Computer Science Lab 2 (CS083)

Introduction to Jupyter Lab/Notebook

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Github

Overview

This document is aimed at instructing students while they are undertaking their lab 2 work.

Lab 2 work is presenting use of the JupyterLab/Jupyter Notebook.

JupyterLab is the latest web-based interactive development environment for notebooks, code, and data. Its flexible interface allows users to configure and arrange workflows in data science, scientific computing, computational journalism, and machine learning. A modular design invites extensions to expand and enrich functionality.

Students should use these guidelines to attain an introduction to JupyterLab/Jupyter Notebook.

Important Link

- Official Website of Jupyter
- Jupyter Project Documentation
- Try Jupyter Lab on browser
- Try Jupyter Notebook on browser
- Jupyter Shortcut Key Cheat Sheet
- Blog on Jupyter Notebook

Creating Your First Sheet

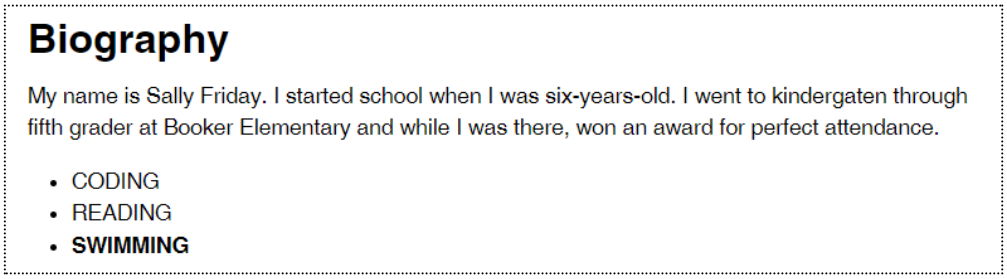
Instructions:

1. Firstly open the Jupyter notebook by searching on the search bar
2. Don't use the mouse and see if you can do it. You have all the power in the world on the keyboard!
3. Create the following cells

Exercise 1:

1. Create a cell underneath (use keyboard please)
2. Create a header called "**Biography**"
3. Write a little bit about yourself
4. Include an **unordered bulleted list** of all the technologies and skills that you have
5. For the skills that you are an expert in, make that in **bold**.

For Example:



Exercise 2:

1. Create a cell underneath (use keyboard please)
2. Use LATEX to create mathematical equations given below:

$x^2 + 2x + 3$, πr^2, $\sqrt[n]{x}$, $\prod_{k=1}^{n}$, $tan\theta = \frac{sin\theta}{cos\theta}$,

$a_1x + b_1y + c_1$
$a_2x + b_2y + c_2$,
$F_e = \frac{kq_1q_2}{r^2}$,
$A \cap \phi = \phi$

$n(A \cup B) = n(A) + n(B) - n(A \cap B)$,
$R_p = \frac{R_1 + R_2}{R_1 R_2}$

Exercise 3:

1. Create a cell underneath (use keyboard please)
2. Import **pandas** in the standard convention
3. Create a **DataFrame** from the file located in `../data/characters.csv`, this will contain all the characters from the Harry Potter Universe. The data is separated by a `;` so use tooltips to figure out how to stipulate a separator.
4. Assign the `DataFrame` to a variable called `characters`

```
import pandas as pd

characters = pd.read_csv('../data/characters.csv', sep=';')
characters
```

Exercise 4:

1. Let's find all the Slytherin!
2. Create a cell underneath this cell
3. Type: characters.House == 'Slytherin'` or `characters['House'] == 'Slytherin'`
4. Notice the Results

```
characters.House == 'Slytherin'
```

Exercise 5:

1. Let's mask this data so we only see the Slytherin
2. Create a cell underneath this cell
3. Type: characters[characters.House == 'Slytherin']
4. This process is called masking

```
characters[characters.House == 'Slytherin']
```