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Foundations of Programming: Python

Assignment 05

[GitHubURL](#)

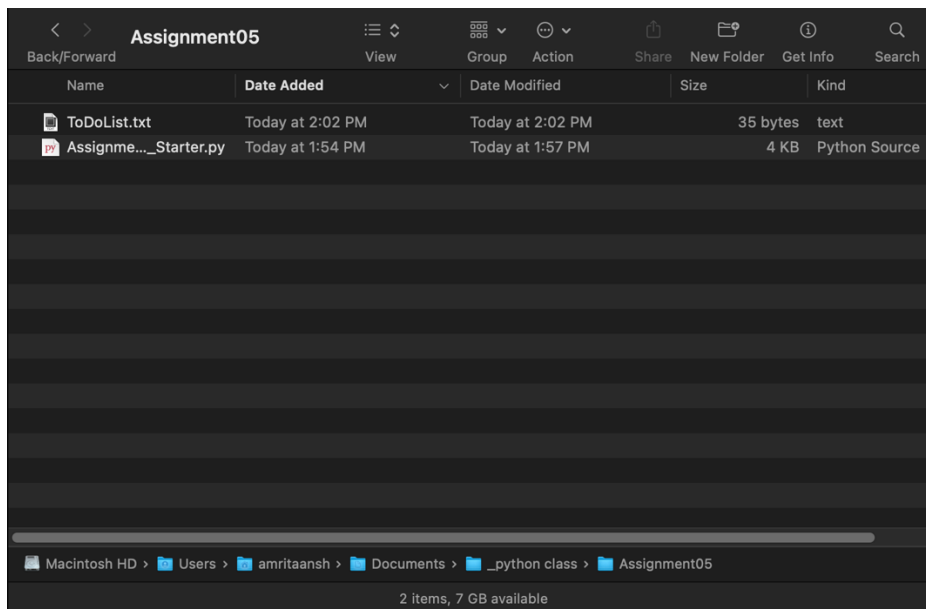
## **Working with Dictionaries:**

### **Introduction:**

This paper aims to demonstrate the steps I undertook to create a python script that enables a user to modify a new script that manages a "ToDo list". The latest version of PyCharm Community version is used for this assignment on a Mac OS.

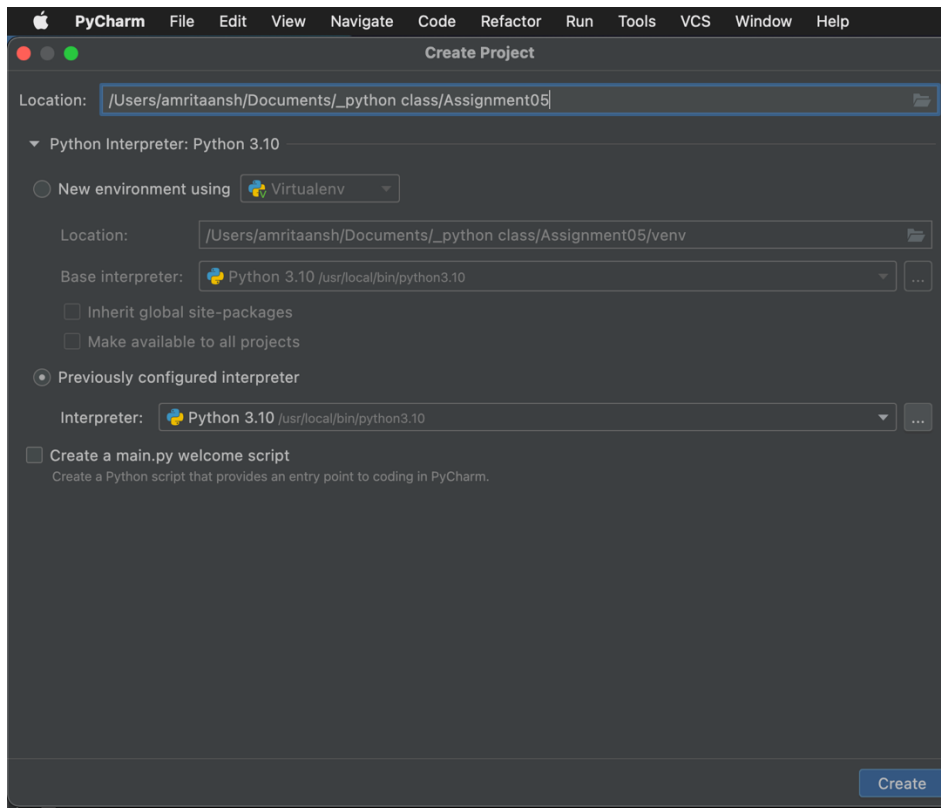
### **Writing the python script and output:**

Create a new sub-folder called Assignment05 inside of the \_PythonClass folder (you created in Module 01) in the Documents folder on a Mac OS.



**Figure 1. Assignment05 saved as a subfolder inside the folder \_PythonClass in Documents.**

Create a new project in PyCharm that uses the `_PythonClass\Assignment05` folder as its location.

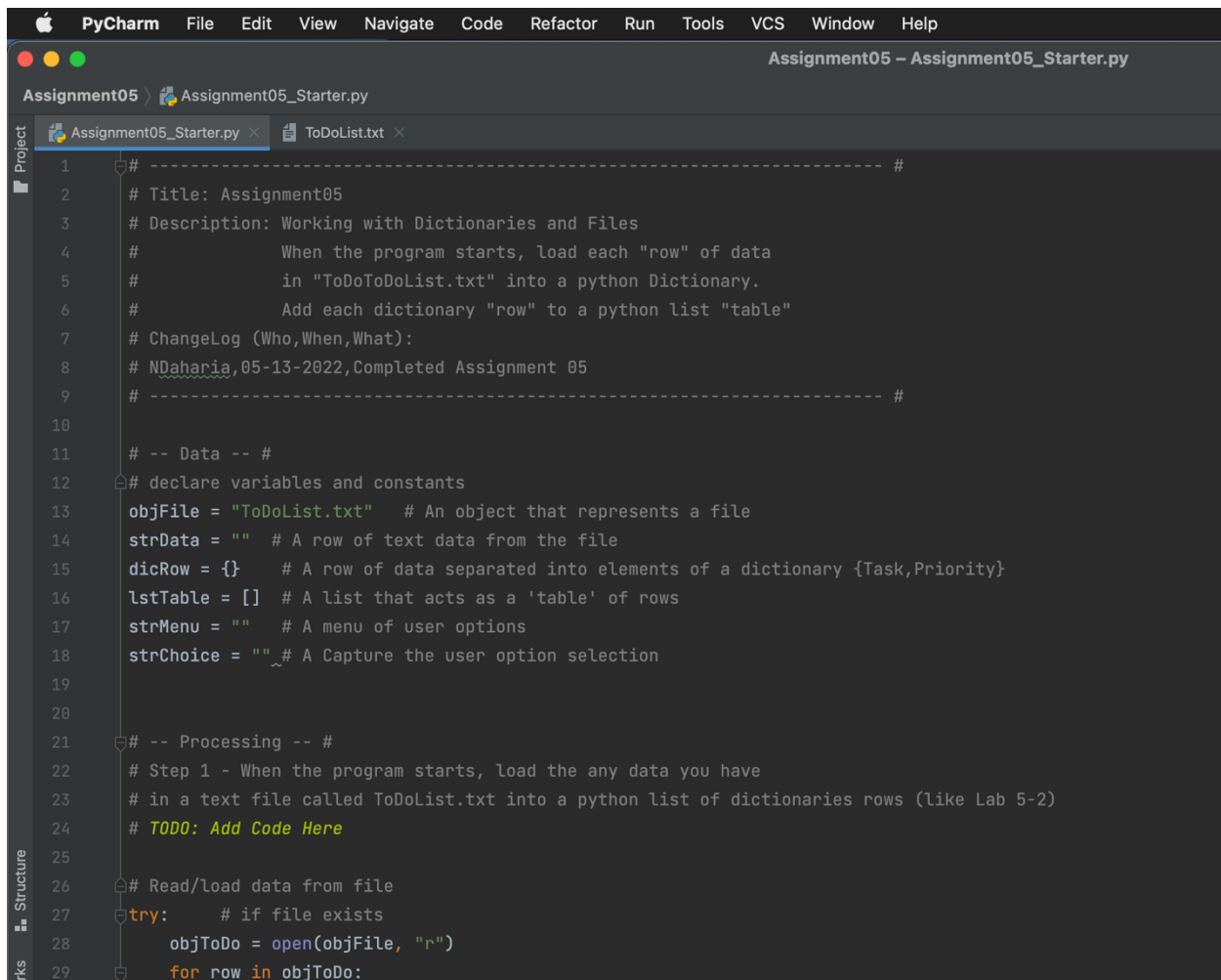


**Figure 2. Creation of a new project in PyCharm**

Modify the Python Script provided "Assignment05\_Starter.py". The starter script already provides us with 5 options for the menu. Add code to the Script that enables a user to modify a new script that manages a "ToDo list." The "ToDo" file will contain two columns of data, "Task" and "Priority." The columns will be loaded into a Python Dictionary object. Each dictionary object represents one row of data, and these rows must be added to a Python List object to create a table of data.

Choosing `strChoice.strip() == 1`, if it is true, then it runs for a loop through the list `1sTable`. For each row in the table, it prints out the first and second value from the dictionary row. If `strChoice.strip() == 2`, the user can choose to add a task and the priority of this task. If `strChoice.strip() == 3`, the user is choosing to remove an existing

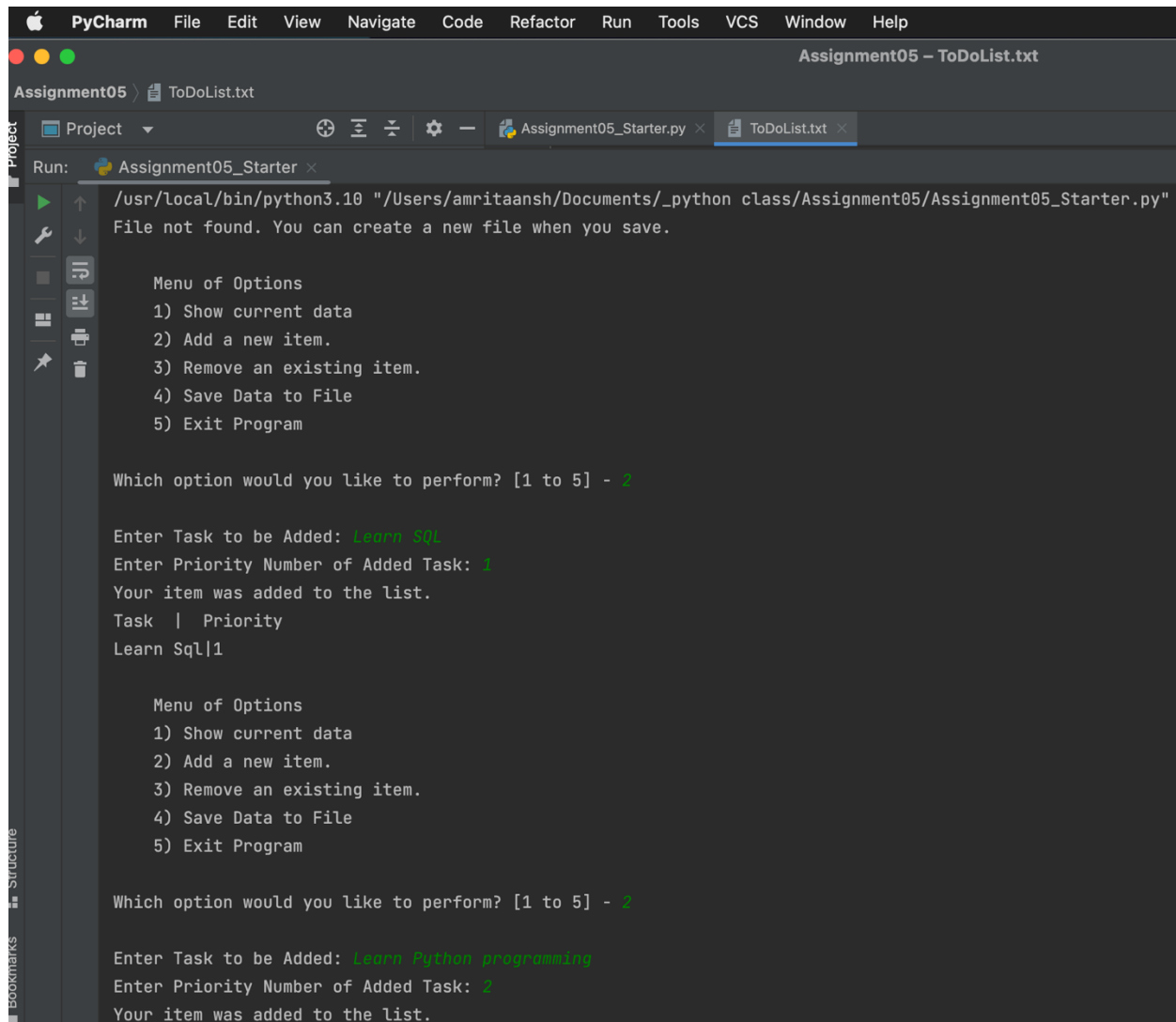
row from the table. Using `strChoice.strip() == 4`, the user can save this data after they are done will making all the changes. Lastly, `strChoice.strip() == 5`, the user can exit the program.



```
1 # ----- #
2 # Title: Assignment05
3 # Description: Working with Dictionaries and Files
4 #           When the program starts, load each "row" of data
5 #           in "ToDoToDoList.txt" into a python Dictionary.
6 #           Add each dictionary "row" to a python list "table"
7 # ChangeLog (Who,When,What):
8 # NDaharia,05-13-2022,Completed Assignment 05
9 # ----- #
10
11 # -- Data -- #
12 # declare variables and constants
13 objFile = "ToDoList.txt" # An object that represents a file
14 strData = "" # A row of text data from the file
15 dicRow = {} # A row of data separated into elements of a dictionary {Task,Priority}
16 lstTable = [] # A list that acts as a 'table' of rows
17 strMenu = "" # A menu of user options
18 strChoice = "" # A Capture the user option selection
19
20
21 # -- Processing -- #
22 # Step 1 - When the program starts, load the any data you have
23 # in a text file called ToDoList.txt into a python list of dictionaries rows (like Lab 5-2)
24 # TODO: Add Code Here
25
26 # Read/load data from file
27 try: # if file exists
28     objToDo = open(objFile, "r")
29     for row in objToDo:
```

**Figure 3. Snippet of the python script Assignment05\_Starter.py**

Run the Script by right clicking on the file and choosing Run.



```
PyCharm File Edit View Navigate Code Refactor Run Tools VCS Window Help
Assignment05 - ToDoList.txt
Assignment05 > ToDoList.txt
Project
Run: Assignment05_Starter
/usr/local/bin/python3.10 "/Users/amritaansh/Documents/_python class/Assignment05/Assignment05_Starter.py"
File not found. You can create a new file when you save.

Menu of Options
1) Show current data
2) Add a new item.
3) Remove an existing item.
4) Save Data to File
5) Exit Program

Which option would you like to perform? [1 to 5] - 2

Enter Task to be Added: Learn SQL
Enter Priority Number of Added Task: 1
Your item was added to the list.
Task | Priority
Learn Sql|1

Menu of Options
1) Show current data
2) Add a new item.
3) Remove an existing item.
4) Save Data to File
5) Exit Program

Which option would you like to perform? [1 to 5] - 2

Enter Task to be Added: Learn Python programming
Enter Priority Number of Added Task: 2
Your item was added to the list.
```

**Figure 4.** Snippet of output displayed in PyCharm Shell after running the python script.

Run the script on the Terminal window

```
Terminal Shell Edit View Window Help
python class cd Assignment05
Assignment05 ls
Assignment05 Starter.py ToDoList.txt
Assignment05 python3 Assignment05_Starter.py

Menu of Options
1) Show current data
2) Add a new item.
3) Remove an existing item.
4) Save Data to File
5) Exit Program

Which option would you like to perform? [1 to 5] - 2

Enter Task to be Added: Learn SQL
Enter Priority Number of Added Task: 1
Your item was added to the list.
Task | Priority
Learn Sql|1
Learn Python Programming|2
Learn Data Visualization Tools|3
Create Github Portfolio|4
Learn Sql|1

Menu of Options
1) Show current data
2) Add a new item.
3) Remove an existing item.
4) Save Data to File
5) Exit Program

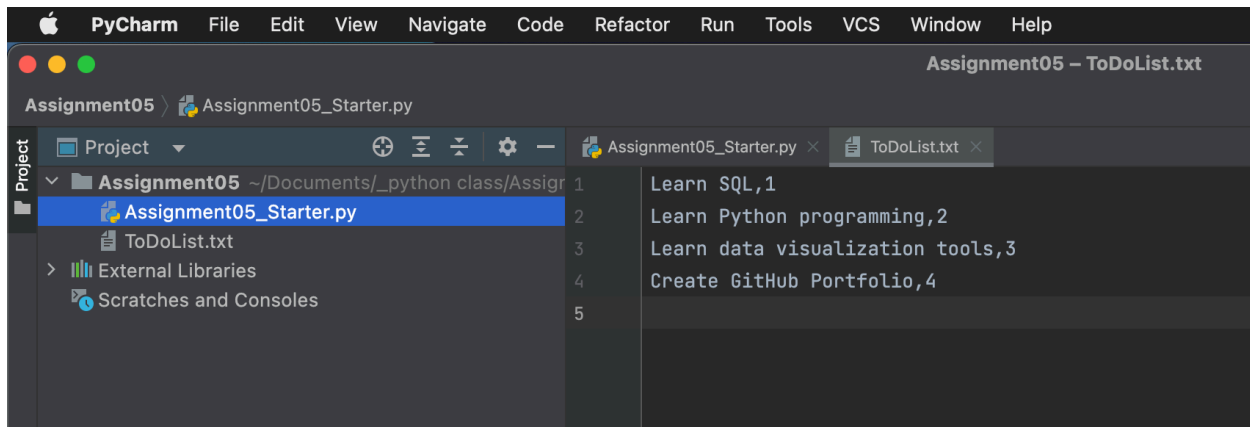
Which option would you like to perform? [1 to 5] - 2

Enter Task to be Added: Learn Python programming
Enter Priority Number of Added Task: 2
Your item was added to the list.
Task | Priority
Learn Sql|1
Learn Python Programming|2
Learn Data Visualization Tools|3
Create Github Portfolio|4
Learn Sql|1
Learn Python Programming|2

Menu of Options
1) Show current data
2) Add a new item.
3) Remove an existing item.
4) Save Data to File
5) Exit Program
```

**Figure 5.** Output displayed in Terminal window after running the python script.

Verify that it code worked by locating the text file and opening it in a text editor.



**Figure 6.** *ToDoList.txt* Window updated the saved value of toaster as entered by the user.

## Summary:

Python is a simple yet powerful language programming language that runs on Windows, Linus/Unix, and Mac OS. I used PyCharm to create a python script that script that enables a user to modify a new script that manages a "ToDo list". The script was run both in PyCharm and Terminal . Finally, the code was verified by locating the ToDoList.txt text file and opening it in a text editor and it successfully updated the list saved by the user.