**Assignment 1**

**PART II: Select an Operating System**

I have utilized Windows on both a personal and professional computer. I possess extensive knowledge and expertise in its functionality and can proficiently employ it to meet academic computer requirements. I can locate drivers, directories, and files. I am able to establish a remote SSH connection to Google Cloud Platform to operate within Visual Studio Code.

**PART III: Set Up Deep Learning Virtual Machine (VM) in GCP**

## SUBMISSION REQUIREMENT #2.1:

* Steps I took to set up the GCP Account.  
  **Step 1:** Navigate to https://cloud.google.com/free?hl=en Creation Homepage.  
  **Step 2:** Click on **Get Started for Free  
  Step 3:** It will redirect to the Sign-In page, Sign In with your **Gmail ID**.  
  **Step 4:** I have used the code from the email (where it says **Your code**) in the Google Cloud console under the **Coupon code**.  
  **Step 5:** I agree to the terms, click **Accept and continue**. The credit is added to my account in a Cloud Billing account named for the course it applies to.

Screenshot documenting that I have successfully set up a GCP Account. A screenshot of a computer

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***Steps I took to set up the GCP Project.***

**Step 1:  I make sure I am signed in to the correct GCA account.**

**Step 2: Click the project selector button**

**Step 3: Click the Create Project button and follow the instructions**

Project name and Project ID.  
Project name: ADTA5550DPLRN  
Project number:585032912289  
Project ID: adta5550dplrn  
  
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## *Steps I took to set up the remote server*

## ****Step 1:****start an instance by Starting the VM

## 

## ****Step 2:****Click the 'SSH' button next to your running instance and wait for several minutes.

## ****Step 3:** Run the following code**

## 

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## SUBMISSION REQUIREMENT #2.2:

**Step 1:** Download the Google Cloud CLI installer.

**Step 2:** Launch the installer and follow the prompts. A screenshot of a computer

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**Step 3:**  Initialize the SDK by using code >

**Step 4:** Update the SDK

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**PART IV: Connect and Explore Remote VM Using SSH**

1:Open an SSH connection from the local computer to the remote VM.  
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2 . Examining the contents of the home directory using the fundamental Linux command lines. And created a new sub-folder named “JPTR\_NTBK” under the home directory

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3. Navigate to the freshly created folder as the current directory.

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**PART V: Start and Connect to Jupiter Notebook in Remote VM**

4.1: In the remote virtual machine, launch the Jupyter Notebook server.

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4.2: **Connect** to the **Jupyter Notebook** server in the **remote** virtual machine (by connecting a Local Computer Port, i.e., 8000, to the Remote Server Port, i.e., 8888)

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4.3:**Use** Jupyter Notebook that is **currently running** in the **Remote Server** (in a browser on the local computer)

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Steps I took use Jupyter Notebook that runs in the remote virtual machine.

**Step 1:** SSH into VM

gcloud compute ssh biniamabebe@deep-learning-vm-example –project adta5550dplrn --zone us-south1-c

**Step 2:** Start the Jupyter Notebook

jupyter notebook --port=8888

**Step 3:**  Set Up SSH Tunneling

gcloud compute ssh biniamabebe@deep-learning-vm-example --project adta5550dplrn --zone us-south1-c -- -L 8000:localhost:8888

**Step 4:** Enter the URL to the browser   
 <http://localhost:8000>

**PART VI: Write Simple Python Code in Jupyter Notebook in Remote VM**

1. Create a vector (1D array) of size 20. All the elements are initialized with 0 (zero) except for the 8th element that is set with the value 8. A screenshot of a computer

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2. Create a vector of size 16 with random values ranging from 0 to 63, print the vector, then sort it and print the vector again. A screenshot of a computer program

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3. Create a 5x5 matrix with values ranging from 0 to 24. A screenshot of a computer

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4. Create an 8x8 array with random values, then find the min and max values stored in this matrix.|

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1. Create a vector of size 32 that is initialized with random values inside the range (0, 99) and then find the mean of all the initial values.A screenshot of a computer

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