running. I'm going to open up](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=92.84224999999999) [a new terminal scheduled to run a curl](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=95.00249999999998) [command. This is a POST request to send a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=98.12700000000002) [push notification to our site hosted on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=100.34811111111111) [Firebase Hosting. Now, we need to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=103.57399999999996) [authorize ourselves before we can send](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=105.8895714285714) [this push notification. The authorization](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=108.20949999999999) [key that we'll use is the server key that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=110.15249999999999) [we copied over from the Cloud Messaging](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=112.82512500000001) [tab on the Firebase console. Notice that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=114.94828571428572) [this key begins with four As. Here are the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=117.46575000000001) [actual contents of the push notification](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=120.43425000000002) [specified in the JSON format. This is a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=122.06166666666667) [standard format that our Firebase SDK](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=125.533) [understands and interprets. We have the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=128.31199999999998) [notification key and within that we have a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=131.24857142857144) [title and a body. We want this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=133.57399999999998) [notification sent to the site running our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=135.31837500000003) [web browser which is identified by this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=137.72042857142858) [device token. And finally, the actual curl](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=141.378) [request will be made to this Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=144.14485714285715) [Messaging URL. The notification seems to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=147.34142857142862) [have been sent successfully. Let's take a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=149.23500000000004) [look at our browser, and there it is.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=150.99842857142858) [We've successfully sent a push](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=153.49599999999995)[notification to our site running in a local development environment.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=3&mode=live&start=155.2635)

[Save Device Tokens to the Realtime Database](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live)

[Once we get access to a device token for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=0.855) [sending push notifications, ideally we'd](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=3.325) [want to store it in a database somewhere](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=5.004999999999999) [so that other applications can use it.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=7.388833333333333) [Let's see in this demo, we'll see how we](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=10.531571428571429) [can write out the device token to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=13.344666666666667) [Firebase realtime database. We start off](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=16.049500000000002) [in the web console of our Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=18.250666666666664) [project. Click on the Database link off to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=19.793666666666667) [the left where you'll get access to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=22.711374999999997) [Spikey realtime database. We've used Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=25.646) [Firestore so far. Use the drop-down here](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=28.022) [to switch over to the realtime database.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=30.172000000000004) [The realtime database is Firebase's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=33.127) [original NoSQL database, which allows us](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=36.208) [to sync data across applications in real](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=38.810285714285726) [time. Data stored in the realtime database](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=41.68514285714285) [is in the form of a JSON tree. So, every](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=44.40574999999998) [name value pair has a corresponding path.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=47.75442857142857) [You can add name value pairs using the web](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=49.98942857142857) [consol here. This is just to show you that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=53.474999999999994) [it can be done. We'll be adding data to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=55.446454545454564) [this database from our web app. Let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=57.754125) [cancel out of this and head over to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=59.98466666666666) [Rules tab. The rules specify who can read](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=62.861999999999995) [and write from your database. Here read is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=65.51774999999998) [false and write is false, so no one can](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=67.7815) [access our database. Let's switch this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=69.9086) [around so anyone can read and write to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=71.39862499999998) [this realtime database. Click on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=73.922) [Publish button here to update the rules,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=75.78499999999998) [and that's it for configuring the realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=77.61957142857143) [database. We can switch over to our](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=79.92666666666668) [main.js code in order to write to this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=82.77) [database. Here is the code that we already](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=86.01816666666667) [had in there to access the current token.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=87.56155555555556) [I'm simply going to access the realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=90.153) [database by calling firebase.database and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=92.094) [pushing the currentToken under the tokens](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=96.08083333333333) [key. And really, that's the only change](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=99.04742857142857) [you need to make in order to write to the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=101.73788888888889) [realtime database. Our database is](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=104.437) [completely empty the first time around.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=106.10242857142856)[The tokens key will be created for you. In](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=107.81642857142857) [order to be able to use the realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=110.17266666666664) [database, we need to make one change to](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=112.62037500000001) [the index.html file to add in the SDK for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=115.479875) [the database. Here is the terminal window](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=119.49233333333336) [that we'll use to deploy our application.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=121.70450000000002) [You can see all of the files that are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=123.866) [present here. Let's call firebase deploy](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=125.011) [--only hosting. And once our app has been](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=128.422) [deployed, let's head over to our app URL](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=130.681) [in a non-incognito browser window. Our app](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=133.52) [wants us to receive notifications. Go](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=137.28685714285714) [ahead and click on the Allow button here](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=139.27877777777778) [so that the deviceToken will be generated.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=141.277) [Once you've clicked Allow, let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=144.448) [right-click and view Inspect. In addition](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=146.4906) [to logging the deviceToken onto a Chrome](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=148.9946666666667) [developer tools console window, we'll have](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=151.95999999999998)[also saved it to our Firebase realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=154.03037500000002) [database. Our device token is available](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=157.0463333333333) [here under the tokens key. We can now use](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=159.7154285714285) [this device token to make a curl request](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=162.70733333333325) [to send a push notification to our app.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=165.4564) [Authorize this curl request using the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=168.09) [server key as before and specify the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=170.279) [notification body. Here is the device](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=172.577) [token and the URL that we need to hit. And](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=174.935) [once you execute this curl request, let's](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=177.60157142857142) [head over and take a look at our app, and](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=179.384)[there is our push notification. With the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=181.88216666666665) [device token now safely stored in the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=184.66950000000003) [realtime database, you can have other apps](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=187.13657142857141) [to automate the sending of push notifications using the data in there.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=4&mode=live&start=189.92071428571427)

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[And with this demo, we come to the very](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=1.28) [end of this module where we worked with](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=3.1375999999999995) [Firebase Cloud Messaging, the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=4.757) [cross-platform messaging solution that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=6.8538) [makes it very easy for you to reliably](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=9.025) [deliver messages to your users. FCM, or](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=11.672) [Firebase Cloud Messaging, handles two](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=14.303199999999999) [kinds of messages; notification, as well](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=16.1308) [as data messages. We primarily focused on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=18.458) [notification messages in this module. We](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=21.717599999999997) [saw how notification messages can be](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=24.42757142857143) [automatically displayed by the Firebase](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=26.159) [SDK. Notification messages have a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=28.814833333333336) [predefined format, and as long as they're](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=31.322799999999997) [sent by a trusted authority with the right](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=32.96966666666666) [keys and credentials, they're displayed](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=34.86957142857142) [automatically by your app, as long as the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=37.365) [app gives permissions to do so.](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=39.95)[Notification messages are an important](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=41.974) [component of any app, whether it's on the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=44.359) [web or on your mobile devices. These are](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=46.163) [useful to send push notifications for user](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=49.57471428571429) [engagement and marketing purposes. And](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=52.36533333333334) [with this discussion of Firebase Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=54.388285714285715) [Messaging, we come to the very end of this](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=56.43)[course. Now, but before you leave, make](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=58.27500000000001) [sure you delete and clean up after](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=60.73424999999999) [yourselves so that you're not charged for](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=62.79785714285713) [resources that you have provisioned. Make](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=65.27542857142859) [sure you delete all of the Cloud Functions](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=66.55625) [that you deployed, delete any objects that](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=68.3735) [you might have stored in Cloud Storage,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=70.53985714285713)[and delete any applications that you might](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=72.76985714285716) [have deployed to Firebase Hosting. If](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=75.19533333333335) [you're interested in the Google Cloud](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=77.6232) [Platform, and specifically interested in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=79.2016) [the Firebase application development](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=81.59280000000001) [platform, here are some other courses on](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=83.37966666666667) [Pluralsight that you can watch. Leveraging](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=85.76514285714286) [Google Cloud Firestore for Realtime](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=87.17060000000001) [Database Solutions will talk about how you](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=89.47500000000001) [can integrate with Cloud Firestore and the](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=92.881) [realtime database from your apps. Or if](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=95.08157142857144) [you're interested in web development in](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=97.00028571428572) [general and are looking for a](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=98.268) [platform-as-a-service offering on the GCP,](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=99.99) [Leveraging Advanced Features of App Engine](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=102.743) [is a course that might interest you. And](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=105.529) [on this note, it's time for me to say](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=107.64645454545455) [good-bye. I hope you had fun learning. Thank you for listening!](https://app.pluralsight.com/player?course=google-cloud-platform-firebase-architecting-scalable-web-applications&author=janani-ravi&name=6b4cf0c9-7aea-4bc8-9657-25a4b52cc531&clip=5&mode=live&start=109.60354545454544)