Essential Mathematics for Machine Learning and AI

Module 2: **Differential Calculus**

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,](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 "*02-01-Rate of Change.ipynb*" to "*02-06-Integration.ipynb*") file in the **Module02** folder inside the "**Lab Files**" folder. Then click **Open**.
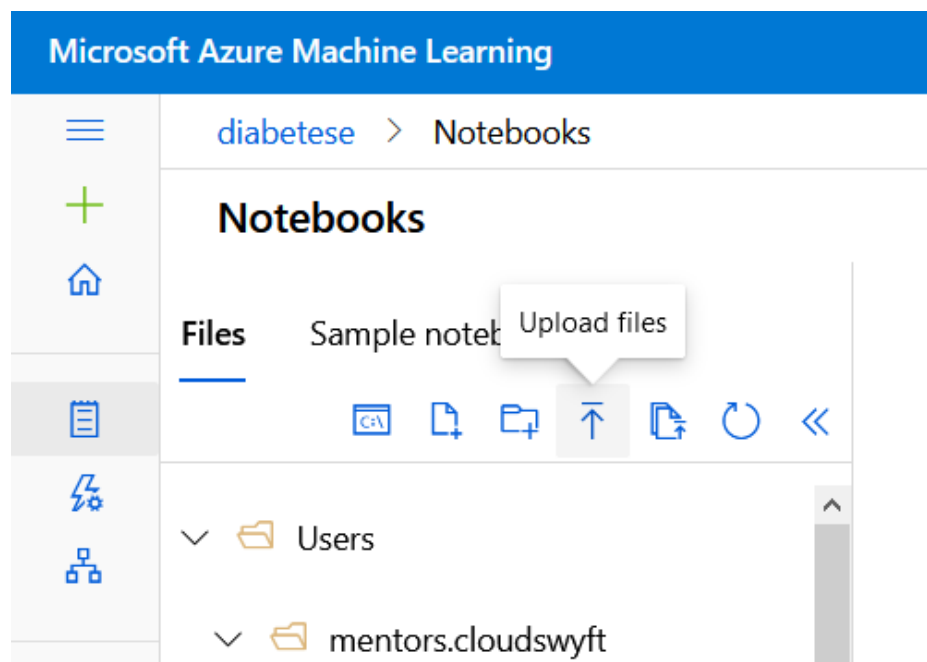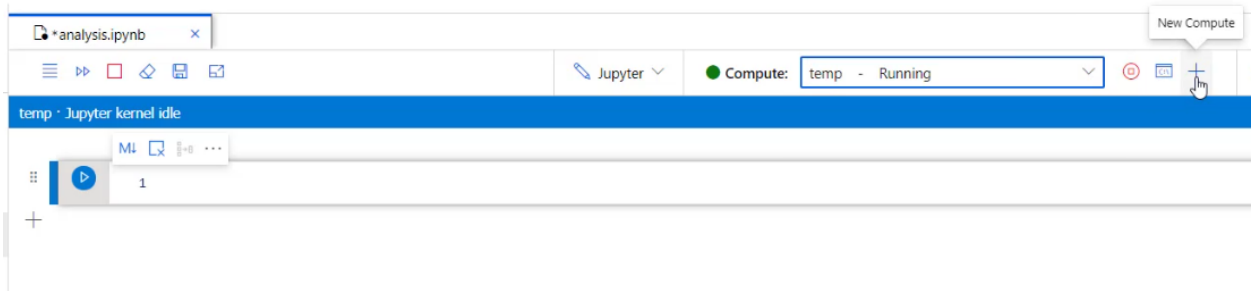

6. In the box that pops up check **I trust content of the file** box and click **Upload**.

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)
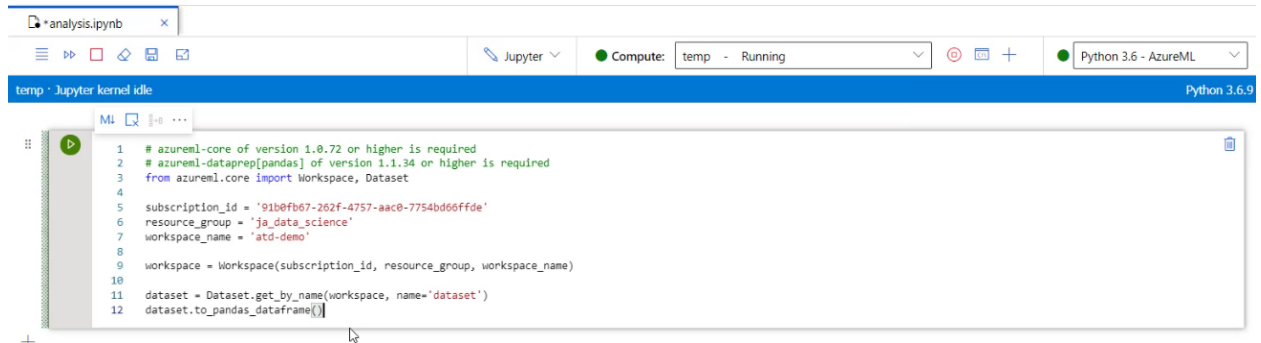

9. Enter compute name and click create as show in following image:

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.