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Foundations of Programming (Python)

Assignment 06

To do List Python Script (functions)

Introduction

This assignment is about adding code using functions to a given Python script that performs different actions from a list of menu. The program works on an existing text file and adds new data to the file, deletes entries, saves the information in the text file, and exits the program.

Creating the Python Script

1. Adding data. Append the data to the dictionary.

```
def add_data_to_list(task, priority, list_of_rows):
    """ Adds data to a list of dictionary rows

    :param task: (string) with name of task:
    :param priority: (string) with name of priority:
    :param list_of_rows: (list) you want filled with file data:
    :return: (list) of dictionary rows
    """
    row = {"Task": str(task).strip(), "Priority":
str(priority).strip()}
    # TODO: Add Code Here!
    list_of_rows.append(row)
    return list_of_rows
```

2. Removing data. Using the “if” functions, match the name of the task to be removed to existing entries, if there is a match, the value will be removed, if not, the menu will be shown to the user.

```
def remove_data_from_list(task, list_of_rows):
    """ Removes data from a list of dictionary rows

    :param task: (string) with name of task:
    :param list_of_rows: (list) you want filled with file data:
    :return: (list) of dictionary rows
    """
    # TODO: Add Code Here!
    for row in list_of_rows:
        if row["Task"].lower() == task.lower():
```

```
            list_of_rows.remove(row)
    return list_of_rows
```

3. Writting to file. To write the changes made by the user to the text file file.write function is used calling the “task” and the “priority” keys.

```
def write_data_to_file(file_name, list_of_rows):
    """ Writes data from a list of dictionary rows to a File

    :param file_name: (string) with name of file:
    :param list_of_rows: (list) you want filled with file data:
    :return: (list) of dictionary rows
    """
    # TODO: Add Code Here!
    file = open(file_name, "w")
    for row in list_of_rows:
        file.write(row["Task"] + "," + row["Priority"] + "\n")
    file.close()
    return list_of_rows
```

4. Input data. Ask the user for the name of the task and the priority.

```
def input_new_task_and_priority():
    """  Gets task and priority values to be added to the list

    :return: (string, string) with task and priority
    """
    pass  # TODO: Add Code Here!
    task = str(input("Input new task name:")).strip()
    priority = str(input("Input the priority of the new
task:")).strip()
    return task, priority
```

5. Input data to be removed. Ask the user for the name of the task and the priority.

```
def input_task_to_remove():
    """  Gets the task name to be removed from the list

    :return: (string) with task
    """
    pass  # TODO: Add Code Here!
    task = str(input("What is the name of the task to be
removed?:")).strip()
    print()
    return task
```

```
C:\Users\Parke\_PythonClass\Assignment06>Python.exe Assigment06_updated.py
******* The current tasks ToDo are: *******
groceries (high)
pay phone bill (low)
call plumber (medium)
*****************************************


        Menu of Options
        1) Add a new Task
        2) Remove an existing Task
        3) Save Data to File
        4) Exit Program


Which option would you like to perform? [1 to 4] - 1

Input new task name:test
Input the priority of the new task:low
******* The current tasks ToDo are: *******
groceries (high)
pay phone bill (low)
call plumber (medium)
test (low)
*****************************************


        Menu of Options
        1) Add a new Task
        2) Remove an existing Task
        3) Save Data to File
        4) Exit Program


Which option would you like to perform? [1 to 4] - 2

What is the name of the task to be removed?:test

******* The current tasks ToDo are: *******
groceries (high)
pay phone bill (low)
call plumber (medium)
*****************************************
```

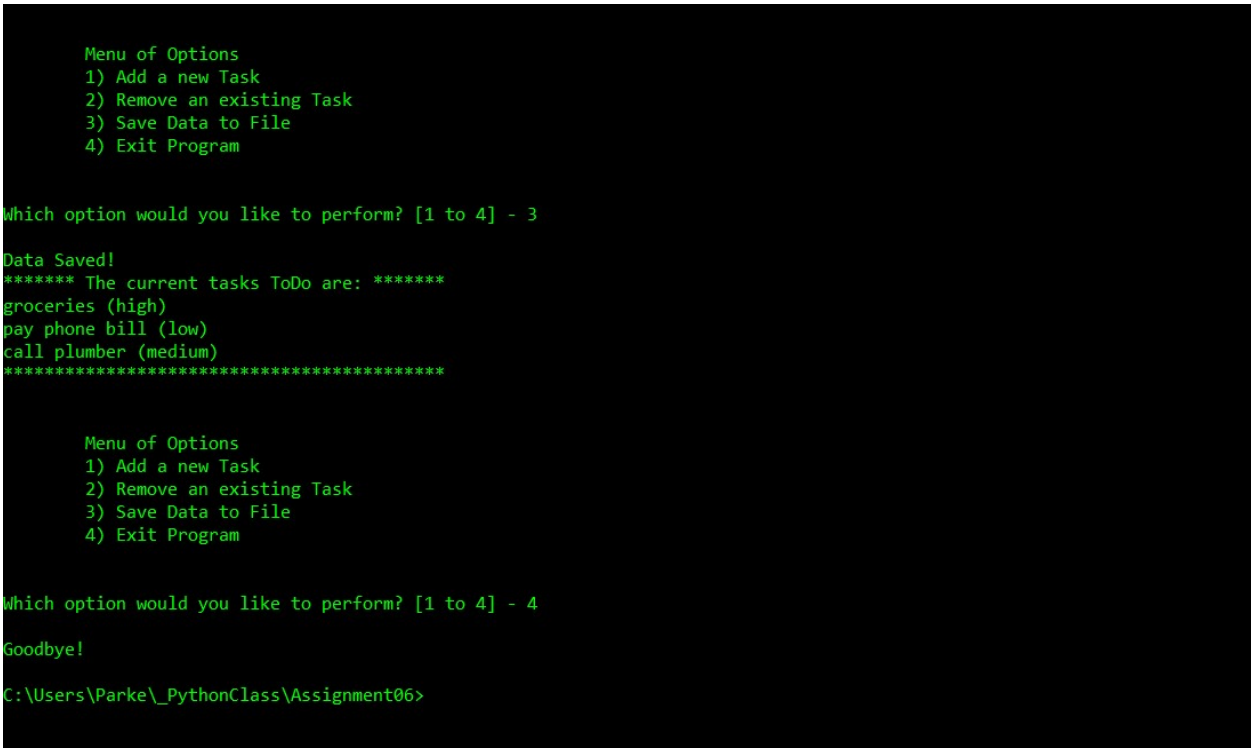

Figure 1. Script running from command prompt.

```
C:\Users\Parke\_PythonClass\Assignment06\Scripts\python.exe C:/Users/Parke/_PythonClass/Assignment06/Assigment06_updated.py
******* The current tasks ToDo are: *******
groceries (high)
pay phone bill (low)
call plumber (medium)
*****************************************


        Menu of Options
        1) Add a new Task
        2) Remove an existing Task
        3) Save Data to File
        4) Exit Program


Which option would you like to perform? [1 to 4] - 1

Input new task name:test
Input the priority of the new task:low
******* The current tasks ToDo are: *******
groceries (high)
pay phone bill (low)
call plumber (medium)
test (low)
*****************************************


        Menu of Options
        1) Add a new Task
        2) Remove an existing Task
        3) Save Data to File
        4) Exit Program


Which option would you like to perform? [1 to 4] - 2

What is the name of the task to be removed?:test
```

```
******* The current tasks ToDo are: *******
groceries (high)
pay phone bill (low)
call plumber (medium)
*****************************************


        Menu of Options
        1) Add a new Task
        2) Remove an existing Task
        3) Save Data to File
        4) Exit Program


Which option would you like to perform? [1 to 4] - 3

Data Saved!
******* The current tasks ToDo are: *******
groceries (high)
pay phone bill (low)
call plumber (medium)
*****************************************


        Menu of Options
        1) Add a new Task
        2) Remove an existing Task
        3) Save Data to File
        4) Exit Program


Which option would you like to perform? [1 to 4] - 4

Goodbye!

Process finished with exit code 0
```

Figure 2. Script running in PyCharm.

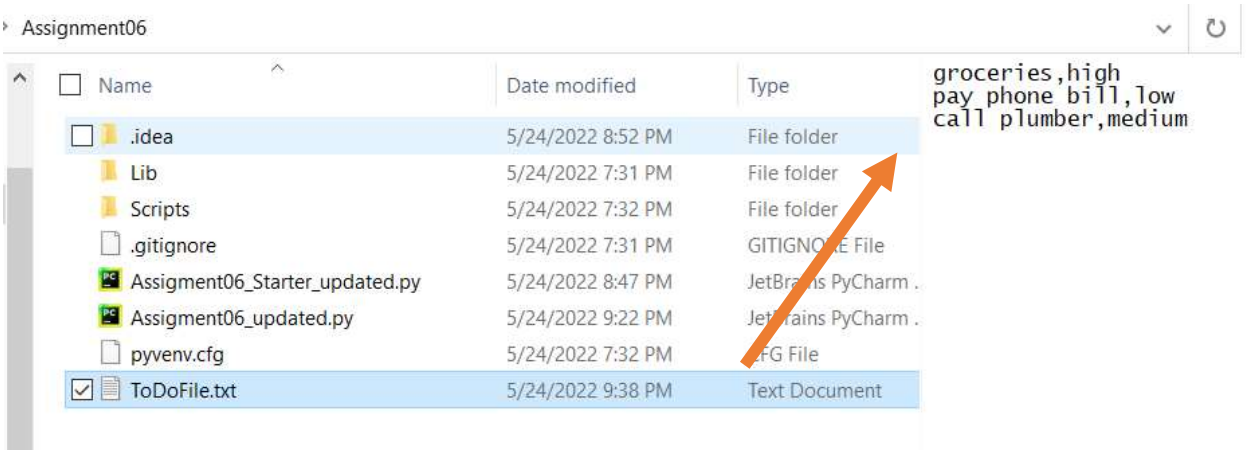

Figure 3. Data stored in file.

Summary

This assignment was about adding code using functions to a given Python script that performs different actions from a list of menu. The program uses an existing text file, adds new rows to the file, deletes entries, saves the information in the text file, and exits the program. The data storage is based in dictionaries. The highlight of this assignment is to use functions for the different actions.