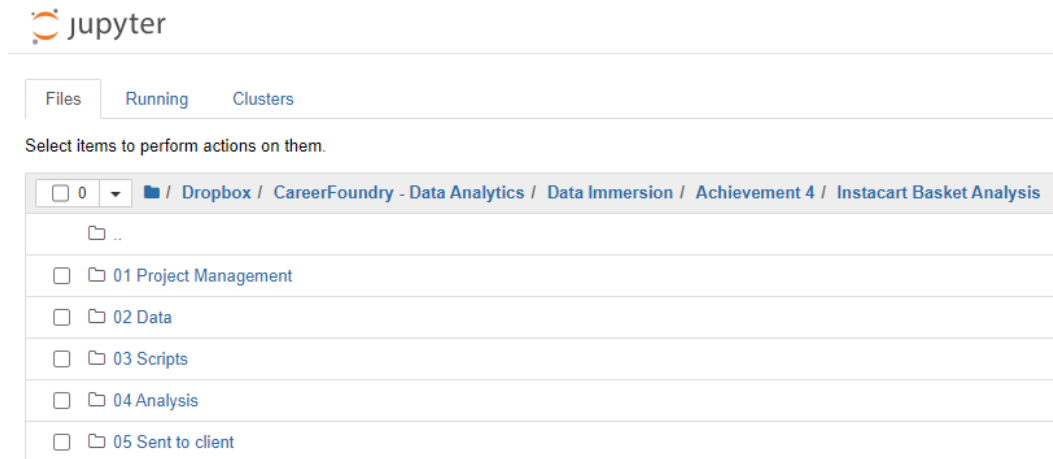
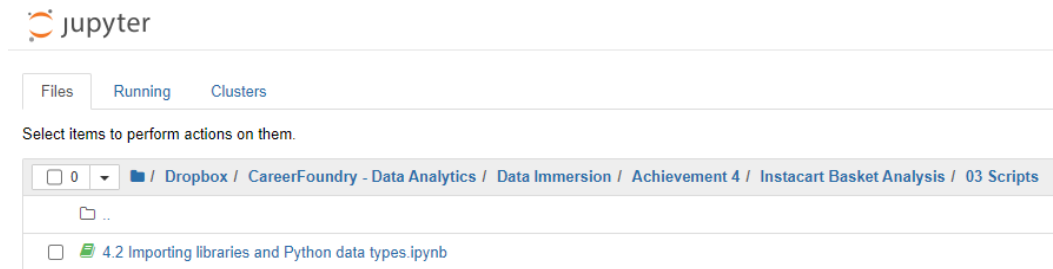


1. Create a folder for your Achievement 4 project following the structure recommended in this Exercise.



a.

2. Within your “Scripts” folder, create a Jupyter notebook for this Exercise and name it according to the recommended naming convention.



a.

3. Install the pandas and NumPy libraries using your command prompt (Anaconda Prompt for PC, Terminal for Mac).

```

Anaconda Prompt
(base) C:\>conda install pandas numpy
Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##
  environment location: C:\Users\duongxma\AppData\Local\anaconda3

added / updated specs:
- numpy
- pandas

The following packages will be downloaded:

```

| package         | build           | size   |
|-----------------|-----------------|--------|
| boltons-23.0.0  | py310haa95532_0 | 425 KB |
| conda-23.3.1    | py310haa95532_0 | 983 KB |
| jsonpatch-1.32  | pyhd3eb1b0_0    | 15 KB  |
| jsonpointer-2.1 | pyhd3eb1b0_0    | 9 KB   |
| Total:          |                 | 1.4 MB |

```

The following NEW packages will be INSTALLED:
  boltons      pkgs/main/win-64::boltons-23.0.0-py310haa95532_0
  jsonpatch    pkgs/main/noarch::jsonpatch-1.32-pyhd3eb1b0_0
  jsonpointer  pkgs/main/noarch::jsonpointer-2.1-pyhd3eb1b0_0

The following packages will be UPDATED:
  conda        23.1.0-py310haa95532_0 --> 23.3.1-py310haa95532_0

Proceed ([y]/n)? Y

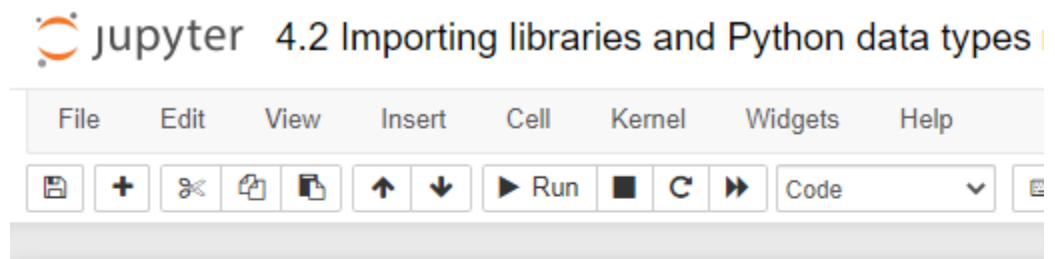
Downloading and Extracting Packages
Preparing transaction: done
Verifying transaction: done
Executing transaction: done

(base) C:\>

```

a.

4. Add a section header to your notebook for importing libraries.
  - a. See screenshot in Step 6.
5. In the cell beneath the section header, import the pandas, NumPy, and os libraries. Ensure you include a comment in your code.
  - a. See screenshot in Step 6.
6. Add a second section header to your notebook for working with Python data types.



## # 01. Importing libraries

```
In [1]: #Import Libraries
import pandas as pd
import numpy as np
import os
```

## # 02. Data types

a.

7. Code 3 different ways of reaching a result of 100 by adding or subtracting numeric variables.

```
In [26]: x = 99
```

```
In [27]: x + 1
```

```
Out[27]: 100
```

```
In [28]: y = 101
```

```
In [29]: y - 1
```

```
Out[29]: 100
```

```
In [32]: y - x + 98
```

```
Out[32]: 100
```

a.

8. Code 2 floating-point variables and divide them by each other.

```
In [33]: w = 5.4321
```

```
In [34]: v = 1.2345
```

```
In [35]: w / v
```

```
Out[35]: 4.400243013365736
```

a.

9. Construct a short word made of separate strings (you'll need to concatenate some strings!).

```
In [36]: u = 'Min'
```

```
In [37]: t = 'dy'
```

```
In [38]: u + t
```

```
Out[38]: 'Mindy'
```

a.

10. Construct 2 short sentences made of separate strings.

```
In [39]: a = 'Hello, '
```

```
In [46]: b = 'my name '
```

```
In [41]: c = 'is Mindy. '
```

```
In [48]: d = 'How '
```

```
In [49]: e = 'are '
```

```
In [44]: f = 'you?'
```

```
In [50]: a + b + c + d + e + f
```

```
Out[50]: 'Hello, my name is Mindy. How are you?'
```

a.

11. Save your Jupyter file by clicking on the **Save** icon highlighted below:

12. Locate your project folder on your device, compress it as a zip file (right-click the folder and select **Add to Archive**), then submit the zip file for your tutor to review.