Centre For Innovation

SHAASTRA

ENVISAGE - WHERE TECHNOLOGY MEETS ENTERTAINMENT

SUMMER TRAINING

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Installing Jupyter Notebook

Method-1 : Using the Cloud

1. Google Colabs - https://colab.research.google.com/ or
2. Kaggle - https://www.kaggle.com/

Method-2 : Using Terminal Shell

1. For Linux (sudo apt-get) / Mac (brew) users, open your terminal and enter the following command accordingly

   ```
   sudo apt-get install git python jupyter
   ```

   or

   ```
   brew install git python jupyter
   ```

2. Once installed run the following command to download necessary python packages

   ```
   pip install matplotlib numpy pandas scipy
   ```

3. For Windows users, open PowerShell as Administrator and enter the following

   ```
   Set-ExecutionPolicy RemoteSigned -Scope CurrentUser
   ```

4. Input Y and press Enter when prompted to confirm the execution policy change.

5. Next, run the following command to download Scoop's installer script (get.scoop.sh) and run that script to install Scoop on your system with elevated privileges (-RunAsAdmin).

```
Invoke-Expression "& {$(Invoke-RestMethod get.scoop.sh)} -RunAsAdmin"
```

6. Run the following command to check whether scoop was installed successfully

```
scoop -h
```

7. Now use scoop to install python and jupyter by running the commands

```
scoop install git python jupyter
```

8. Once installed run the following command to download necessary python packages

```
pip install matplotlib numpy pandas scipy
```

9. Start the jupyter notebook by executing the following command

```
jupyter notebook
```

Method-3 : Using code editors

1. Download an editor like VS Code from https://code.visualstudio.com/ or Atom from https://atom-editor.cc/
2. Open a new terminal (bash or zsh) window inside the editor
3. Follow the step-1 and step-2 of Method-2
4. Install the necessary extensions related to python and jupyter notebooks
5. Create a new ".ipynb" file or open an existing one

Introduction to Jupyter Notebook

The two major types of cells in the jupyter notebook are called "code" and "markdown". You can click on a cell and use the menu options to convert cells of one type to another. Use the cells of type "code" to type in your python code. Use the cells of type "markdown" to type in your documentation.

Cells of type "code" will get numbered chronologically as you keep entering new ones. You can delete cells and move them up and down as needed. Whenever you open a notebook to continue working from your previous sitting, make sure you "run all the cells" using the menu option under "cells" to ensure all the variables etc., are available in the memory. You don't have to worry about this as long as you continue working on the notebook without closing it.

Jupyter will save your notebook once a while. It is a good idea to click on the save button and name the file meaningfully. The files will be with an ending ".ipynb" which are pure text files. You can open them using the vim editor in a terminal (Linux/Mac) or using VS Code (Windows) and edit if you need to. Don't do it unless you are sure of the syntax. Look at the last few lines of this file, you will notice metadata that says what language of script is being stored in the cells of that file etc.

You can share the "ipynb" files to share your notebooks with others. The format is fairly universal and will work on most machines without any change. Sometimes if the corresponding language is not installed, the notebook file will still show the content but may not be able to let you modify it.

To Be Noted

Rest of the material is provided in the attached jupyter notebook files (.ipynb). Please go through them and write your own code for practice.

GitHub link - https://github.com/Bhakna/Env13_python_files

Also, be advised that this material is only an introduction to Python and its important features. For more information, please go through the documentation of the respective Python library.

Basic Python - https://docs.python.org/3/tutorial/index.html

Matplotlib - https://matplotlib.org/stable/index.html

Numpy - https://numpy.org/doc/stable/

Scipy - https://docs.scipy.org/doc/scipy/