Predict Baby Weight with TensorFlow on AI Platform

GSP013

Overview

In this lab you train, evaluate, and deploy a machine learning model to predict a baby's weight. You then send requests to the model to make online predictions.

What you learn

In this lab, you:

- Launch AI Platform notebook
- Carry out local training
- Carry out distributed training
- Deploy the ML model as a web service
- Make predictions with the model

Setup

Before you click the Start Lab button

Read these instructions. Labs are timed and you cannot pause them. The timer, which starts when you click **Start Lab**, shows how long Google Cloud resources will be made available to you.

This Qwiklabs hands-on lab lets you do the lab activities yourself in a real cloud environment, not in a simulation or demo environment. It does so by giving you new, temporary credentials that you use to sign in and access Google Cloud for the duration of the lab.

What you need

To complete this lab, you need:

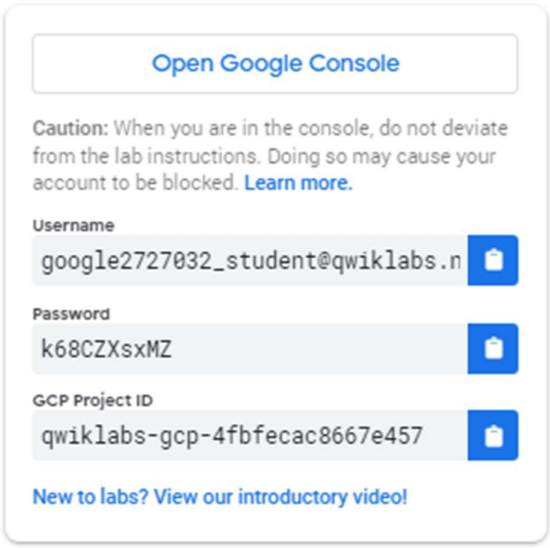
- Access to a standard internet browser (Chrome browser recommended).

- Time to complete the lab.
  Note: If you already have your own personal Google Cloud account or project, do not use it for this lab.

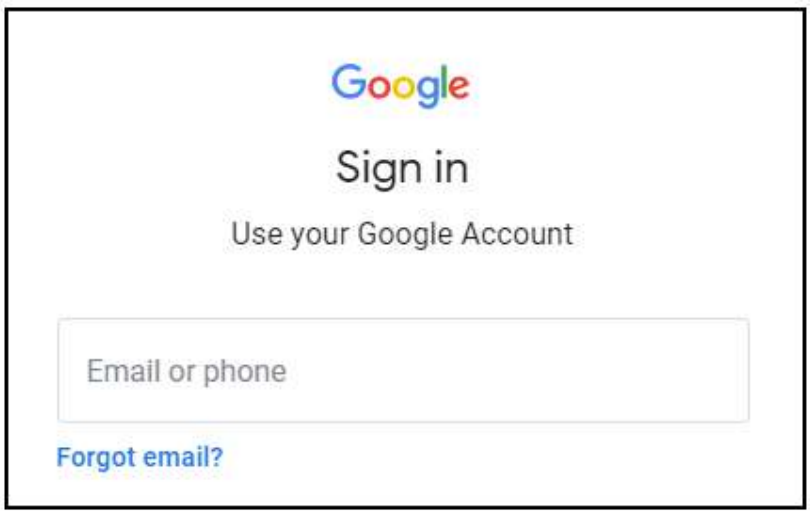
  Note: If you are using a Pixelbook, open an Incognito window to run this lab.

  How to start your lab and sign in to the Google Cloud Console

  1. Click the **Start Lab** button. If you need to pay for the lab, a pop-up opens for you to select your payment method. On the left is a panel populated with the temporary credentials that you must use for this lab.

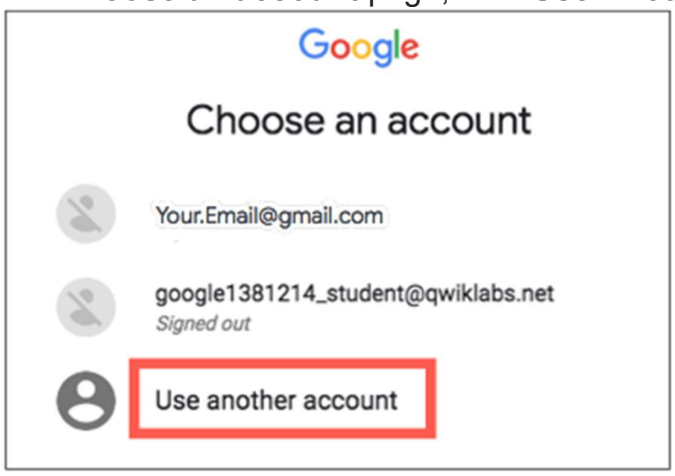


  2. Copy the username, and then click **Open Google Console**. The lab spins up resources, and then opens another tab that shows the **Sign in** page.



  Tip: Open the tabs in separate windows, side-by-side.

If you see the **Choose an account** page, click **Use Another Account**.



3. In the **Sign in** page, paste the username that you copied from the Connection Details panel. Then copy and paste the password.

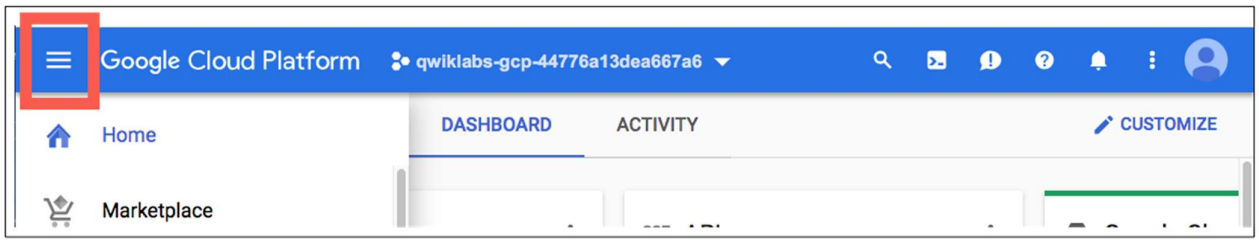
   Important: You must use the credentials from the Connection Details panel. Do not use your Qwiklabs credentials. If you have your own Google Cloud account, do not use it for this lab (avoids incurring charges).

4. Click through the subsequent pages:

   - Accept the terms and conditions.
   - Do not add recovery options or two-factor authentication (because this is a temporary account).
   - Do not sign up for free trials.

After a few moments, the Cloud Console opens in this tab.

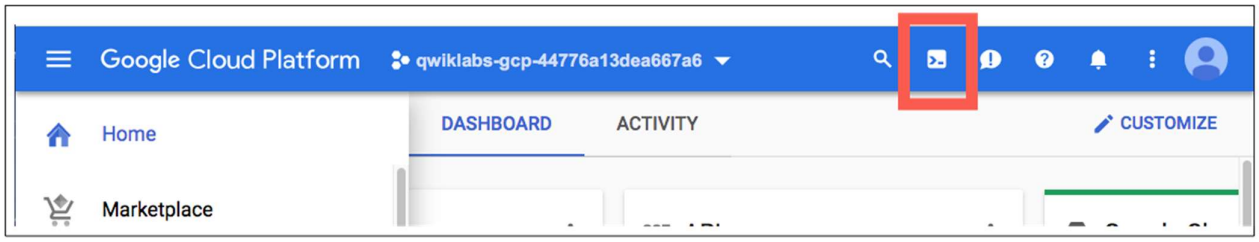
Note: You can view the menu with a list of Google Cloud Products and Services by clicking the **Navigation menu** at the top-left.



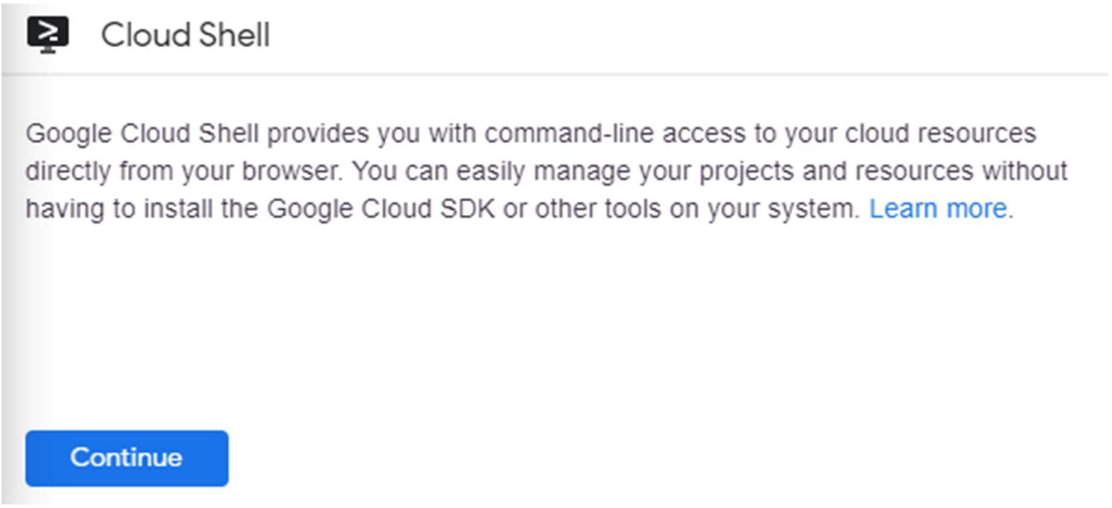
Activate Cloud Shell

Cloud Shell is a virtual machine that is loaded with development tools. It offers a persistent 5GB home directory and runs on the Google Cloud. Cloud Shell provides command-line access to your Google Cloud resources.

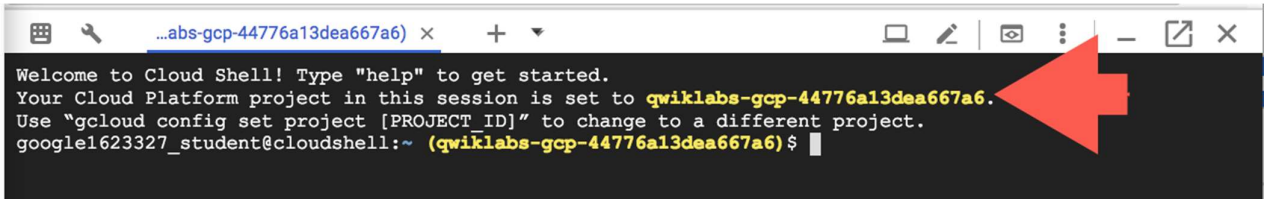
In the Cloud Console, in the top right toolbar, click the **Activate Cloud Shell** button.



Click **Continue**.



It takes a few moments to provision and connect to the environment. When you are connected, you are already authenticated, and the project is set to your *PROJECT_ID*. For example:



`gcloud` is the command-line tool for Google Cloud. It comes pre-installed on Cloud Shell and supports tab-completion.

You can list the active account name with this command:

```
gcloud auth list
```

(Output)

```
Credentialed accounts:
 - <myaccount>@<mydomain>.com (active)
```

(Example output)

```
Credentialed accounts:
 - google1623327_student@qwiklabs.net
```

You can list the project ID with this command:

```
gcloud config list project
```

(Output)

```
[core]
project = <project_ID>
```

(Example output)

```
[core]
project = qwiklabs-gcp-44776a13dea667a6
```

For full documentation of `gcloud` see the gcloud command-line tool overview.

Creating the Bucket

Create a bucket using the Google Cloud console:

Step 1

In your Cloud Console, click on the **Navigation menu**, and select **Storage**.

Step 2

Click on **Create bucket**.

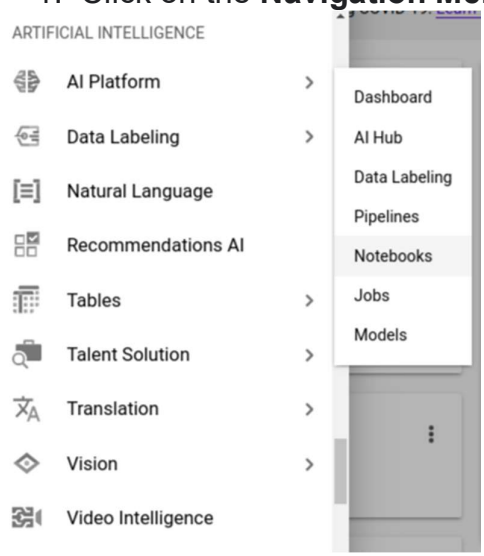
Step 3

Choose a Regional bucket and set a unique name (use your project ID because it is unique). Then, click **Create**.

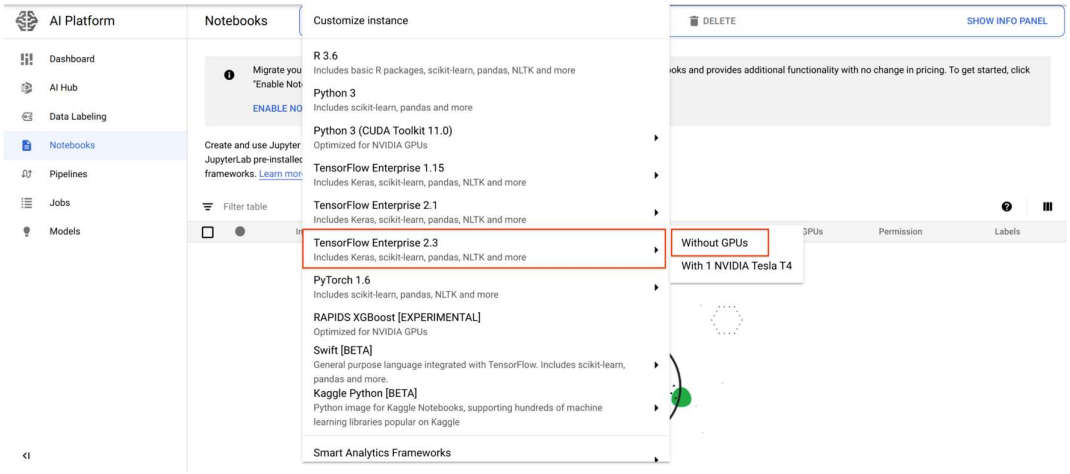
Launch AI Platform Notebooks

To launch AI Platform Notebooks:

1. Click on the **Navigation Menu** and navigate to **AI Platform**, then to **Notebooks**.



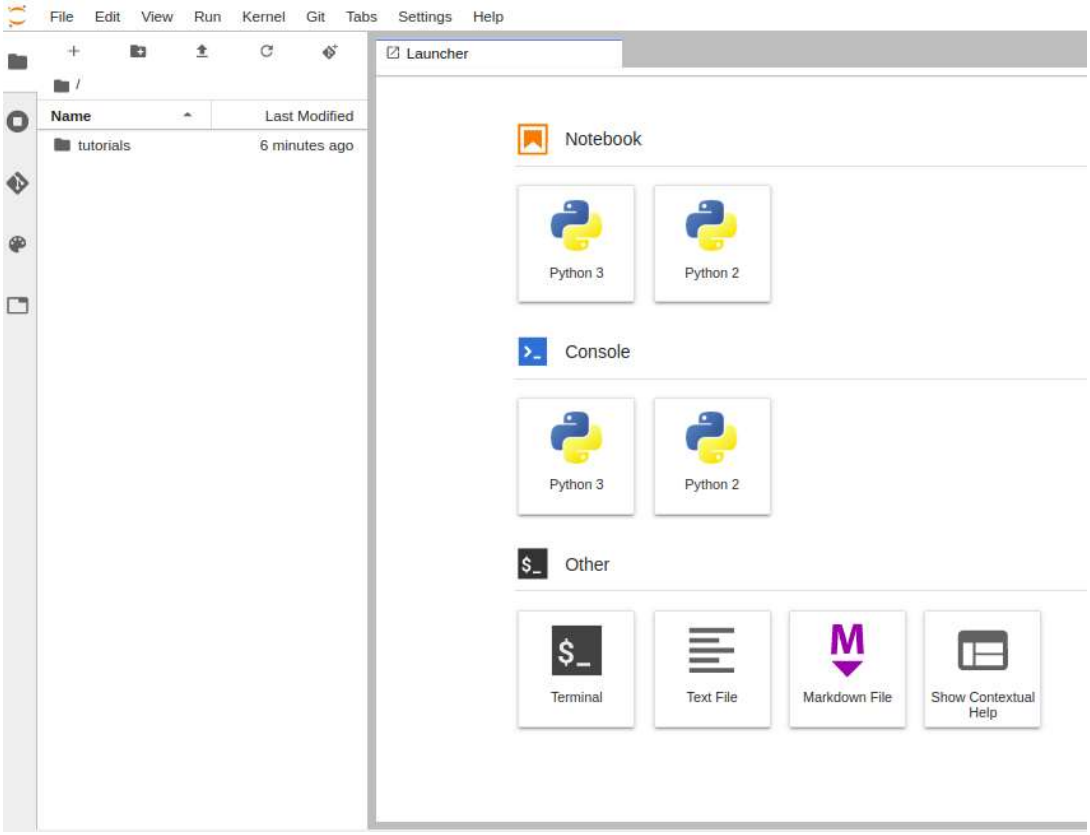
2. On the Notebook instances page, click **New Instance**. Select the latest version of TensorFlow Enterprise 2.x *Without GPUs*.



In the pop-up, confirm the name of the deep learning VM, for **Region**, select `us-central1` and for **Zone**, select a zone within that region. Leave the remaining fields with their default and click **Create**.

The new VM will take 2-3 minutes to start.

3. Click **Open JupyterLab**. A JupyterLab window will open in a new tab.



Click **Check my progress** to verify the objective.

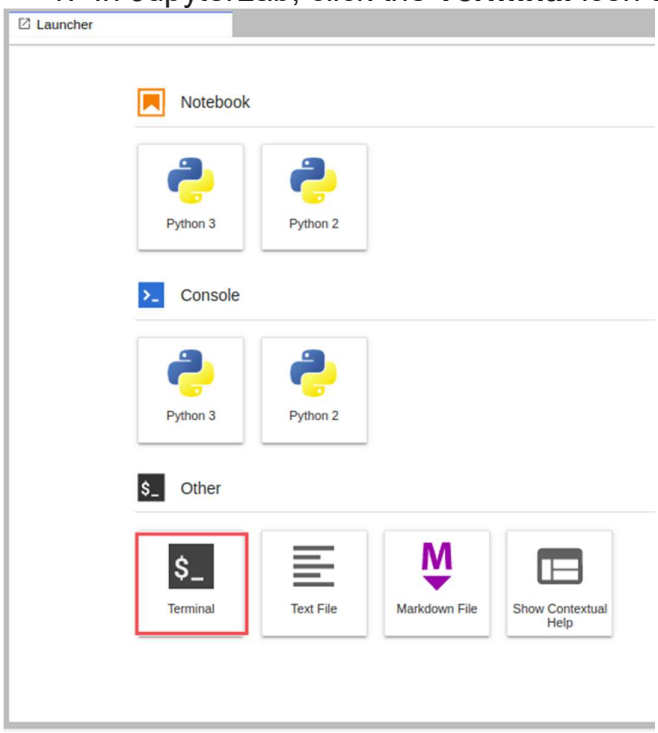
Launch AI Platform Notebooks

Check my progress

Clone course repo within your AI Platform Notebooks instance

To clone the `training-data-analyst` notebook in your JupyterLab instance:

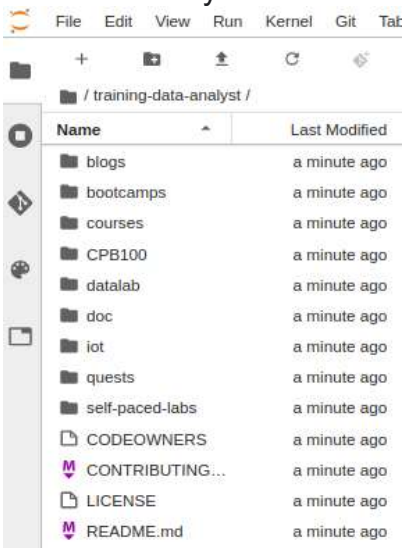
1. In JupyterLab, click the **Terminal** icon to open a new terminal.



2. At the command-line prompt, type in the following command and press Enter.

```
git clone https://github.com/GoogleCloudPlatform/training-data-analyst
```

3. Confirm that you have cloned the repository by double clicking on the `training-data-analyst` directory and ensuring that you can see its contents. The files for all the Jupyter notebook-based labs throughout this course are available in this directory.



Clone course repo within your AI Platform Notebooks instance

Check my progress

Execute training and prediction jobs

Step 1

In the notebook interface, navigate to **training-data-analyst > blogs > babyweight** and open **train_deploy.ipynb**.

Step 2

From the menu, click **Edit > Clear All Outputs**.

Step 3

From the top right corner, select **Python 2** and change it to **Python 3**.

Step 4

Read the narrative and click **Shift + Enter** (or Run) on each cell in the notebook.

Test your knowledge

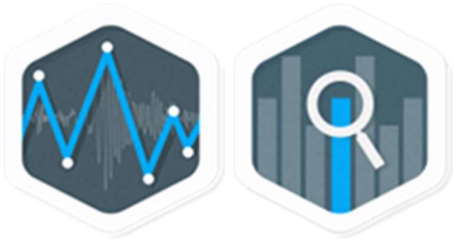
Test your knowledge about Google cloud Platform by taking our quiz.

Currently as far as Tensorflow is concerned, the only supported GPUs are that of NVIDIA.
checkTrue
False

Congratulations!

You learned how to train, evaluate, and deploy a machine learning model in Cloud Datalab.

Finish Your Quest



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Manual Last Updated June 17, 2020

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