Shuhua Liang

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IT FDN 110 A

Assignment06

https://github.com/sliang2022/IntroToProg-Python-Mod06

Functions

Introduction

From this lecture, I learned (1) how to define and call functions. (2) How to restructure an existing code into a given template. (3) difference between a global variable and local variable

Local Variables

Local variables in python are those variables that are declared inside the function. In the code below, I am defining a function under class **processor** which removes data from a list. As an input to the function**,** **task** and **list_of_rows** both can be viewed as local variables. The difference between them is **lis_of_rows** is passed as the result by code **return list_of_rows**. When the function is called in a different place, the name of the variable can be refined. An other interesting thing is, to edit the function, I simply copied the old code from assignment 05 and pasted it into the function with little modification.

```
def remove_data_from_list(task, list_of_rows):
    # TODO: Add Code Here!
    blnItemRemoved = False  # Use this to verify that the data was found and removed
    for row in list_of_rows:
        if task == row["Task"].lower() :
            print("task removed:", task)
            list_of_rows.remove(row)
            blnItemRemoved = True
    # Update user on the status
    if blnItemRemoved == True:
        print("The task was removed.")
    else:
        print("I'm sorry, but I could not find that task.")
    return list_of_rows
```

Figure 1, define a function which removes a task from an existing list and pass the list back to the function.

Function Defined under Class

Although I have been using functions for a while in other programming languages, it is exciting to learn how to apply class to function. In this code, the template groups all input/output functions under "**class IO**".

Which means it will not be mixed with functions defined outside this class with the same name. I think it is a very neat way to organize the code. Perhaps it has more applications after we go deeping into the lecture. I also liked the way the professor specifyed the expectation for this function and return data type.

```
class IO:
    @staticmethod
    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 = input("Task to remove: ")
        return Task.strip()
```

Figure 2, task remove function under class IO.

Call Functions in the Main Code

Finally, we can call the functions defined at the beginning of the code. The first function does not take an input but pass the task name to the second function. Basically, it breaks one piece of code in assignment 05 into three pieces. Although it makes the code much longer and more complex. I think it has certain advantages in organizing a large scare of code where certain functions need to be called repeatedly.

```
    task = IO.input_task_to_remove()
    table_lst = Processor.remove_data_from_list(task=task, list_of_rows=table_lst)
```

Figure 3: Call two functions in the main code.

Results

The process is quite smooth with PyCharm. I was able to get the correct results. However, when I try to run the same code in CMD lines, the CMD failed to find the path to the txt file. It took me a long time to

test the code, but I failed to find the answer. However, if I specify the txt file path in the python code, the CMD lines can run the code without any error. My guess is the default path is somehow damaged. But I am not sure about the reason.

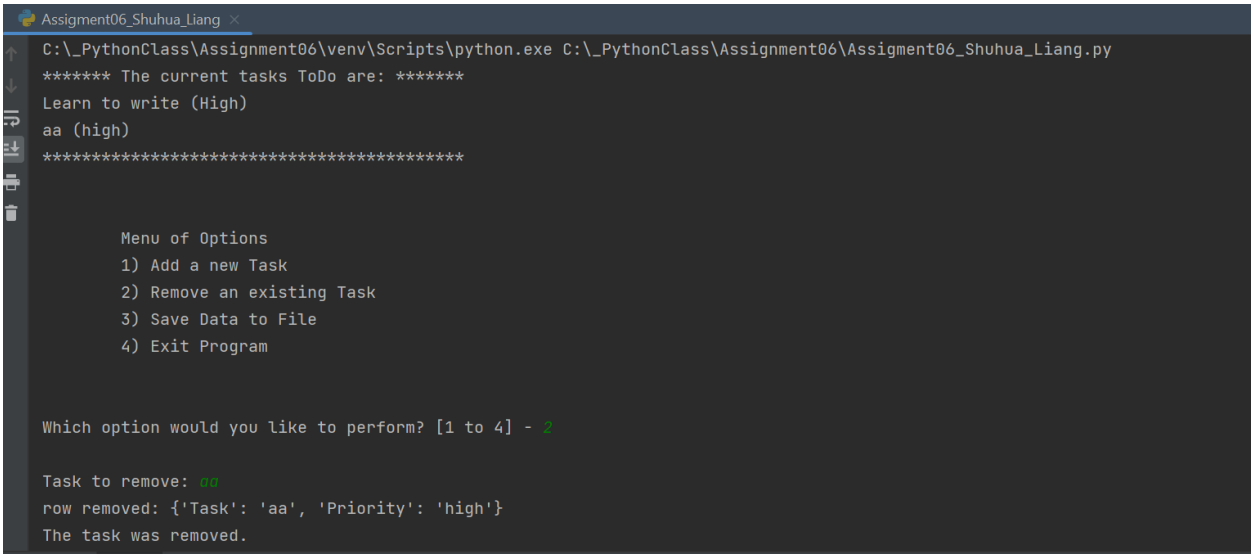

Figure 4: The code works fine under PyCharm.

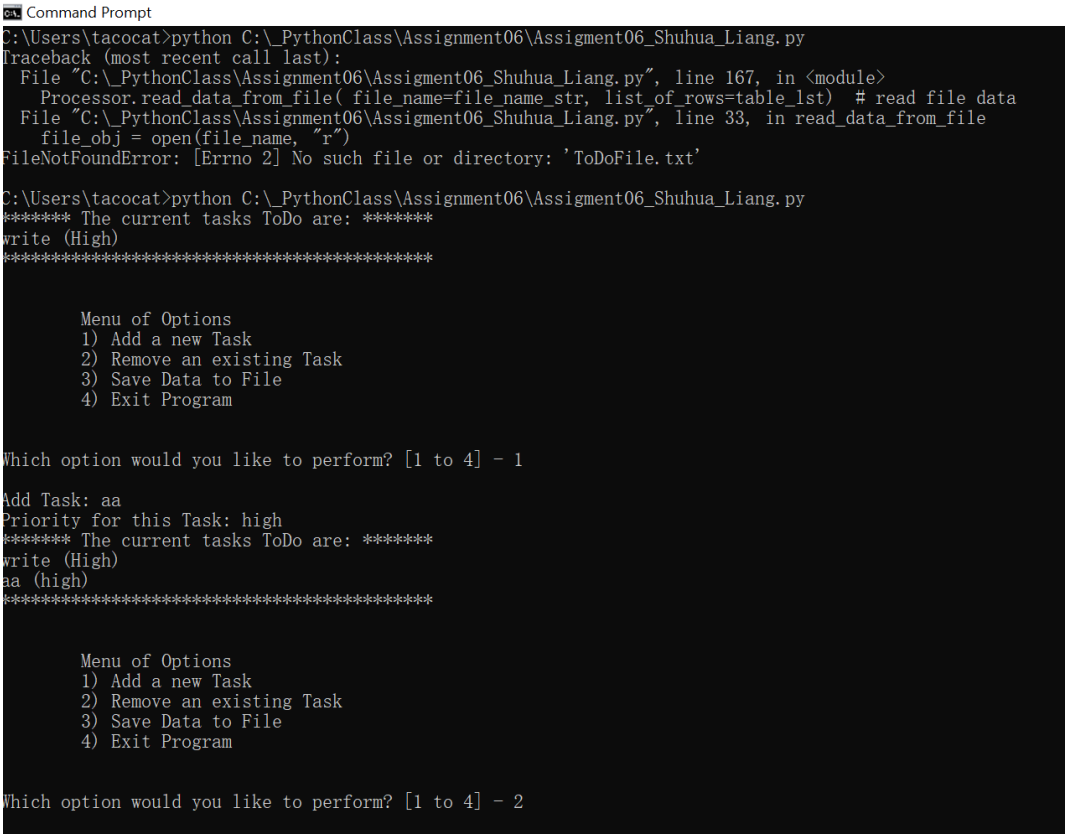

Figure 5: CMD failed to find the txt file path until I specify the path in the code.

Summary

In this project, I learned how to define and organize functions with classes. The code itself is not difficult. The main challenge is to understand the template structure created by the professor. I also encountered problems running the code in CMD, which failed to recognize the txt file path.