

# Lab-1: Setup Environment

## Introduction

This lab will set up the Watson Studio environment for subsequent labs and introduce you to the Project and Gallery features of Watson Studio. Watson Studio is an integrated platform of tools, services, data, and meta-data to help companies and agencies accelerate their shift to be data driven organizations. The platform enables data professionals such as data scientists, data engineers, business analysts, and application developers collaboratively work with data to build, train, deploy machine learning and deep learning models at scale to infuse AI into business to drive innovation. Watson Studio is designed to support the development and deployment of data and analytics assets for the enterprise.

## End-to-End Data Science

The general flow of the End to End Data Science PoT will be guided by the activities shown in Figure 1- End to End Flow. This lab will focus on the Create Project and Research Topics activities.

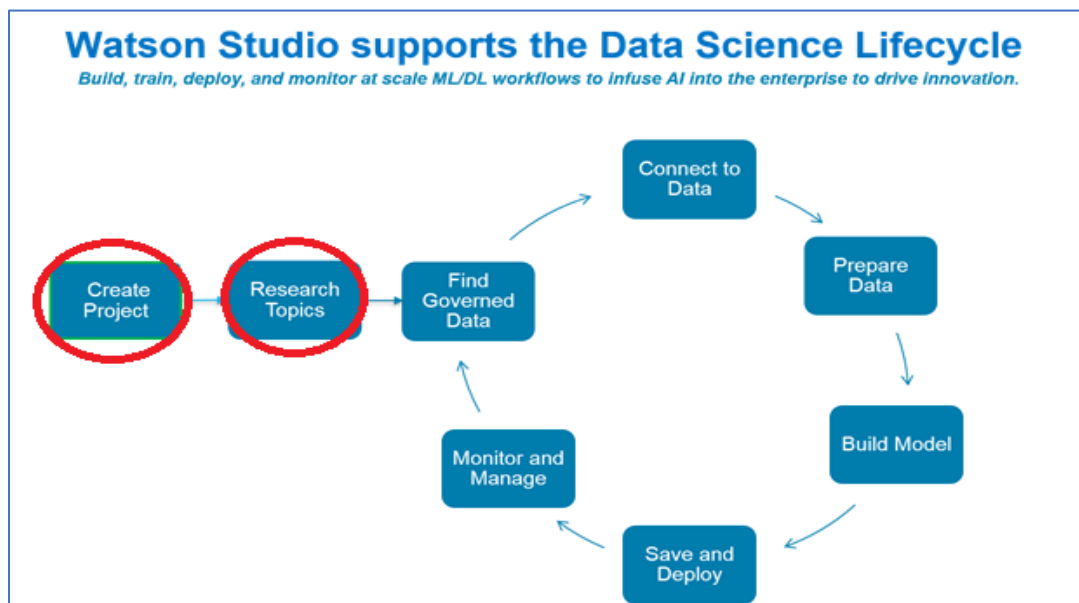


Figure 1- End to End Flow

## Objectives

The goal of this lab is to familiarize the user with the Project and Gallery features of Watson Studio, and to set up the environment for subsequent labs. Projects are a core component of Watson Studio. Projects enable you to organize your analytic and data assets in one place. Projects are also the home base for collaboration. Colleagues can be added as collaborators on a project with administrator, editor, or viewer access.

The [Watson Gallery](#) contains samples that you can use in your project:

- Run sample notebooks to learn new techniques or to use as templates for your own notebooks.
- Add sample data sets to your project

The [Watson Community](#) contains resources to help you learn about data science:

- Read articles from many sources to keep current with data science trends.
- Read tutorials for multiple skill levels to learn how to do specific data science tasks.

The Watson Gallery and Watson Community features support the “Research Topics” activity in the end-to-end process shown above.

After completing this lab, you will be familiar with these features of Watson Studio.

1. Create a project
2. Create an object storage instance and associate it with the project
3. Associate an existing Watson Machine Learning service instance with the project
4. Add a collaborator to the project
5. Research topics by searching for a notebook in the Gallery

## Create a Project

1. Log into your Watson Studio account by typing in the url **dataplatfomr.ibm.com** in your Firefox or Chrome browser.
2. Click on **Sign into Watson Studio Cloud** (not Cloud sign-up/log-in)



3. Enter your Watson Studio user id and click **Continue**.

# Log in to IBM

IBMid

[Forgot IBMid?](#)

wsuser30000@gmail.com

☐

Remember me



Continue

Don't have an account? [Create an IBMid](#)

Need help? [Contact the IBMid help desk](#)

4. Enter your **Password** and click **Log in**.

# Log in to IBM

Logging in as wsuser30000@gmail.com [Not you?](#)

Password

[Forgot password?](#)

.....

☐

Remember me

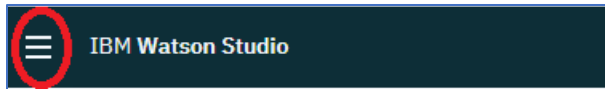


Log in

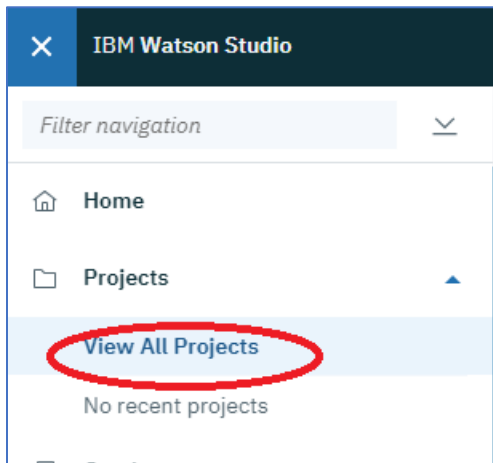
Don't have an account? [Create an IBMid](#)

Need help? [Contact the IBMid help desk](#)

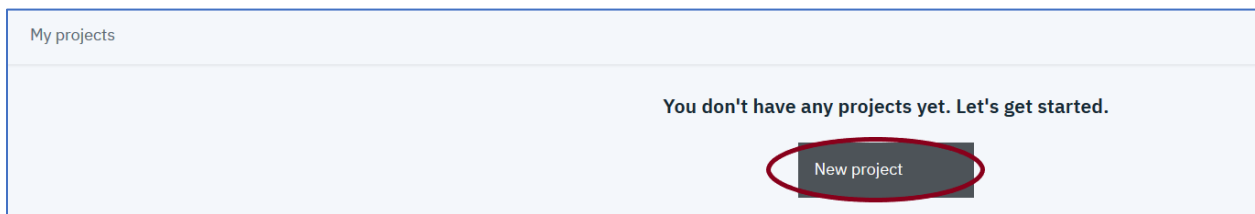
5. Click on the hamburger icon .



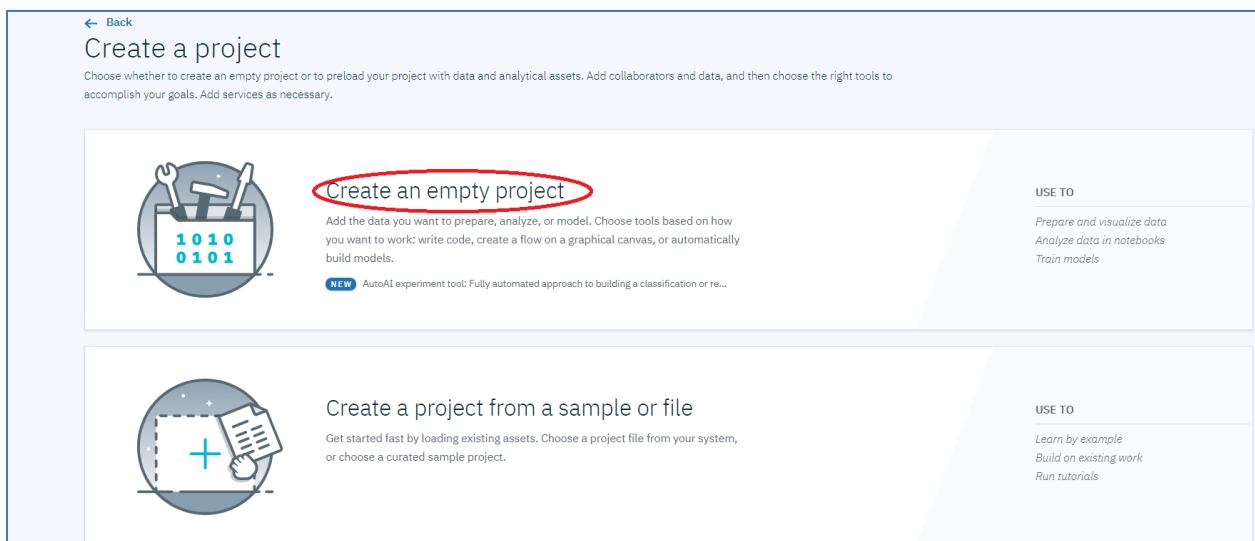
6. Click on **View All Projects**



7. Click on **New Project**.



8. Click on Create an empty project.



9. Enter “Watson Studio Labs” for the **Name**, optionally enter a **Description**, check **Restrict who can be a collaborator** (if it’s unchecked), and in **Define Storage** click on **Add** to add an object storage instance. If you already have an object storage instance, from prior use of Watson Studio or IBM Cloud (you shouldn’t see the Add link), skip to step 13.

New project

Define project details

Name  
Watson Studio Labs

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

10. Scroll down and click on **Lite**, and then click on **Create**

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

PLAN	FEATURES	PRICING
<input checked="" type="radio"/> Lite	<b>1 COS Service Instance</b> 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

11. Click **Confirm**.

Confirm Creation

Plan

Lite

Resource group

Default

Service name

cloud-object-storage-gu

Cancel

Confirm

**12. Click Refresh.**

New project

Define project details

Name

Watson Studio Labs

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.

Refresh

**13. Click Create.**

## New project

### Define project details

Name

Description

### Storage

cloud-object-storage-gu

### Choose project options

☒ Restrict who can be a collaborator ⓘ

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

Cancel
Create

**14.** The Project **Overview** page is shown. This page provides summarized information about the project. In addition to the Overview page, are six other pages described below.

- a. **Assets Page** – Analytics and Data assets can be added to the project from this page.
- b. **Environments Page** - Provides information on the current notebook environments that are defined, lists the active notebook environments currently running, and enables users to create custom notebook environments.
- c. **Jobs Page** – Provides the interface to the job subsystem. This replaces the separate UIs to set up and run jobs for Notebooks and the Data Refinery. This is a new feature in Watson Studio Cloud version.
- d. **Deployments Page** – Lists the deployed models
- e. **Access Control** – Lists the project collaborators and enables users to add/remove collaborators.
- f. **Settings** – Enables users to view and set project attributes.

IBM Watson Studio

Upgrade

Felix Doe's Account

FD

My Projects / Watson Studio Labs

Launch IDE

Add to project

Overview

Assets

Environments

Jobs

Deployments

Access Control

Settings

Watson Studio Labs

Last Updated: 10 Jan, 2020

Readme

0

Assets

1

Collaborators

Date created

10 Jan, 2020

Description

No description available

Storage

Cloud Object Storage

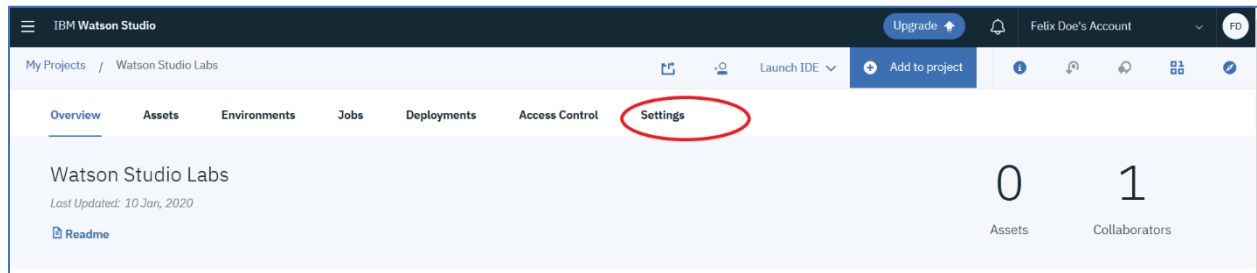
0 Byte used

Recent activity

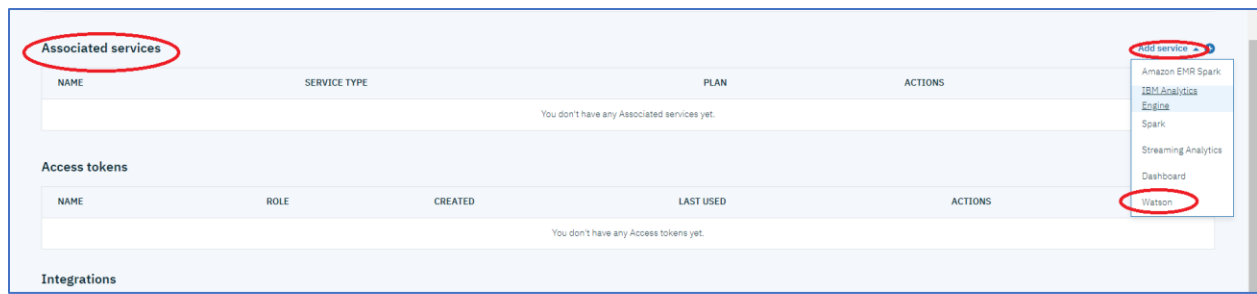
## Associate a Watson Machine Learning Service to the Project

To save and deploy machine learning models, a Watson Machine Learning service must be created (if one doesn't exist) and added to our project.

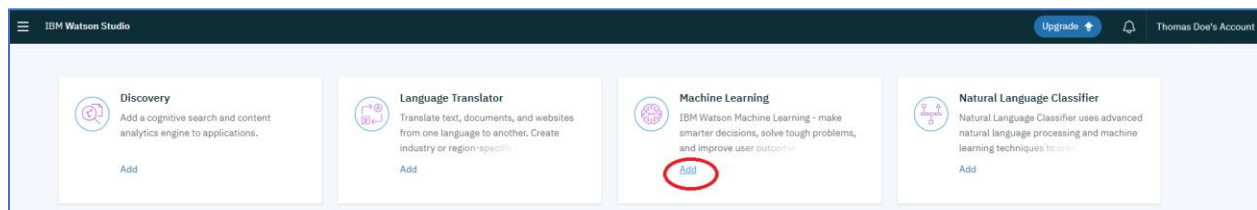
1. Click on **Settings** to navigate to the Project **Settings** page.



2. Scroll down to **Associated Services**, click on **Add service**, click on **Watson**.



3. Click on **Add** in the **Machine Learning** tile.



4. Newer Watson Studio accounts come with the WatsonMachineLearning instance already created. Select **Existing**, select **WatsonMachineLearning** for the **Existing Service Instance**, and click on **Select**. If you don't have an existing service, click on **New** and follow the instructions to create a Lite Watson Machine Learning service.



Machine Learning

**Existing** New

RESOURCE GROUP: All Resources ▾ LOCATION: All Locations ▾ CLOUD FOUNDRY ORG: None ▾

Existing Service Instance

WatsonMachineLearning ▾

Select Cancel

5. The **WatsonMachineLearning** service is associated with the project.

Associated services <span>Add service +</span>			
NAME	SERVICE TYPE	PLAN	ACTIONS
WatsonMachineLearning	Watson - Machine Learning		

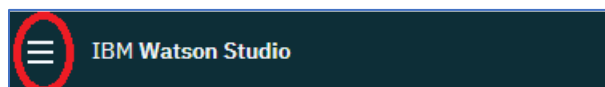
## Add a Project Collaborator

Colleagues can gain access to a project's data and analytic assets by being made a collaborator. Permissions are based on the assigned role. The roles are administrator, editor, and viewer.

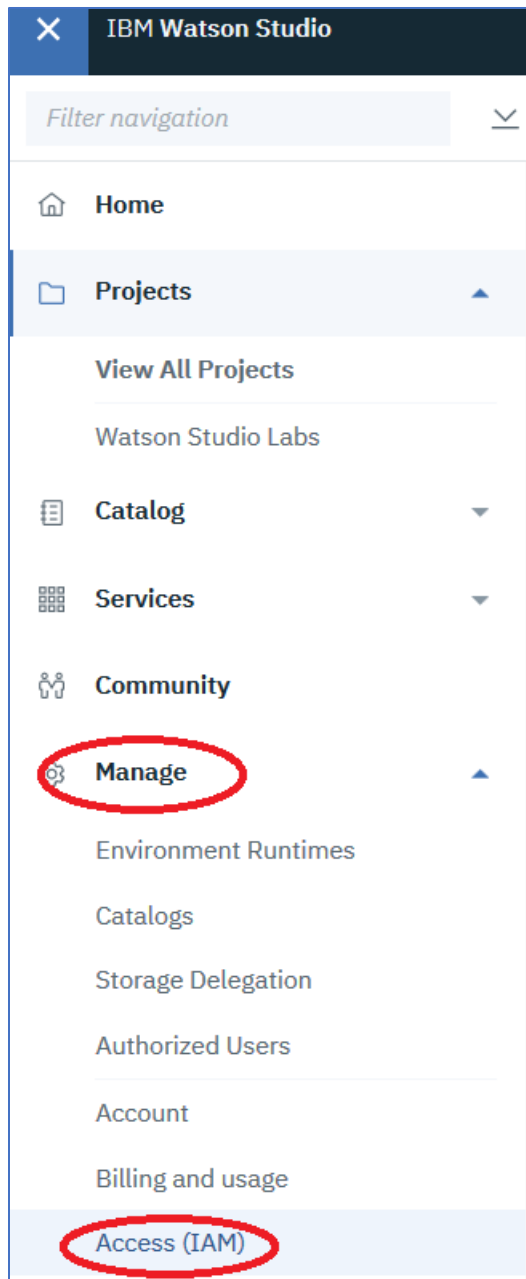
Recall, the project that was created in this lab restricts who can collaborate. This option was required to demonstrate the Watson Knowledge catalog features in lab-2. The restriction limits the collaborators to be members of your company (if your company has federated SAML with IBM Cloud), or a member of the project creator's IBM Cloud account. Given the restriction, to demonstrate adding collaborators to the project, we will need to first add the collaborator to your IBM Cloud account.

### Step 1 – Add Collaborator to the IBM Account

1. Click on the hamburger ☰ icon

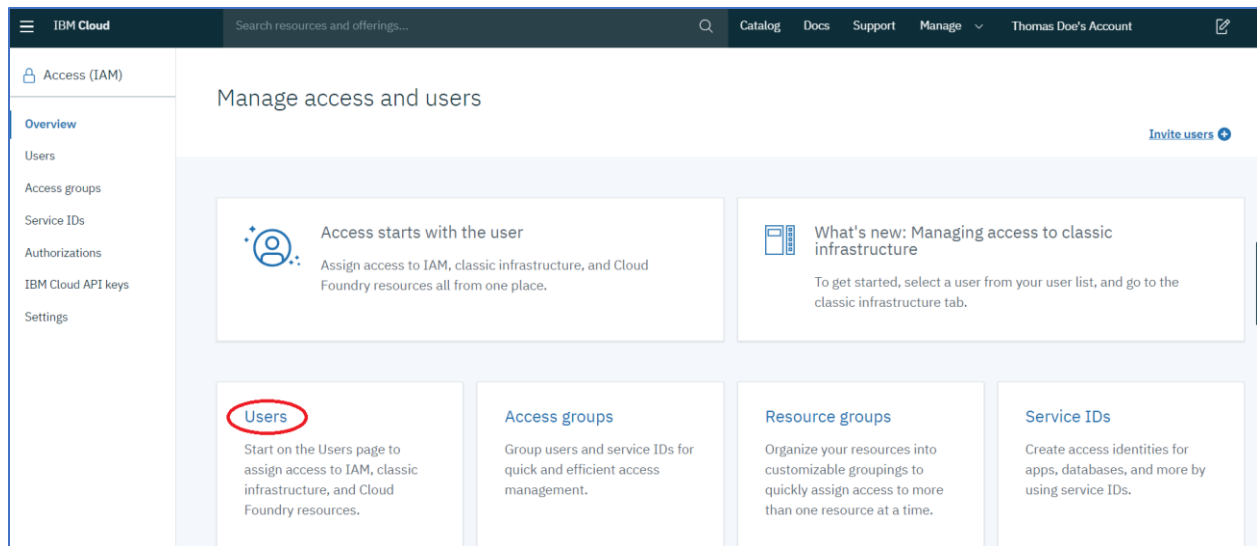


2. Click on **Manage** and then click on **Access (IAM)**

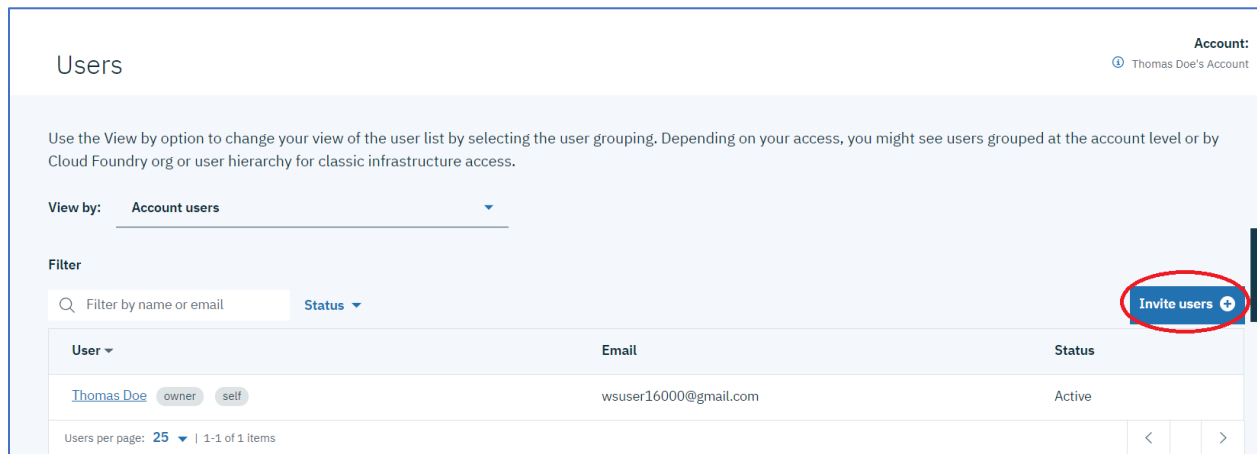


3. An **Identity and Access Management (IAM)** browser tab is created providing the IBM Cloud user interface to the IAM subsystem. Click on **Users**.





4. Click on **Invite Users**.



5. For **E-mail address**, enter **ws.catalog.user@gmail.com**, and click on **Assign users additional access**.

Users /

Invite users

Enter email addresses

ws.catalog.user@gmail.com

Add users to access groups

Add users to one or more access groups. You can assign users only to the access groups that you have access to manage.

No access groups are available. Go to the [Access groups](#) page to view or create access groups.

Assign users additional access

Depending on your level of access, you can assign Cloud Foundry roles, classic infrastructure permissions, and IAM access policies. By default, users don't have access to view, create, or manage support cases.

Access summary

Summary

API

1

User

0

Access groups

0

Assignments

You haven't added any access, but that's ok. You can still invite users to your account.

Invite

Cancel

6. Click on **IAM services**.

Users /

Invite users

Enter email addresses

ws.catalog.user@gmail.com

Add users to access groups

Add users to one or more access groups. You can assign users only to the access groups that you have access to manage.

Assign users additional access

Depending on your level of access, you can assign Cloud Foundry roles, classic infrastructure permissions, and IAM access policies. By default, users don't have access to view, create, or manage support cases.

Cloud Foundry

Access to orgs and spaces that contain resources managed by Cloud Foundry

IAM services

Access to IAM-enabled services

Account management

Access to services like billing, user management, support center, and more

7. Click on **All Identity and Access enabled services**.

Enter email addresses

ws.catalog.user@gmail.com

Add users to access groups

Add users to one or more access groups. You can assign users only to the access groups that you have access to manage.

Assign users additional access

Depending on your level of access, you can assign Cloud Foundry roles, classic infrastructure permissions, and IAM access policies. By default, users don't have access to view, create, or manage support cases.

Cloud Foundry  
Access to orgs and spaces that contain resources managed by Cloud Foundry

IAM services  
Access to IAM-enabled services

Account management  
Access to services like billing, user management, support center, and more

What type of access do you want to assign?

No access x ^ in Account x v

No access

All Identity and Access enabled services

Reset Add +

8. Scroll down click on **Viewer** under **Platform access** and **Reader** under **Service access**, and click on **Add**.

All Identity and Access enabled services x v in Account x v

This option automatically grants access to new services when added.

Region

All regions v

Platform access ⓘ

☒ **Viewer** As a viewer, you can view service instances, but you can't modify them.

☐ Operator As an operator, you can perform platform actions required to configure and operate service instances, such as viewing a service's dashboard.

☐ Editor As an editor, you can perform all platform actions except for managing the account and assigning access policies.

☐ Administrator As an administrator, you can perform all platform actions based on the resource this role is being assigned, including assigning access policies to other users.

Service access ⓘ

☒ **Reader** As a reader, you can perform read-only actions within a service such as viewing service-specific resources.

☐ Writer As a writer, you have permissions beyond the reader role, including creating and editing service-specific resources.

☐ Manager As a manager, you have permissions beyond the writer role to complete privileged actions as defined by the service. In addition, you can create and edit service-specific resources.

Reset Add +

## 9. Click on **Invite**.

ws.catalog.user@gmail.com

Add users to access groups

Add users to one or more access groups. You can assign users only to the access groups that you have access to manage.

Assign users additional access

Depending on your level of access, you can assign Cloud Foundry roles, classic infrastructure permissions, and IAM access policies. By default, users don't have access to view, create, or manage support cases.

Cloud Foundry  
Access to orgs and spaces that contain resources managed by Cloud Foundry

IAM services  
Access to IAM-enabled services

Account management  
Access to services like billing, user management, support center, and more

What type of access do you want to assign?

No access x in Account x

Reset Add +

Access summary

Summary API

1 User 0 Access groups 1 Assignment

IAM services  
All resources in account (including future IAM enabled services)

Viewer Reader

Remove Edit

Invite

Cancel

## 10. You should have two users in the account. The second user should be "Howard Doe".

Filter

Filter by name or email Status

Invite users +

User	Email	Status
George Doe owner self	wsuser42000@gmail.com	Active
Howard Doe	ws.catalog.user@gmail.com	Active

Items per page: 25 1-2 of 2 items

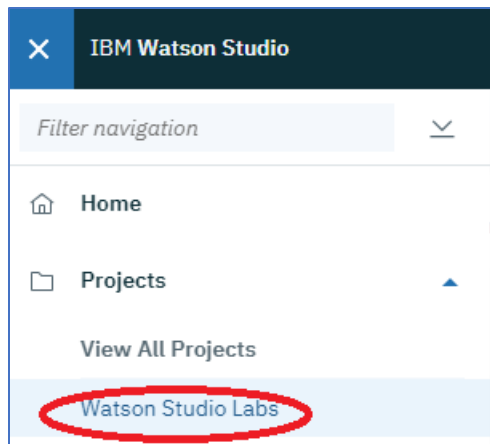
## Step 2 – Add Collaborator to the Project

Now that the collaborator has been added to your IBM Cloud Account, you can add the collaborator to the project.

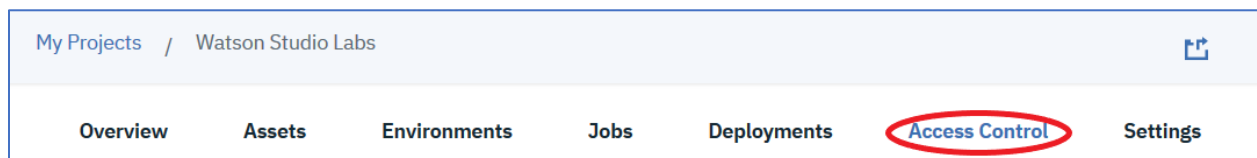
### 1. Close the Identity and Access Management tab.

### 2. Click on the **IBM Watson Studio** tab. Click on the icon.

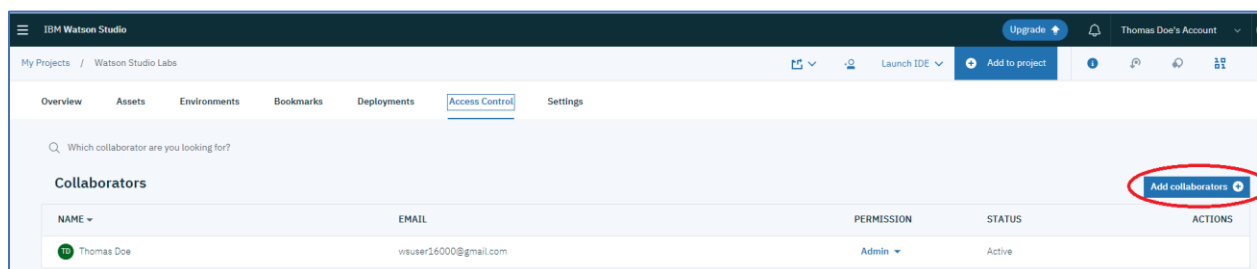
### 3. Click on Watson Studio Labs.



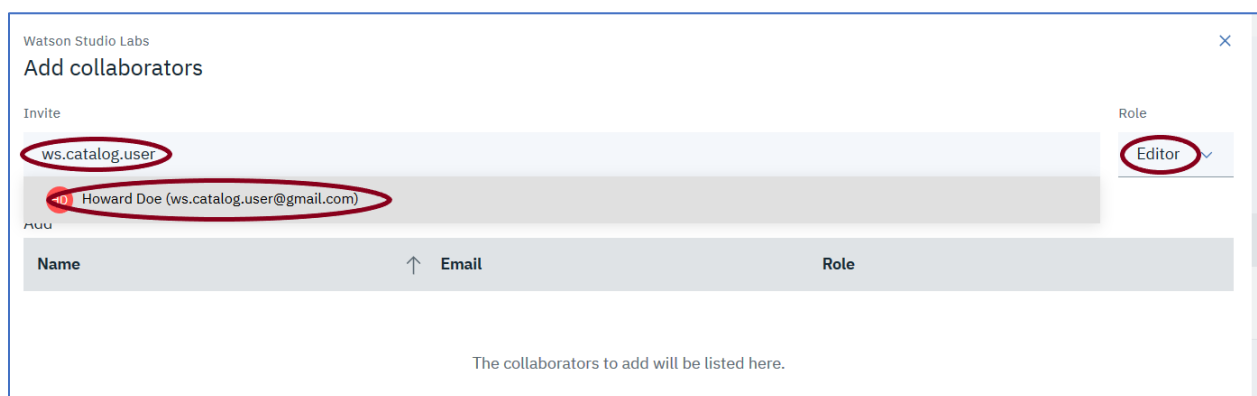
4. Click on the **Access Control** tab.



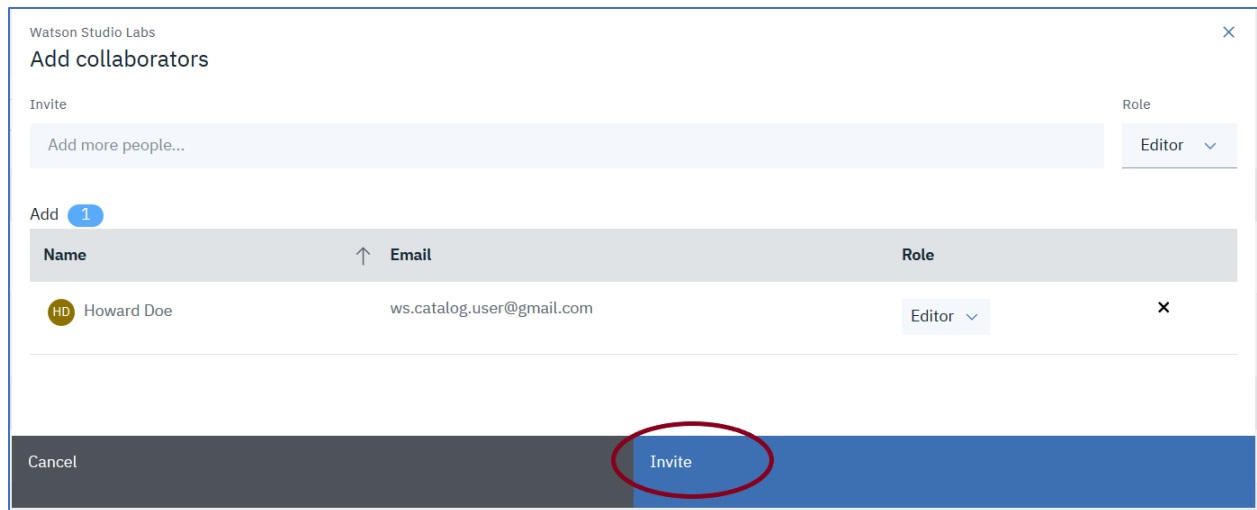
5. Click on **Add collaborators**.



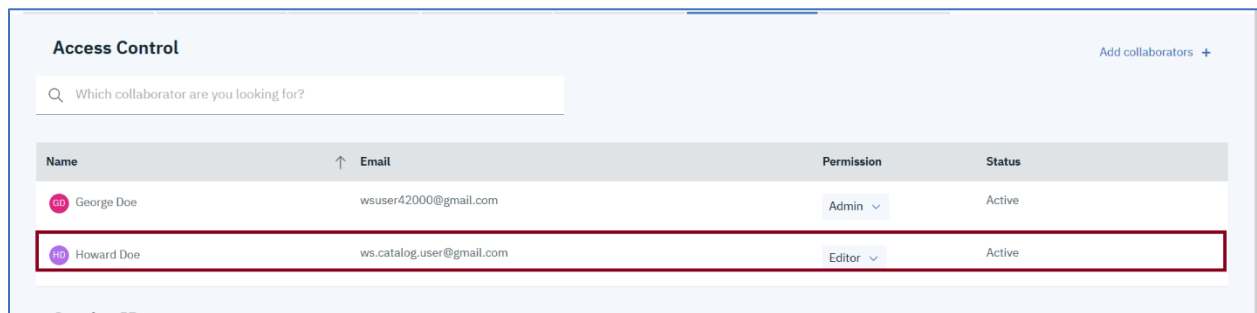
6. For **Invite**, start entering **ws.catalog.user@gmail.com** and once a match has been made, make sure to select the Editor role (if not already set to Editor), and click on the name in the list.



7. Click **Invite**.




8. The collaborator is added.

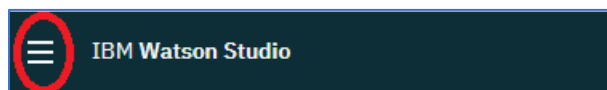


## Research Topics

As you work on a data analysis project, you may need to do some research to help find a solution. Watson Studio provides a built-in capability, accessed via the **Gallery** option, that contains sample notebooks, and sample datasets. These are curated on a regular basis to provide up-to-date materials.

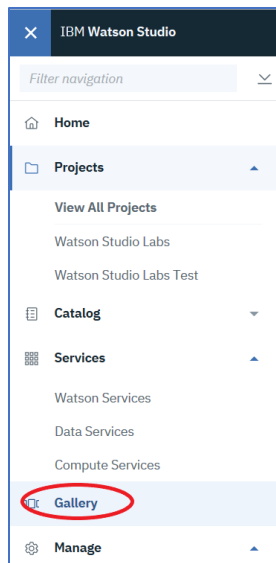
For the lab exercise, assume that you are interested in learning how to develop a Spark model. We will look for a sample notebook that demonstrates this capability and add this notebook to our project. **Note, we are doing this exercise for illustrative purposes on using the Gallery, and not for use in any subsequent lab.**

1. Click on the  icon.

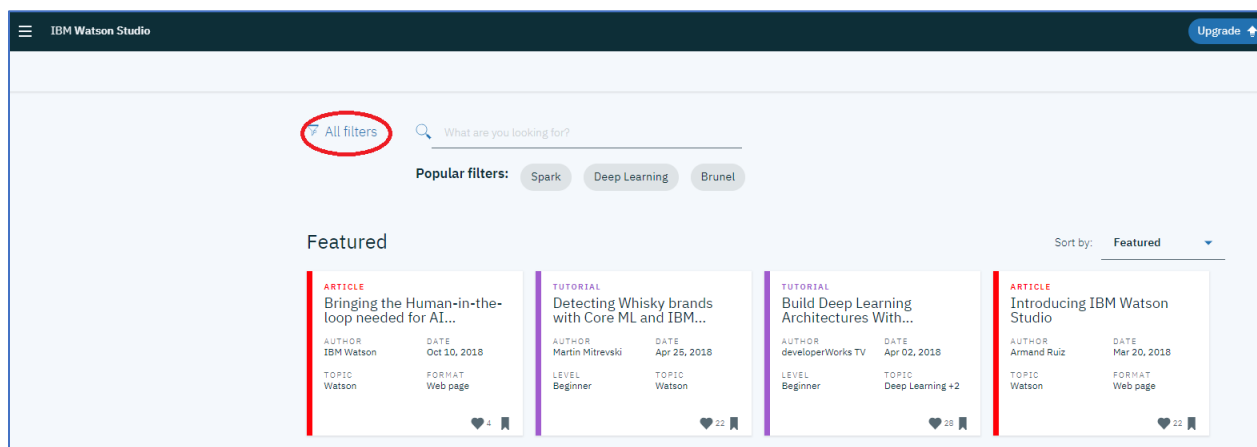


2. Click on **Gallery**.

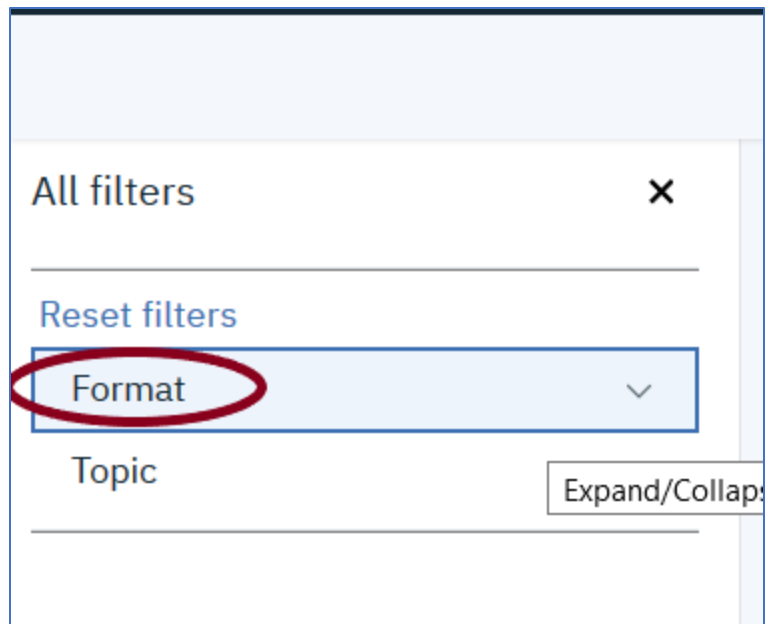




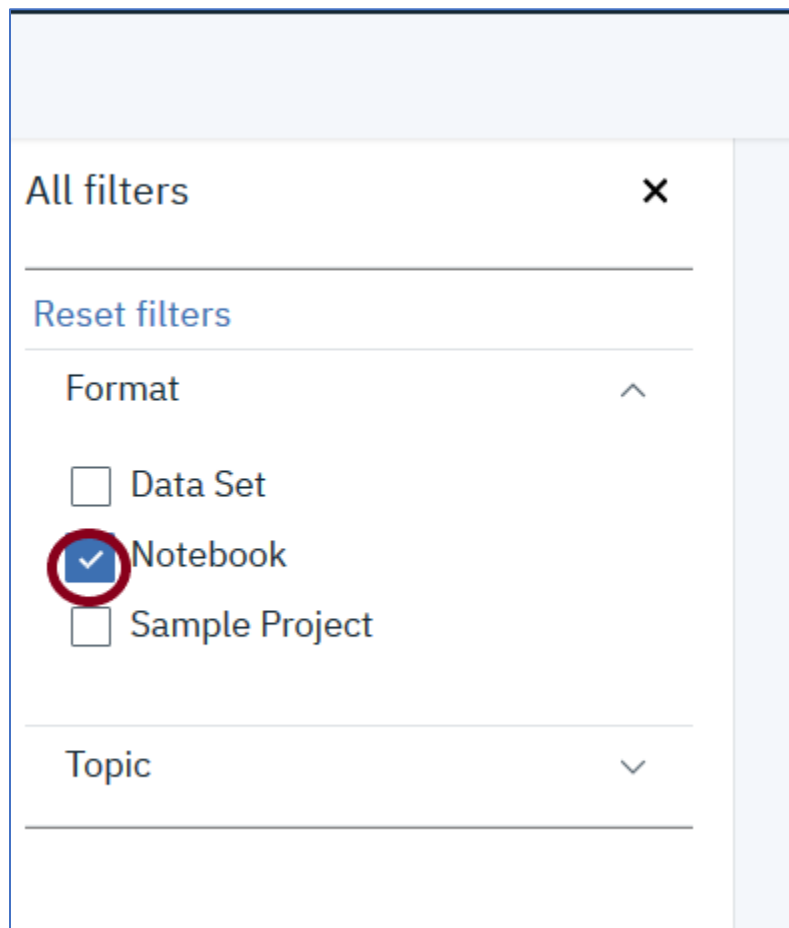
3. The Gallery is displayed. Click on **All filters**.



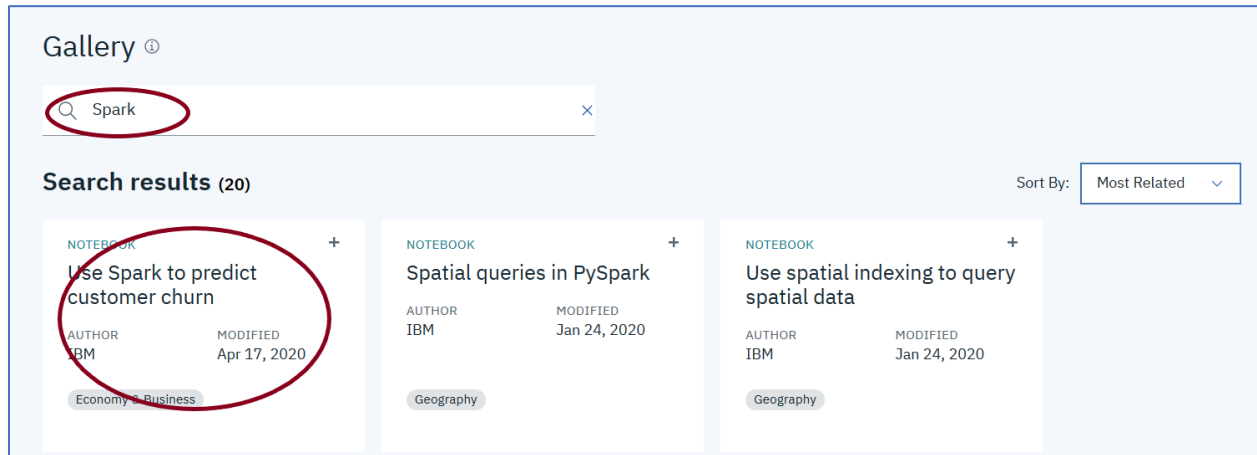
4. Click on **Format**.



5. Click on **Notebook**.



6. Enter **Spark** in the **Search** area. The Gallery view is updated. Locate the Gallery Card “Use Spark to predict customer churn”. Hover the mouse over the card. The descriptive text provides a notebook summary. This notebook appears to be a good candidate for having code demonstrating the use of the Spark. Click on the **Gallery Card**.



7. Here you can review the notebook documentation and then add it to the project if this notebook was a good starting point. We are not using this notebook for our labs so don't add it to the project. Our purpose was just to demonstrate the **Gallery** feature.

## You have completed Lab-1!

- ✓ Created a project
- ✓ Created an object storage instance and associate it with the project
- ✓ Associated an existing Watson Machine Learning service instance with the project
- ✓ Added a collaborator to the project
- ✓ Demonstrated researching topics by searching the Gallery.

