Essential Mathematics for Machine Learning and AI

Module 3: **Vectors and Matrices**

What You will Need

To complete this lab, you will need the following:

- A Microsoft account (for example, an *outlook.com*, *live.com*, or *hotmail.com* address)

- A Microsoft Azure subscription

- A Windows, Linux, or Mac OS X computer

- The lab files for this course

Note: To set up the required environment for the lab, follow the instructions in the setup guide for this course.

Complete the Lab in Azure Notebooks

This lab is provided in a Jupyter notebook that you can upload to the Azure Notebooks in Azure Machine Learning Studio.

To Upload the Notebook

1. Open your browser and navigate to https://portal.azure.com, and sign in using your Microsoft account.
2. Create an Azure Machine Learning Workspace following the steps outlined in following guide (Select Portal in top right corner)
   - https://docs.microsoft.com/en-us/azure/machine-learning/how-to-manage-workspace
3. Once the Azure Machine Learning Workspace is created, open Machine Learning workspace and click "**Launch Studio**".

Manage your machine learning lifecycle

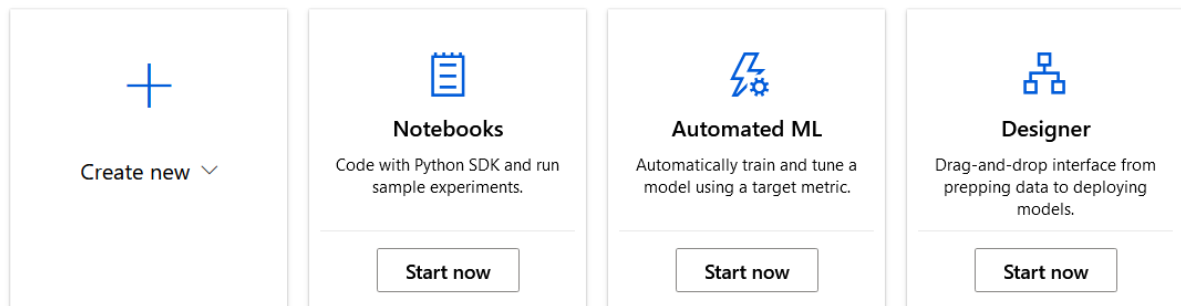Use the Azure Machine Learning studio to build, train, evaluate, and deploy machine learning models. Learn more ☑

Launch studio

Getting started quickly ☑
Join the community ☑

4. Click on **Start now** button under Notebooks.

Azure Machine Learning studio

+ Create new ∨	**Notebooks** Code with Python SDK and run sample experiments.	**Automated ML** Automatically train and tune a model using a target metric.	**Designer** Drag-and-drop interface from prepping data to deploying models.
	Start now	Start now	Start now

5. Select upload files button and navigate to the relevant notebook (from "*03-01-Vectors.ipynb*" to "*03-05-Transformations Eigenvectors and Eigenvalues.ipynb*") file in the **Module03** folder inside the "**Lab Files**" folder. Then click **Open**.
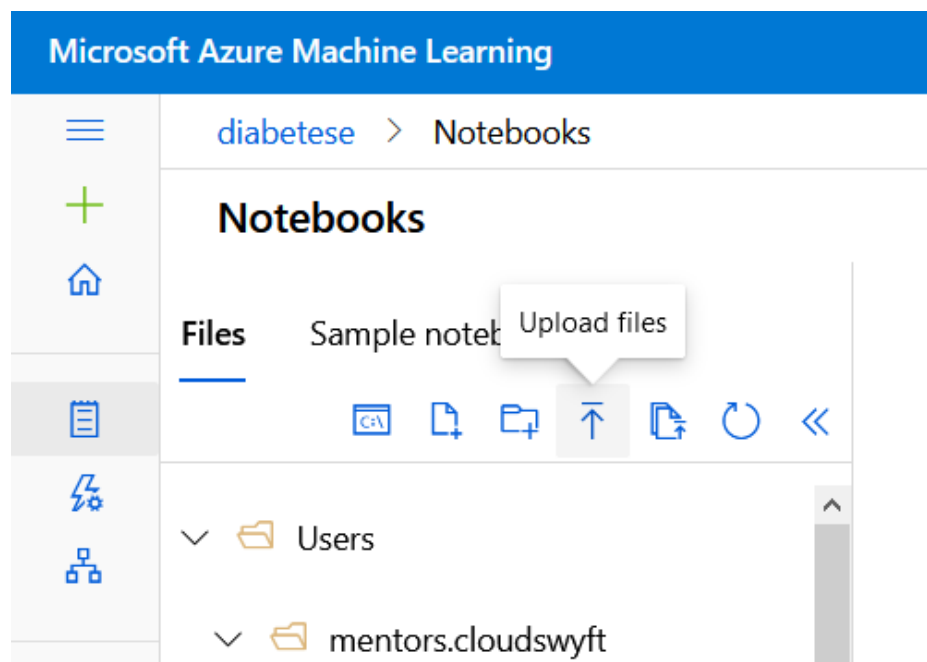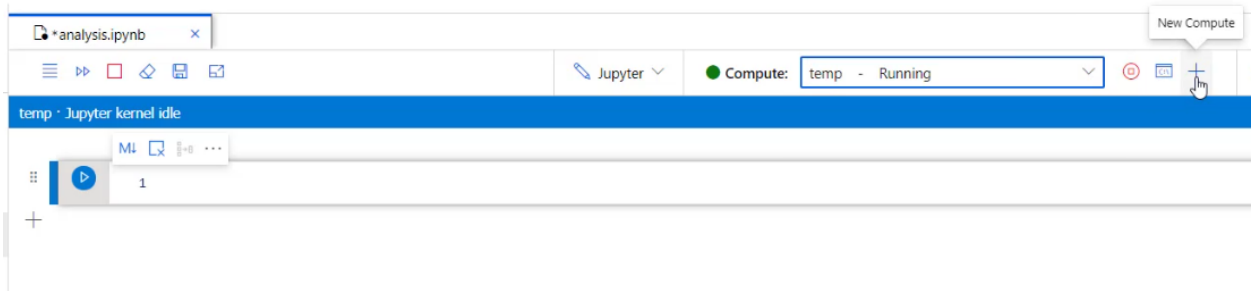

6. In the box that pops up check **I trust content of the file** box and click **Upload**.

7. When the file has been uploaded, open it.

Note: steps 8 - 10 are required only once to create the compute

8. click on **+** icon to create a new compute. (Note: You need to do this only if you do not already have created a compute)
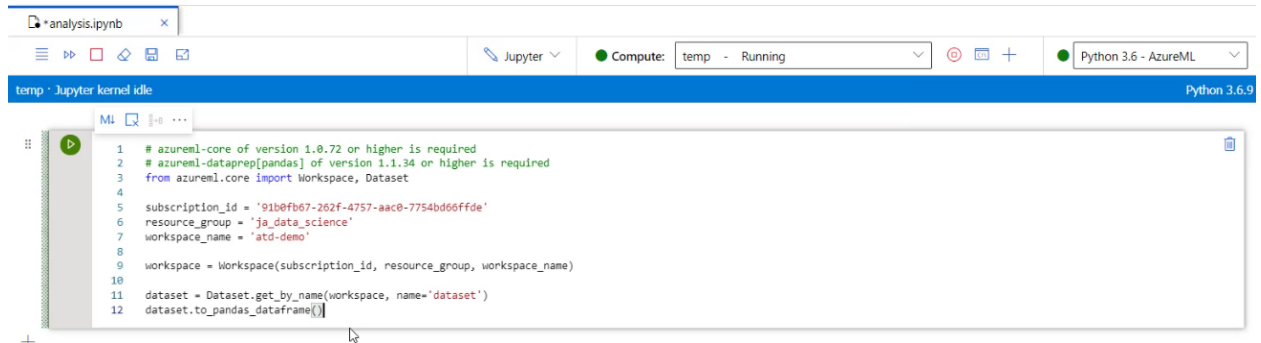

9. Enter compute name and click create as show in following image:

10. Wait for compute to get created. (If you have already created compute on your azure, you can use that)

11. Select the Python 3.6 – AzureML in the top right drop box as shown:

12. Now follow the instructions in notebook. You can run the code in the shell by clicking on green play button on top-left of the shell.