

Setup Watson Studio

Scenario

For the deep learning portion of this lab, we will use Watson Studio. Its a more powerful version of Skills Network labs. It will also allow you to share your notebook to be marked. You will need the link from your Jupyter notebook from the previous section.

You will use the Jupyter notebook for your Particular Deep learning Framework. You will complete the notebook and submit it along with several screenshots to be marked by your peers.

The following will be the instructions on how to sign up for an account, load the notebook and share it. If you already have an account Please jump to Task two.

Objectives

After completing this lab, you will be able to:

1. Add a Watson Studio - Lite service
2. Create a project in Watson Studio
3. Add a notebook to a project
4. Perform Project Pre-trained Model
5. Share your results

Exercise 1: Add a Watson Studio - Lite service

Scenario

In this exercise, you will use the IBM Cloud account you configured in the previous module. You will add the Watson Studio - Lite service to your IBM Cloud account.

If you have already added a Watson Studio - Lite service, you can skip Task 1 and proceed with Task 2.

Task 1: Log in to your IBM Cloud account and add the Watson Studio - Lite service

Complete this task only if you have not yet configured Watson Studio - Lite. Otherwise, go to Task 2.

1. Go to the [IBM Cloud](#) page, enter your **ID**, and then click **Continue**.



Log in to IBM Cloud

ID

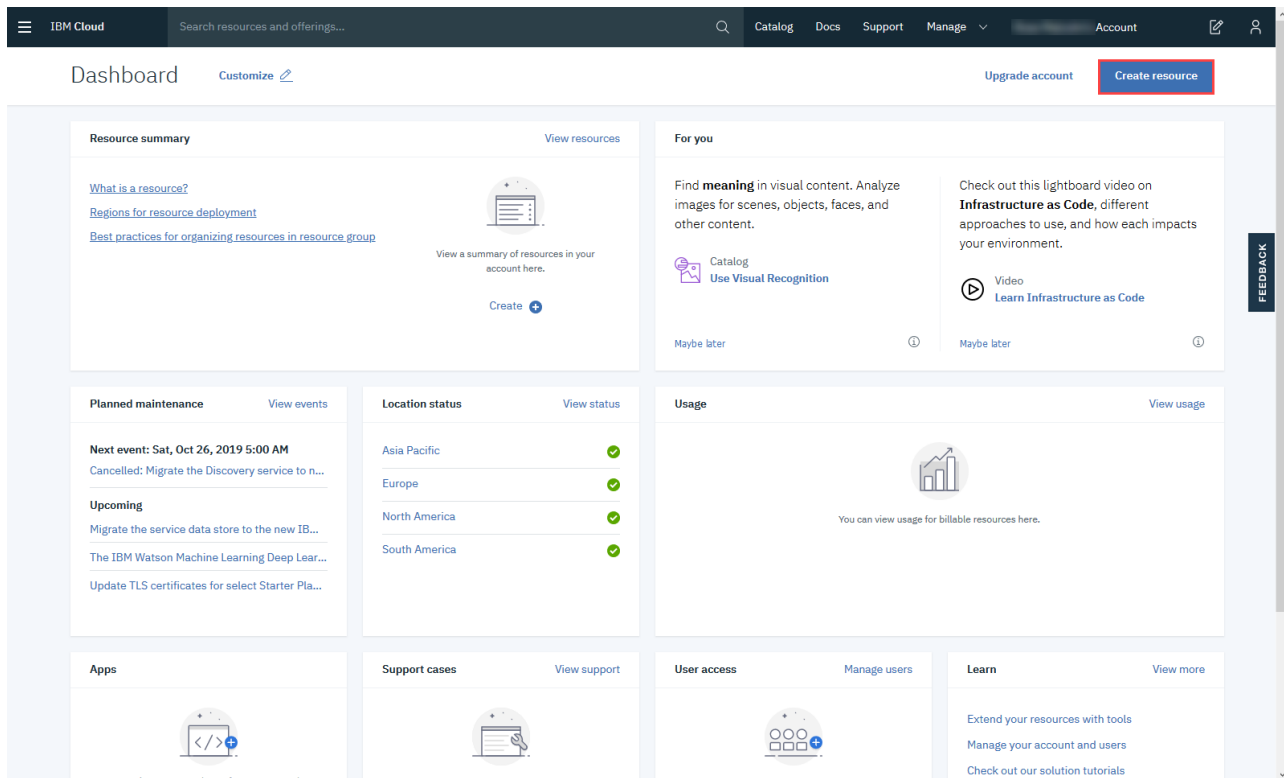
IBMID

☐ Remember me

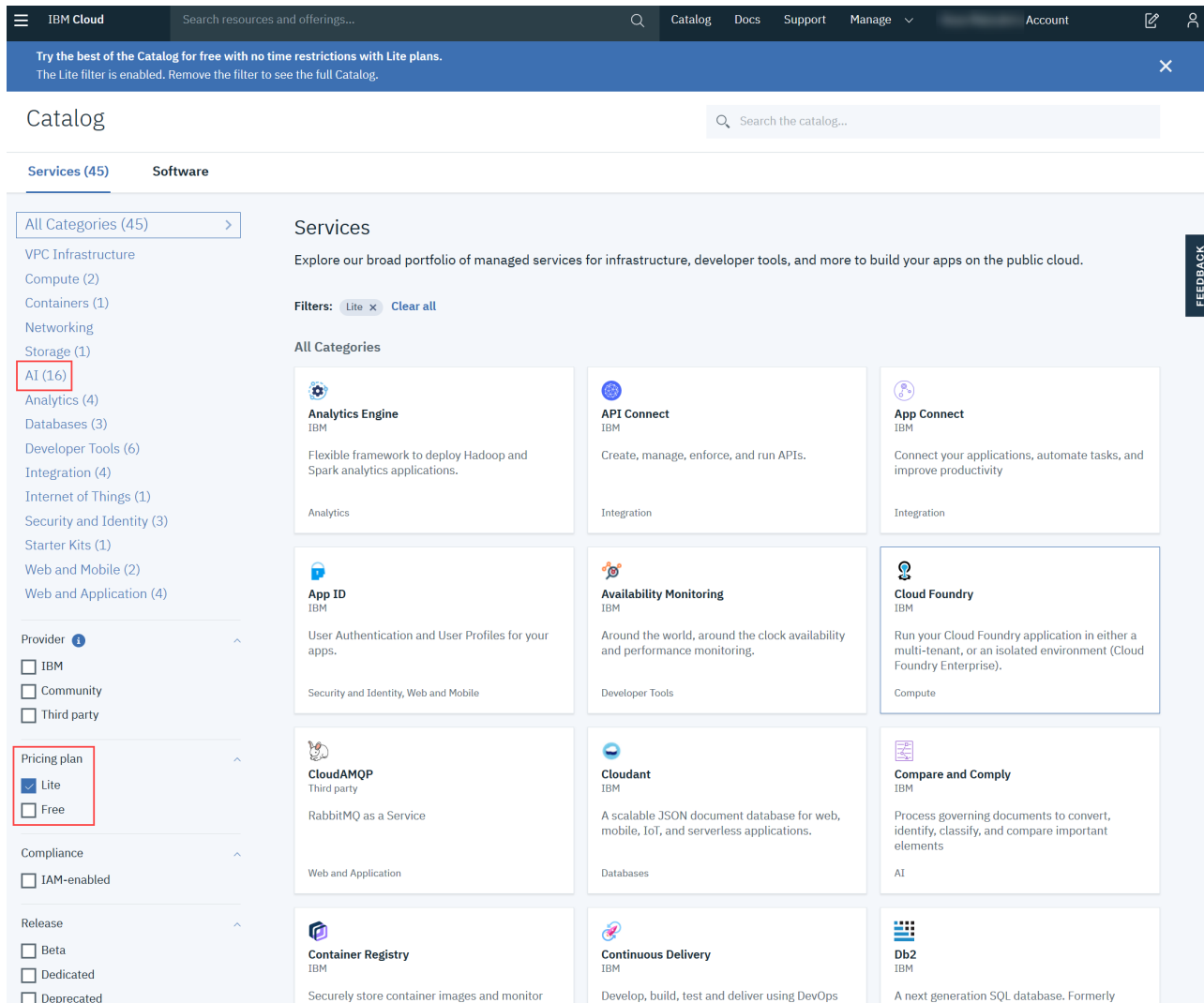
[Forgot ID?](#)
[Forgot password?](#)

[Continue](#)

2. On the Dashboard, click **Create Resource**



3. In the Catalog, click **AI (16)**. Note that the **Lite** plan is selected.



4. In the list of **Services**, click **Watson Studio**.

IBM Cloud Search resources and offerings...

Try the best of the Catalog for free with no time restrictions with Lite plans.
The Lite filter is enabled. Remove the filter to see the full Catalog.

Catalog

Services (45) Software

All Categories (45)

- VPC Infrastructure
- Compute (2)
- Containers (1)
- Networking
- Storage (1)
- AI (16)
- Analytics (4)
- Databases (3)
- Developer Tools (6)
- Integration (4)
- Internet of Things (1)
- Security and Identity (3)
- Starter Kits (1)
- Web and Mobile (2)
- Web and Application (4)

Provider

- ☐ IBM
- ☐ Community
- ☐ Third party

Pricing plan

- ☒ Lite
- ☐ Free

Compliance

- ☐ IAM-enabled

Services

Explore our broad portfolio of managed services for infrastructure, developer tools, and more to build your apps on the public cloud.

Filters: Lite x Clear all

AI

- Watson Assistant**
IBM
Watson Assistant lets you build conversational interfaces into any application, device, or channel.
AI
- Watson Studio**
IBM
Embed AI and machine learning into your business. Create custom models using your own data.
AI
- Compare and Comply**
IBM
Process governing documents to convert, identify, classify, and compare important elements
AI
- Discovery**
IBM
Add a cognitive search and content analytics engine to applications.
AI
- Knowledge Catalog**
IBM
Discover, catalog, and securely share enterprise data.
AI
- Knowledge Studio**
IBM
Teach Watson the language of your domain.
AI
- Language Translator**
IBM
Translate text, documents, and websites from one language to another. Create industry or region-specific translations via the service's...
AI
- Machine Learning**
IBM
IBM Watson Machine Learning - make smarter decisions, solve tough problems, and improve user outcomes.
AI
- Natural Language Understanding**
IBM
Analyze text to extract meta-data from content such as concepts, entities, emotion, relations, sentiment and more.
AI

5. On the Watson Studio page, select the region closest to you, verify that the **Lite** plan is selected, and then click **Create**.

IBM Cloud Search resources and offerings...

Watson Studio

Author: IBM • Date of last update: 07/18/2019

Need Help?
[Contact Support](#)
[View docs](#)

Create About

Select a region

Dallas

Select a pricing plan

Monthly prices shown are for country or region: [United States](#)

PLAN	FEATURES	PRICING
<input checked="" type="checkbox"/> Lite	1 authorized user 50 capacity unit-hours monthly limit 1 free small compute environment with 1 vCPU and 4 GB RAM (does not require capacity unit-hours)	Free
Standard v1	1 authorized user + unlimited viewer collaborators 50 capacity unit-hours included monthly (additional capacity available) Unlimited elastic compute environments Capacity Type: 1 vCPU and 4 GB RAM = 0.5 capacity units required per hour Capacity Type: 2 vCPU and 8 GB RAM = 1 capacity units required per hour Capacity Type: 3 vCPU and 12 GB RAM = 1.5 capacity units required per hour Capacity Type: 4 vCPU and 16 GB RAM = 2 capacity units required per hour Capacity Type: 8 vCPU and 32 GB RAM = 4 capacity units required per hour Capacity Type: 16 vCPU and 64 GB RAM = 8 capacity units required per hour Decision Optimization = (Capacity Type) + 20 capacity units required per hour	\$99.00 USD/Instance \$0.60 USD/Capacity Unit-Hour \$99.00 USD/Authorized User
Enterprise v2	5 authorized users + unlimited viewer collaborators 5,000 capacity unit-hours included monthly (additional capacity available) Unlimited elastic compute environments Capacity Type: 1 vCPU and 4 GB RAM = 0.5 capacity units required per hour	Expand each section to view details

The Lite plan for Watson Studio offers everything you need to become a better data scientist or domain expert in a collaborative environment.
Lite plan services are deleted after 30 days of inactivity.

Summary

Watson Studio Free

Region: Dallas

Plan: Lite

Service name: Watson Studio-0o

Resource group: Default

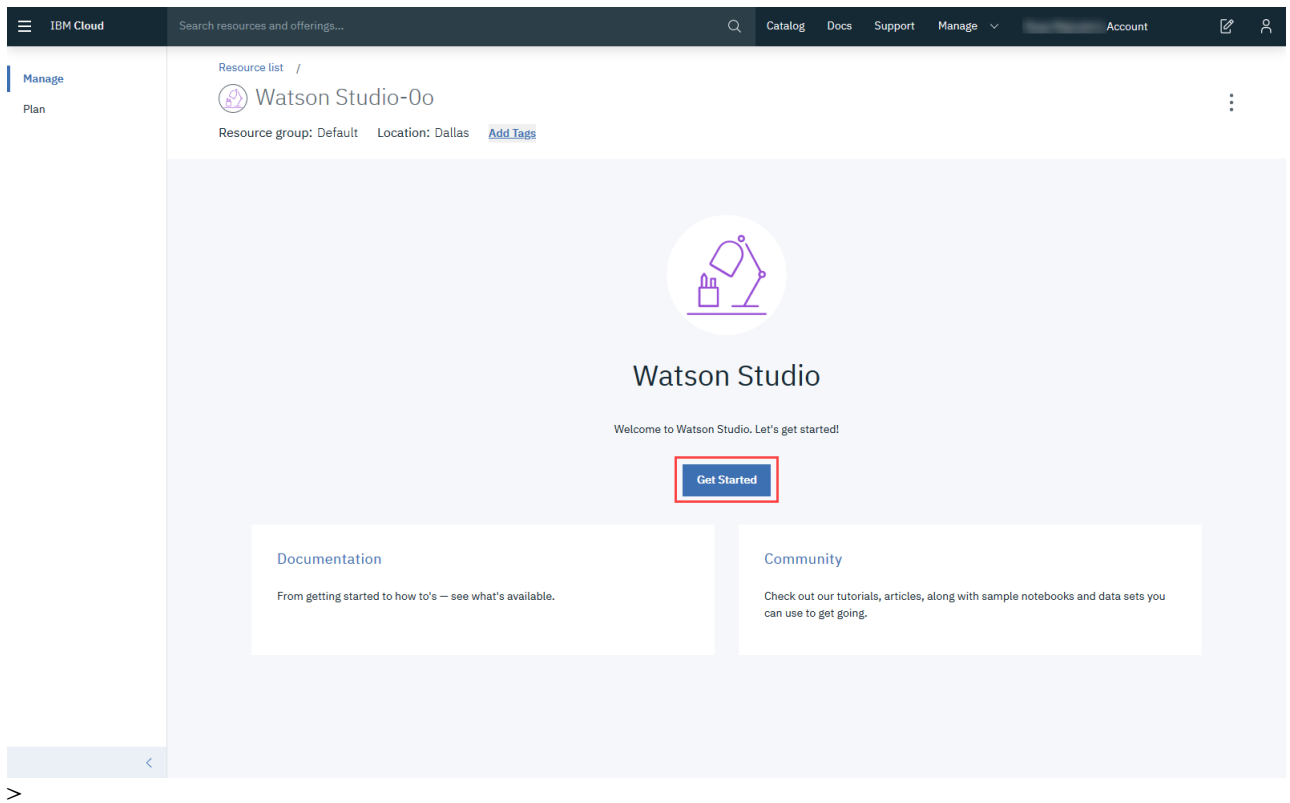
Create

Add to estimate

[View terms](#)

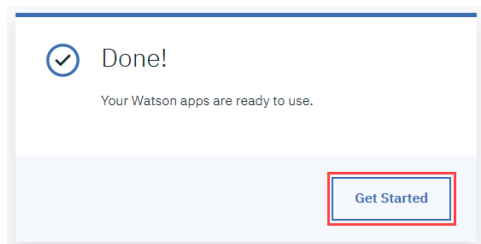
Get Started

6. When the Watson Studio resource is successfully created, you will see the Watson Studio page. Click **Get Started**.



>

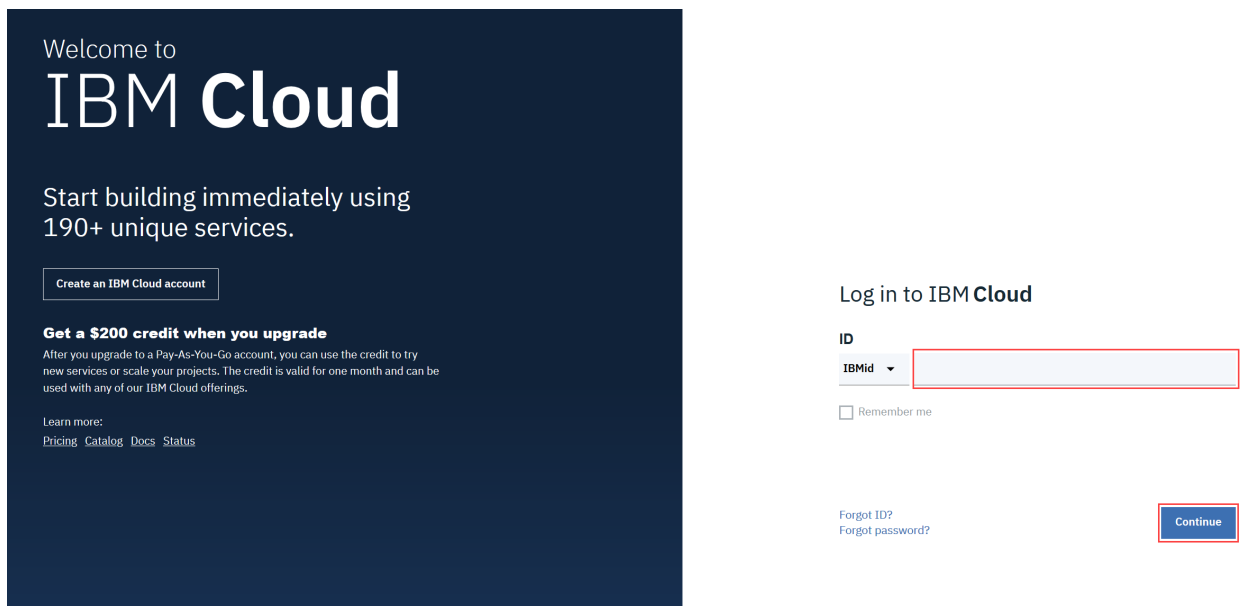
7. You will see this message when Watson Studio is successfully set up for you. Click **Get Started**.



Task 2: Launch Watson Studio

Complete this task if you have an existing Watson Studio - Lite service. Otherwise, go to Task 1.

1. Go to the [IBM Cloud](#) page, enter your **ID**, and then click **Continue**.



2. On the Dashboard, click **Services**.

The screenshot shows the IBM Cloud Dashboard. At the top, there's a navigation bar with 'IBM Cloud', a search bar, and links for Catalog, Docs, Support, and Manage. Below the navigation bar, the 'Dashboard' title is followed by a 'Customize' link. On the right, there are links for 'Upgrade account' and 'Create resource'. The main content area is divided into several sections:

- Resource summary:** A card showing a list of resources. The 'Services' link is highlighted with a red box, and the count '1' is shown next to it. A 'View resources' link is at the top right of this card.
- For you:** A section with two cards. The first card is titled 'Get started with using AI and Cloud Object Storage in 15 minutes.' and includes a 'Tutorial' link 'Get Started with Watson Studio'. The second card is titled 'Analyze and visualize open data sets by using IBM Watson Studio, a Jupyter Notebook, and Apache Spark.' and includes a 'Tutorial' link 'Analyze and visualize open data'.
- Planned maintenance:** A card showing the next event: 'Mon, Oct 28, 2019 3:00 PM' with the description 'Migrate the service data store to the new IBM Cloud d...'. It also lists upcoming updates like 'The IBM Watson Machine Learning Deep Learning ser...' and 'Update TLS certificates for select Starter Plan networks Security and Kernel Update (Disaster Recovery Nodes)'.
- Location status:** A card showing the status of services across different regions: Asia Pacific, Europe, North America, and South America, all marked with green checkmarks.
- Usage:** A card showing a bar chart and the text 'You can view usage for billable resources here.' with a 'View usage' link.
- Apps:** A card with a code icon and the text 'You can view your apps here after you create them. Learn more about how to get started.' with a 'Create an app' link.
- Support cases:** A card with a support icon and the text 'You can view a summary of your support cases here after you submit them. Learn more about how to get support.' with a 'View support' link.
- User access:** A card with a user icon and the text 'Working alone is no fun. With the right permissions, you can see other users when they join this account. Learn more about users and access.' with a 'Manage users' link and an 'Invite users' button.
- Learn:** A card with the text 'Extend your resources with tools', 'Manage your account and users', and 'Check out our solution tutorials'. It lists links for 'IBM Developer', 'Architecture Center', and 'IBM Skills Gateway'.

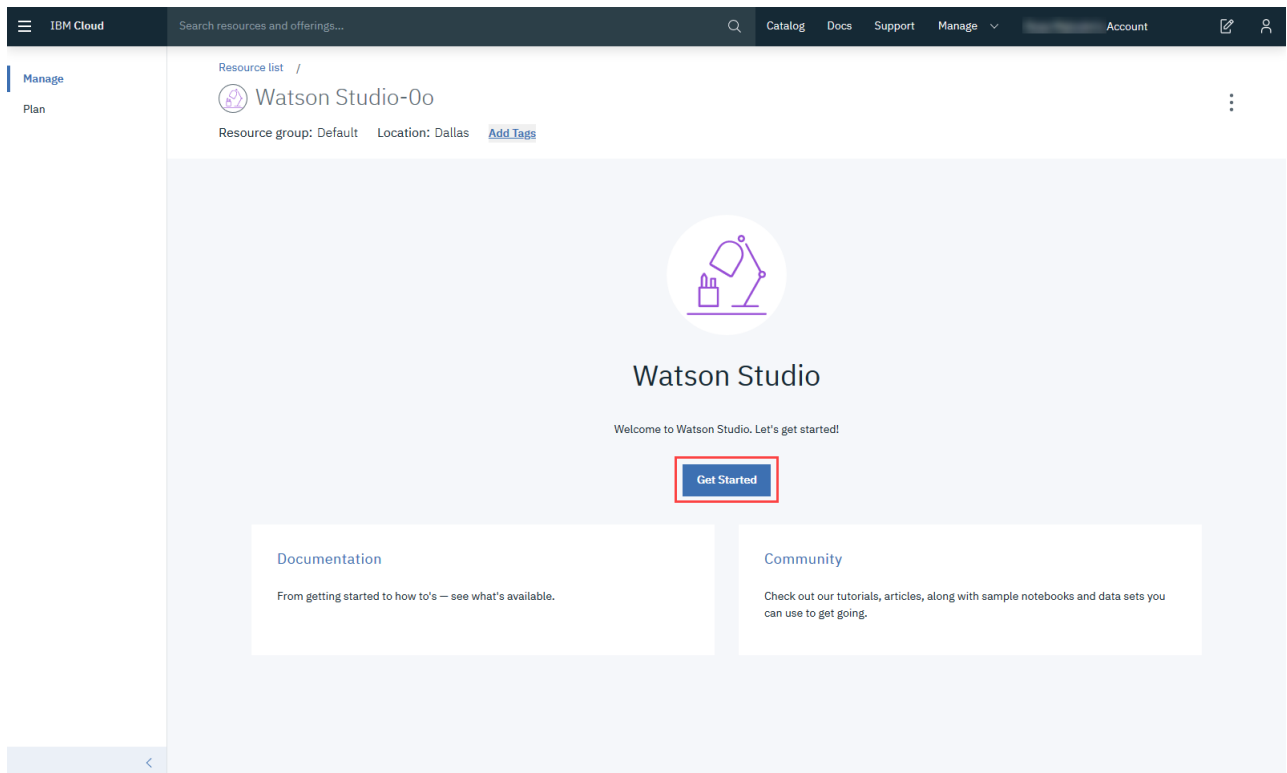
A 'FEEDBACK' button is visible on the right side of the dashboard.

3. In the Resource list, expand **Services**, and then click the Watson Studio service.

The screenshot shows the IBM Cloud Resource list. At the top, there's a navigation bar with 'IBM Cloud', a search bar, and links for Catalog, Docs, Support, and Manage. Below the navigation bar, the 'Resource list' title is followed by a 'Create resource' button. The main content area is a table with columns: Name, Group, Location, Offering, Status, and Tags. The table is filtered by 'Filter by name or IP address...' and 'Filter by group or org...'. The 'Services' category is expanded, showing a list of resources. The 'Watson Studio-0o' resource is highlighted with a red box. The table also includes a 'Collapse all | Expand all' link at the top right.

Name	Group	Location	Offering	Status	Tags
> Devices (0)					
> VPC Infrastructure (0)					
> Clusters (0)					
> Cloud Foundry Apps (0)					
> Cloud Foundry Services (0)					
> Services (1)					
Watson Studio-0o	Default	Dallas	Watson Studio	Provisioned	—
> Storage (1)					
> Network (0)					
> Cloud Foundry Enterprise Environments (0)					
> Functions Namespaces (0)					
> Apps (0)					
> Developer Tools (0)					

4. When the Watson Studio resource is successfully created, you will see the Watson Studio page. Click **Get Started**.



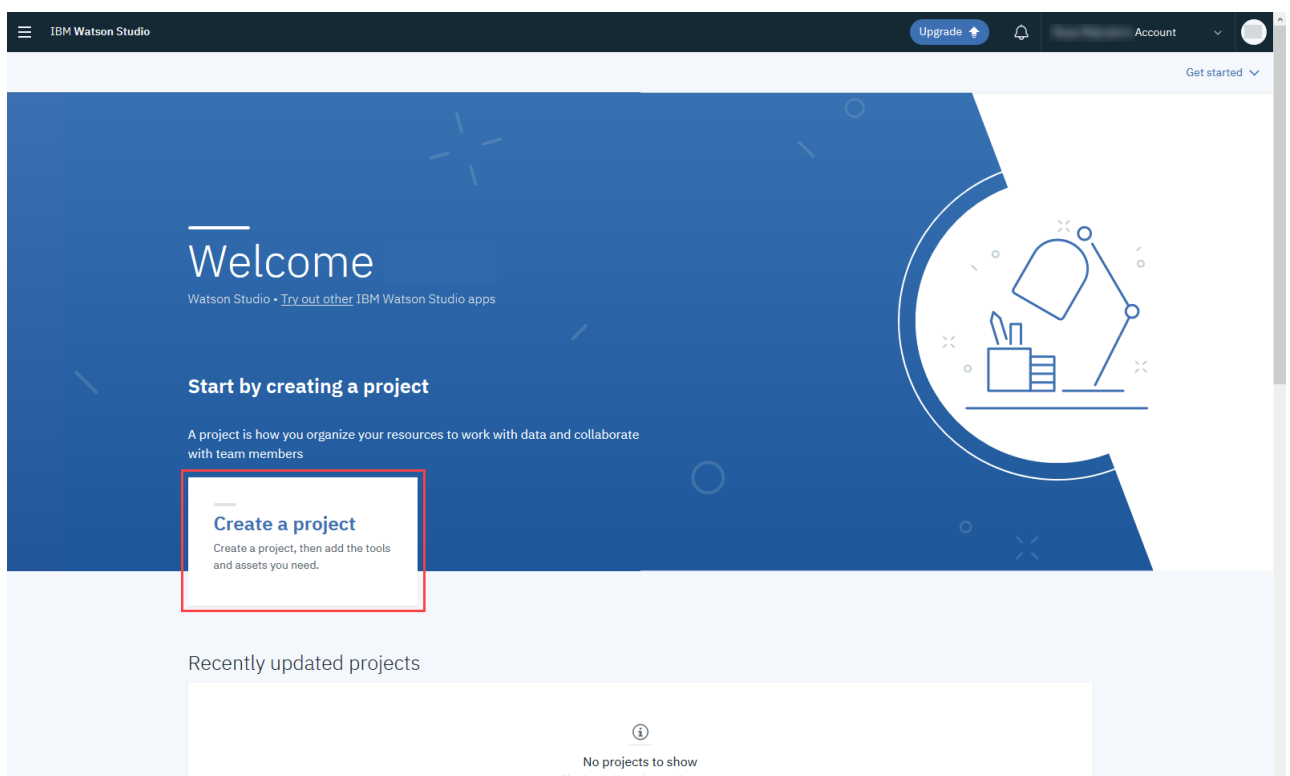
Exercise 2: Create a new project and add a Jupyter Notebook

Scenario

In this exercise, you will create a project to hold all the resources and services for your data analysis.

Task 1: Create a new project

1. On the Watson Studio Welcome page, click **Create a project**.




2. On the Create a project page, click **Create an empty project**.

[← Back](#)

Create a project

Choose whether to create an empty project or to preload your project with data and analytical assets. Add collaborators and data, and then choose the right tools to accomplish your goals. Add services as necessary.



Create an empty project

Add the data you want to prepare, analyze, or model. Choose tools based on how you want to work: write code, create a flow on a graphical canvas, or automatically build models.


NEW AutoAI experiment tool: Fully automated approach to building a classification or re...

USE TO

Prepare and visualize data

Analyze data in notebooks

Train models



Create a project from a sample or file

Get started fast by loading existing assets. Choose a project file from your system, or choose a curated sample project.

USE TO

Learn by example

Build on existing work

Run tutorials

3. On the New project page, enter a **Name** and **Description** for your project.

New project

Define project details

Name

Description

Choose project options

☐ Restrict who can be a collaborator ⓘ

Project will include integration with [Cloud Object Storage](#) for storing project assets.

Define storage

① Select storage service

[Add](#)

Add an object storage instance and then return to this page and click Refresh.

② Refresh

[Cancel](#)
[Create](#)

4. If your IBM Cloud account does not have existing storage for your project, you will be prompted to create it.
 If your IBM Cloud account does have storage, go to *Task 2: Add a Jupyter Notebook*.
 Under **Select storage service**, click **Add**.

New project

Define project details

Name

Project name

Description

Project description

Choose project options

☐ Restrict who can be a collaborator

Project will include integration with [Cloud Object Storage](#) for storing project assets.

Define storage

1 Select storage service

Add

Add an object storage instance and then return to this page and click Refresh.

2 Refresh

Cancel

Create

5. On the Cloud Object Storage page, verify that **Lite** is selected, and then click **Create**.

IBM Watson Studio

Upgrade

IBM Watson Studio

Cloud Object Storage

Existing New

Cloud Object Storage

IBM Cloud Object Storage is a highly scalable cloud storage service, designed for high durability, resiliency and security. Store, manage and access your data via our self-service portal and RESTful APIs. Connect applications directly to Cloud Object Storage use other IBM Cloud Services with your data.

Features

Storage for the IBM Cloud
 IBM Cloud Object Storage provides unstructured data storage for cloud applications. Libraries and SDKs support a common set of S3 API functions for connecting new applications to scalable cloud storage and integrating your data into other services on the IBM Cloud Platform as well as IBM Watson services. IBM Cloud Object Storage is available with Regional, Cross Region and single site resiliency options worldwide.

Built-in Aspera high-speed transfer
 With IBM Cloud Object Storage Aspera high-speed data transfer, you can improve data transfer performance by quickly transferring data over long distances, and under various network conditions. It is natively integrated into Cloud Object Storage and there is no additional cost for uploading data.

Storage Classes and Archive Policy
 Choose storage classes based on your usage patterns for active, less-active, and cold workloads with Standard, Vault, and Cold Vault respectively. Use Flex class for dynamic data access with usage patterns that are hard to predict. For rarely used data that requires long-term retention, simply set an Archive policy with our existing storage-class tiers allowing you to reduce costs even further with our lowest priced Archive storage.

Access and Key Management
 IBM Identity and Access Management (IAM) policies allow for granular access control at the bucket level using role-based policies. Key Protect support allows customers to have their own managed encryption keys for higher level data security.

Pricing Plan: Monthly Process shown above reflect the: United States

PLAN	FEATURES	PRICING
<input checked="" type="radio"/> Lite	1 COS Service Instance Storage up to 25 GB/mo. Up to 20,000 GET requests/mo. Up to 2,000 PUT requests/mo. Up to Data Retrieval 10 GB/mo. Up to 5GB Public Outbound Applies to aggregate total across all storage bucket classes	Free
<input type="radio"/> Standard	There is no minimum fee, so you pay only for what you use.	Expand each section to view details

The Lite service plan for Cloud Object Storage includes Regional and Cross Regional resiliency, flexible data classes, and built in security.

Cancel

Create

6. In the Confirm Creation box, click **Confirm**.

Confirm Creation

Plan

Lite

Resource group

Default

Service name

cloud-object-storage-ai

Cancel Confirm

Task 2: Add a Jupyter Notebook

1. On the project page, click **Add to project**.

IBM Watson Studio

My Projects / Python Basics for Data Science Pr...

Upgrade

Launch IDE

Add to project

Overview Assets Environments Jobs Deployments Access Control Settings

Python Basics for Data Science Project

Last Updated: 28 Oct, 2019

Readme

0 Assets 1 Collaborators

Date created
28 Oct, 2019

Description
This is the Python Basics for Data Science Project.

Storage
Cloud Object Storage
0 Byte used

Collaborators
View all (1)
Admin

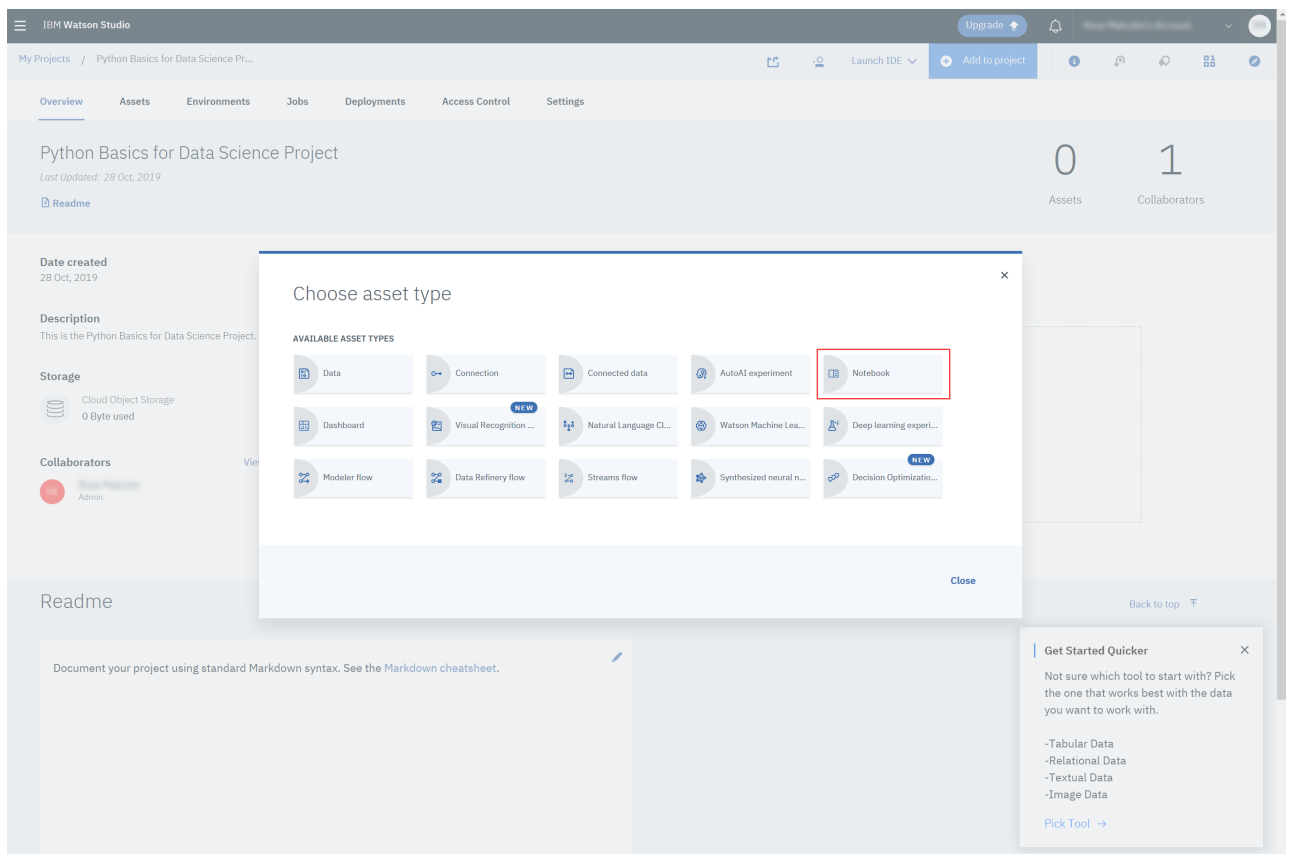
Recent activity

Alerts related to this project will show here when the project is active.

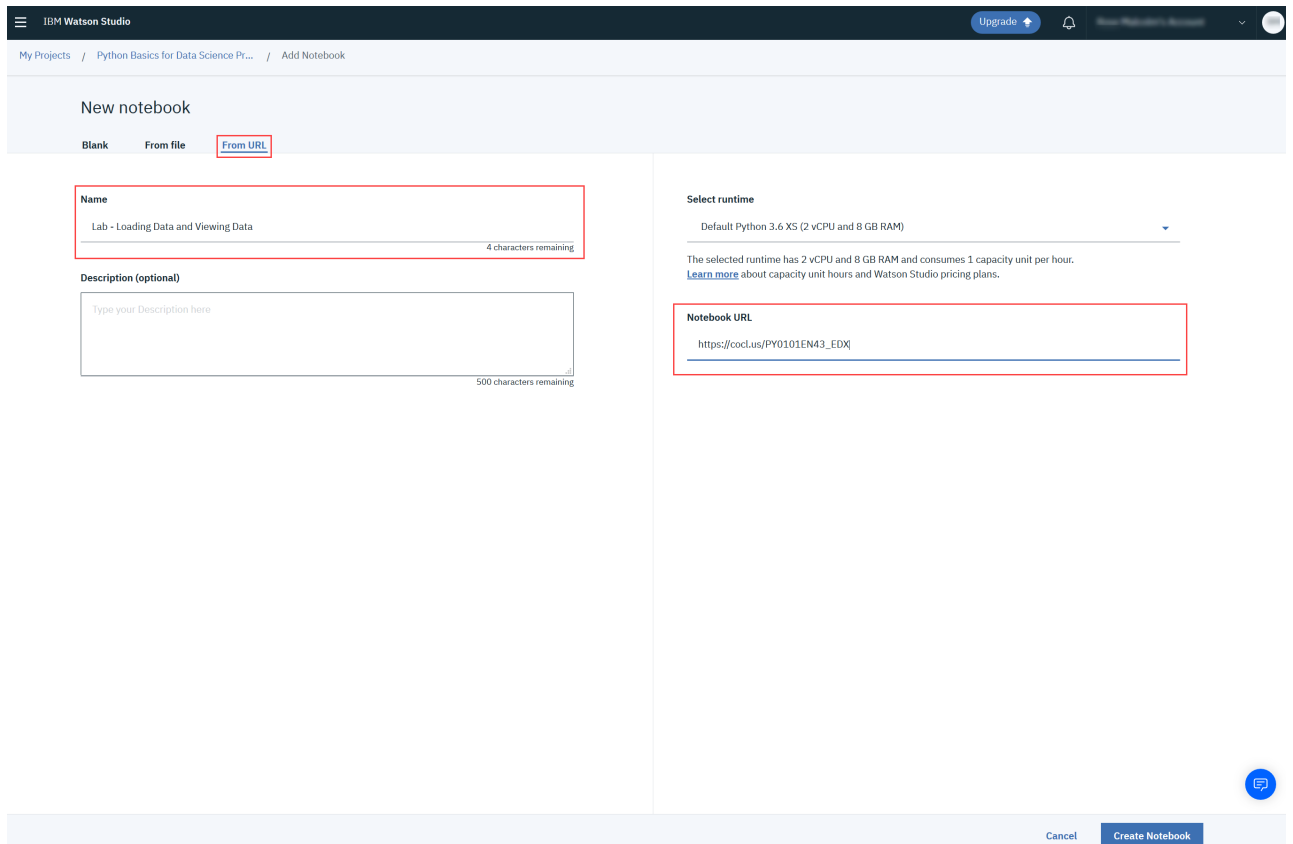
Readme
Back to top

Document your project using standard Markdown syntax. See the [Markdown cheatsheet](#).

2. In the Choose asset type box, click **Notebook**.



- On the Load Notebook page, enter a **Name** for your notebook, then click **From URL**. On the **Notebook URL** line, copy and paste the notebook URL from the introduction for the deep learning framework of your choice.



- The notebook you select, which contains the instructions and information for the assignment, is loaded.

The screenshot shows the IBM Watson Studio interface. At the top, there's a header with 'IBM Watson Studio', an 'Upgrade' button, and a user profile icon. Below the header, a breadcrumb trail reads 'My Projects / Data analysis project / test'. A toolbar contains various icons for file operations, running, and sharing. The main content area displays a notebook with the 'COGNITIVE CLASS' logo at the top. The notebook title is 'Analyzing US Economic Data and Building a Dashboard'. Under the 'Description' section, it explains the task: extracting essential data from a dataset and displaying it in a dashboard. It also defines Gross Domestic Product (GDP). A 'Table of Contents' section at the bottom lists 'Define a Function that Makes a Dashboard'.

Exercise 3: Perform Project on Pre-trained Model

Scenario

Train a neural network to determine if an image of concrete has a crack or does not have a crack.

Task 1: Train the output layer

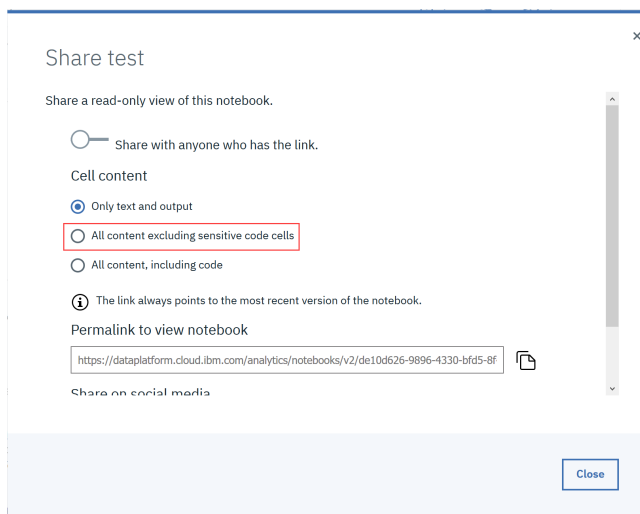
1. Follow the instructions in the Notebook to complete the assignment.

Task 2: Share your results

1. In the Notebook, on the toolbar, click **Share**.

This screenshot is similar to the first one, showing the same notebook in IBM Watson Studio. The key difference is that the 'Share' icon (represented by two overlapping arrows) in the top toolbar is highlighted with a red square, indicating the step to click 'Share'.

2. In the Share box, select **All content excluding sensitive code cells**.



3. To share the Notebook, scroll down and copy the permalink.

