

AI Platform: Qwik Start

GSP076



Google Cloud Self-Paced Labs

Overview

This lab will give you hands-on practice with [TensorFlow 2.x](#) model training, both locally and on [AI Platform](#). After training, you will learn how to deploy your model to AI Platform for serving (prediction). You'll train your model to predict income category of a person using the [United States Census Income Dataset](#).

This lab gives you an introductory, end-to-end experience of training and prediction on AI Platform. The lab will use a census dataset to:

- Create a TensorFlow 2.x training application and validate it locally.
- Run your training job on a single worker instance in the cloud.
- Deploy a model to support prediction.
- Request an online prediction and see the response.

What you will build

The sample builds a classification model for predicting income category based on United States Census Income Dataset. The two income categories (also known as labels) are:

- **>50K** — Greater than 50,000 dollars
- **<=50K** — Less than or equal to 50,000 dollars

The sample defines the model using the Keras Sequential API. The sample defines the data transformations particular to the census dataset, then assigns these (potentially) transformed features to either the DNN or the linear portion of 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.

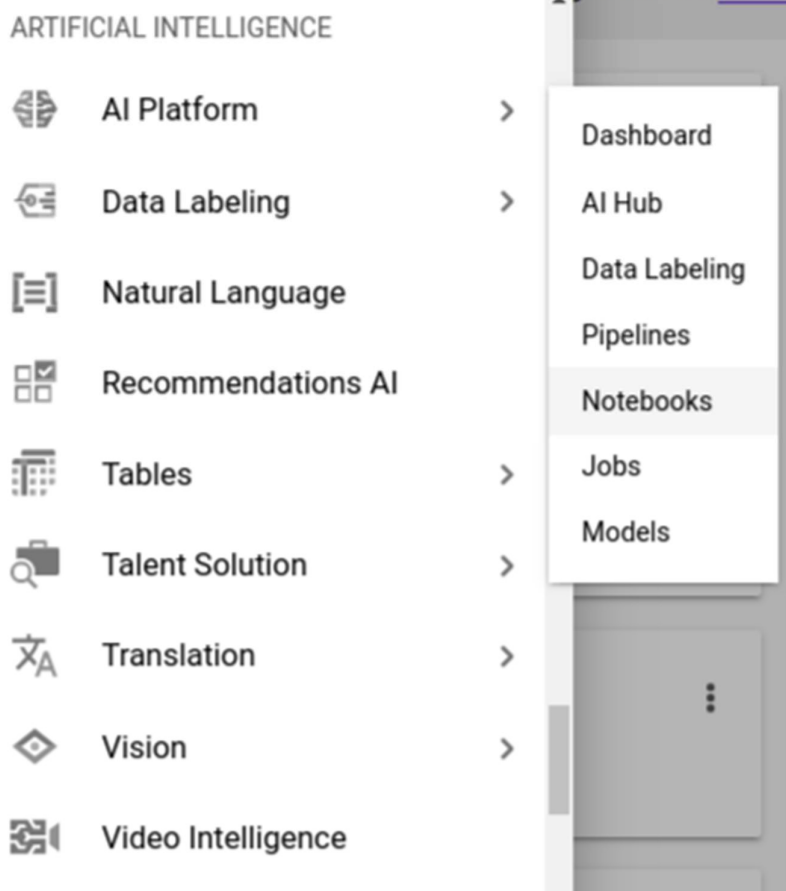
Note: If you already have your own personal Google Cloud account or project, do not use it for this lab.

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

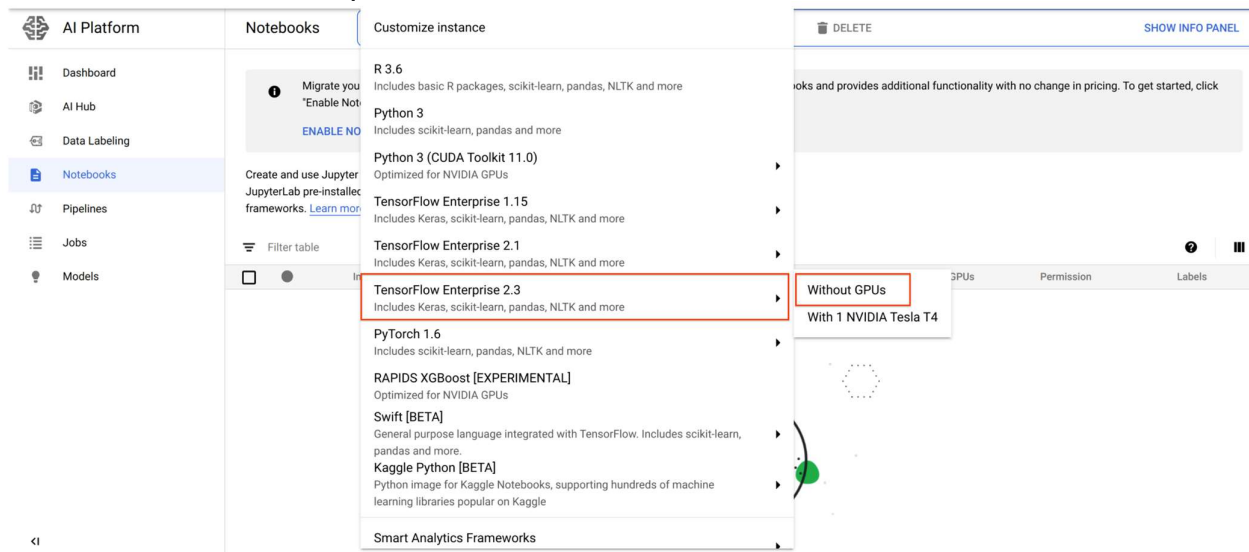
Launch AI Platform Notebooks

To launch AI Platform Notebooks:

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



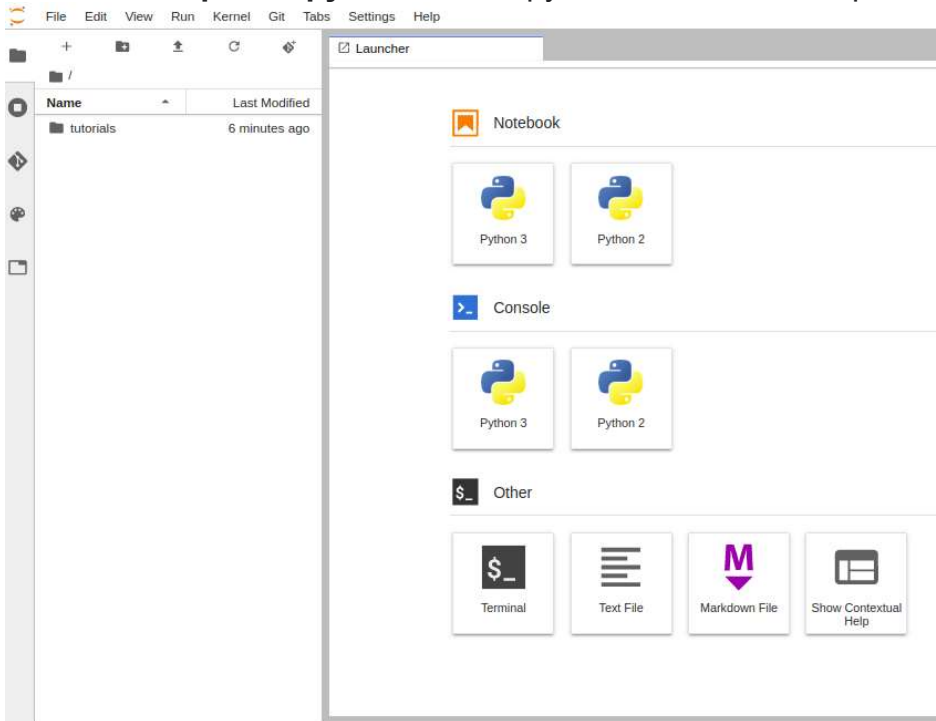
2. On the Notebook instances page, click **New Instance**. Select the latest version of TensorFlow Enterprise 2.x *Without GPUs*.



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.

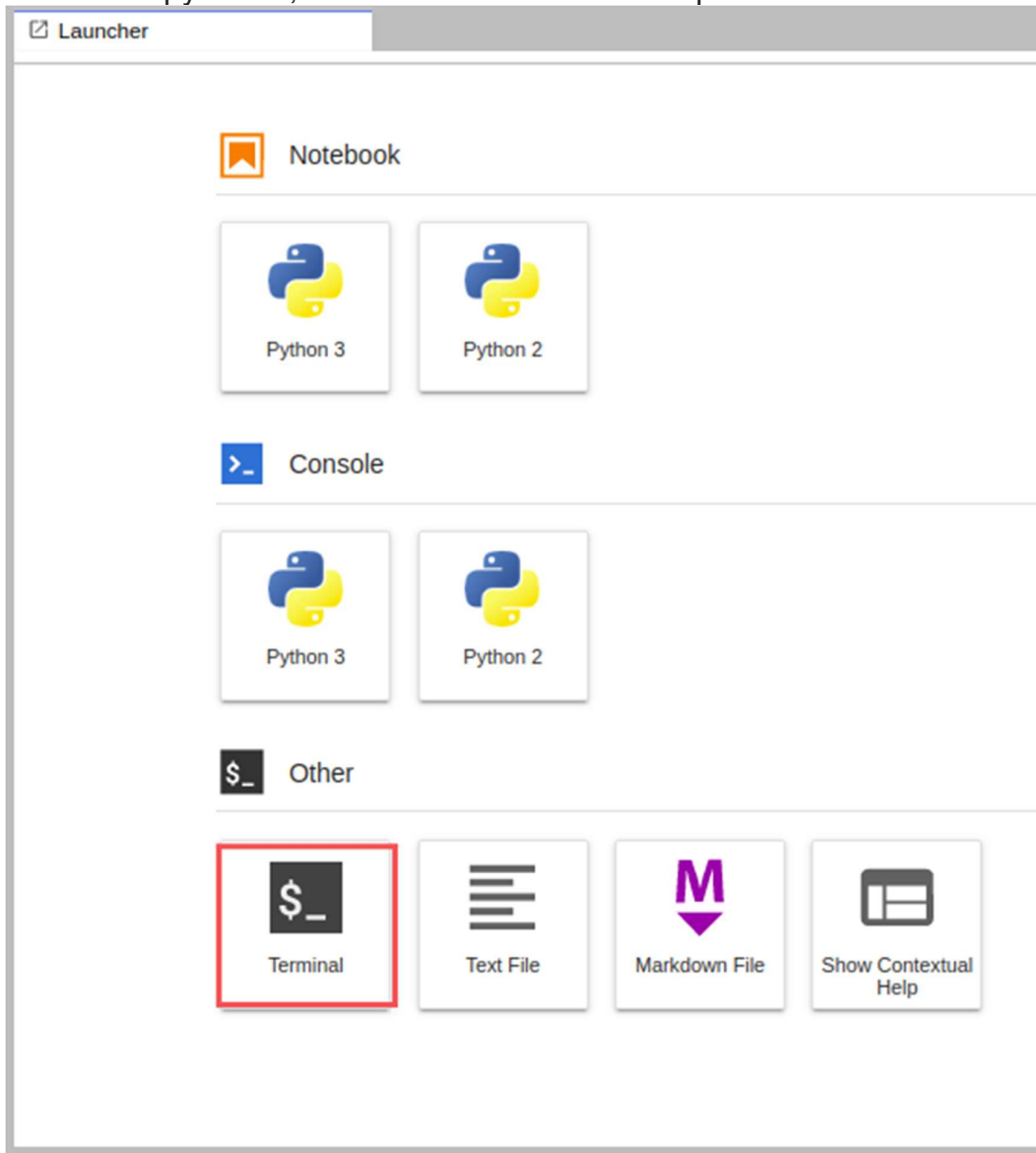
3. Click **Open JupyterLab**. A JupyterLab window will open in a new tab.



Clone the example repo within your AI Platform Notebooks instance

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

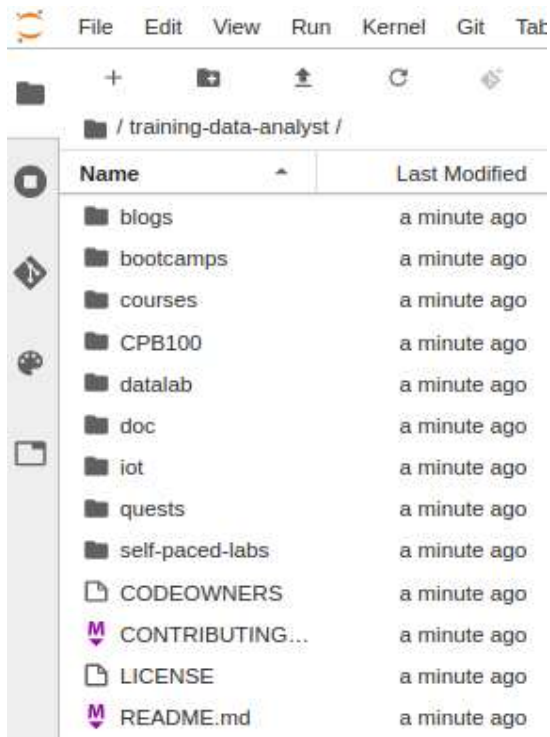
1. In JupyterLab, click the **Terminal** icon to open a new terminal.



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.



Navigate to the example notebook

In AI Platform Notebooks, navigate to `training-data-analyst/self-paced-labs/ai-platform-qwikstart` and open `ai_platform_qwik_start.ipynb`.

Clear all the cells in the notebook (look for the Clear button on the notebook toolbar) and then Run the cells one by one.

When prompted, come back to these instructions to check your progress.

Run your training job in the cloud

Test Completed Tasks - Step 3.1

Click **Check my progress** to verify your performed task.

Test Completed Task - Step 3.2

Click **Check my progress** to verify your performed task.

Test Completed Tasks - Step 3.3

Click **Check my progress** to verify your performed task.

Test your Understanding

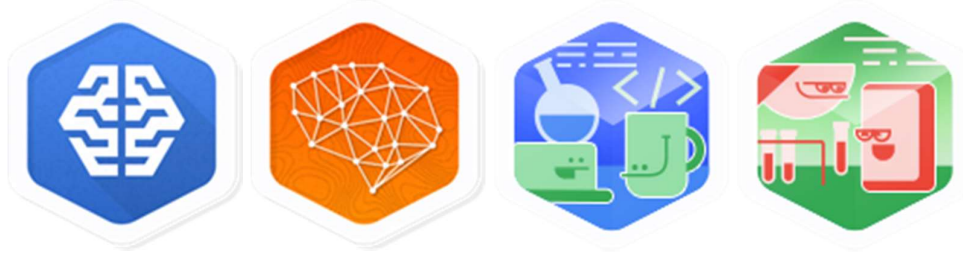
Below are a multiple choice questions to reinforce your understanding of this lab's concepts. Answer them to the best of your abilities.

A model version is an instance of a machine learning solution stored in the AI Platform model service.
True

AI Platform offers training jobs and batch prediction jobs.
True

Congratulations!

In this lab you've learned how to train a [TensorFlow](#) model both locally and on [AI Platform](#), and then how to use your trained model for prediction.



Google Cloud

**Explore Machine Learning Models
with Explainable AI**

SKILL

Finish your quest

This self-paced lab is part of the Qwiklabs [Machine Learning APIs](#), [Baseline: Data, ML, AI](#), [Intro to ML: Language Processing](#), [Intro to ML: Image Processing](#) and [Explore Machine Learning Models with Explainable AI](#) Quests. A Quest is a series of related labs that form a learning path. Completing a Quest earns you a badge to recognize your achievement. You can make your badge (or badges) public and link to them in your online resume or social media account. Enroll in a Quest and get immediate completion credit if you've taken this lab. [See other available Qwiklabs Quests](#).

Take your next lab

Try out another lab on Machine Learning APIs, like [Extract, Analyze, and Translate Text from Images with the Cloud ML APIs](#) or [Awwvision: Cloud Vision API from a Kubernetes Cluster](#).

This lab is also part of a series of labs called Qwik Starts. These labs are designed to give you a little taste of the many features available with Google Cloud. Search for "Qwik Starts" in the [lab catalog](#) to find the next lab you'd like to take!

Next steps

- Sign up for the full [Coursera Course on Machine Learning](#).
- Explore a wide range of [TensorFlow tutorials](#).
- You can read more about wide and deep models in the Google Research Blog post named [Wide & Deep Learning: Better Together with TensorFlow](#).
- Get your own [version of Tensorflow](#).

Google Cloud Training & Certification

...helps you make the most of Google Cloud technologies. [Our classes](#) include technical skills and best practices to help you get up to speed quickly and continue your learning journey. We offer fundamental to advanced level training, with on-demand, live, and virtual options to suit your busy schedule. [Certifications](#) help you validate and prove your skill and expertise in Google Cloud technologies.

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