Dania Mahmood

Feb. 23, 2021

Foundations of Programming, Python

Assignment 6: Create script that demonstrates using class and function

GitHub Link: <https://github.com/daniamah/Intro_To_Python_Mod6>

Modifying a text file by using class functions

# Introduction

Functions are a way of grouping statements and classes are a way of grouping functions. Functions and Classes need to be defined before they can be called/used. Calling the functions will execute the code contained in it.

Functions can have parameters that allow users to pass values that the function can then use. Functions can also return one or more values that users can use to directly without having to store it in a variable.

Using different parameters can allow you to use the same function.

# Script

As usual, I started my script by adding the script header. You can see in the changelog what and when I added my changes.

I defined my variable in the beginning and added their usage as in-line comments.

I defined a class called ModifyData and defined functions in it that are called based on what option the users enters.

I defined a function for each action that a user might take from the menu.

I used the while loop to keep giving users the option to choose the next step until they choose to exit. But before I run the while loop, I copied the content of the ToDo.txt file to a list that I can modify in the loop.

Based on their choice I used the IF statement to make their input to the option and then execute only that section of the code.

In this script, users can pick options 1 to 5. If they pick 1, I run the function ModifyData.display\_current\_data(lst)

If they picked 2, I run the function ModifyData.add\_data\_to\_list(lst)

If they pick 3, then I run the function ModifyData.remove\_data\_from\_list(lst)

If they pick 4, then I run the function

ModifyData.write\_data\_from\_list\_to\_file(lst)

If they pick 5, I simply exit the script.

**elif** strUsrOpt == 5:  
 exit()

Below is a snapshot of my code.

*############################################################################################################  
# Title: Assignment 06  
# Description: Working with Functions  
# to display user a menu of options to choose from. Their choices are  
# Reading a file, writing to a file, removing from file,  
# saving to file and lastly exit the program.  
#  
# ChangeLog (Who,When,What)  
# DaniaM,02.22.2021,Started editing assignment 5 script, defined the ModifyData class to write functions  
# DaniaM,02.23.2021,Executed the save and remove functions and tested the script  
#############################################################################################################  
# Declare variables*dicRow = {} *# Dictionary definition*strTaskRm = **""** *# Enter to be removed*strUsrOpt = **""** *# To store option from the menu picked by user*lstRow = [] *# List of items in a row from file*lst = [] *# List of task and priorities*strMenu = **"Menu of Options" "\n" "1) Display current data" "\n" "2) Add Data to List" "\n" "3) Remove an item" "\n" "4) "** \  
 **"Save data to file" "\n" "5) Exit Program "  
  
class** ModifyData:  
 @staticmethod  
 **def** read\_file\_to\_list():  
 objFile = open(**"ToDo.txt"**, **"r"**)  
 **for** row **in** objFile:  
 lstRow = row.split(**","**)  
 dicRow = {**"Task"**: lstRow[0], **"Priority"**: lstRow[1]}  
 lst.append(dicRow)  
 objFile.close()  
 **return** lst  
  
 @staticmethod  
 **def** write\_data\_from\_list\_to\_file(lst):  
 status = **False** objFile = open(**"ToDo.txt"**, **"w"**)  
 **for** dicRow **in** lst:  
 objFile.write(dicRow[**"Task"**] + **","** + dicRow[**"Priority"**] + **"\n"**)  
 objFile.close()  
 *#print("Your data has been saved!")* status = **True  
 return** status  
  
 @staticmethod  
 **def** add\_data\_to\_list(lst):  
 strTask = input(**"Enter the task: "**)  
 strPri = input(**"Enter task priority: "**)  
 lstRow = {**"Task"**: strTask, **"Priority"**: strPri}  
 lst.append(lstRow)  
  
 @staticmethod  
 **def** remove\_data\_from\_list(lst):  
 status = **False** strTaskRm = str(input(**"Enter task name you want to remove? "**))  
 lst\_len = len(lst)  
  
 i = 0  
 found = **False  
 while** (i < lst\_len):  
 **if** strTaskRm **in** lst[i].values():  
 **del** lst[i]  
 print(strTaskRm + **" has been removed!"**)  
 found = **True  
 break** i = i + 1  
  
 **if** found == **False**:  
 print(**"Task not found!"**)  
  
 **return True** @staticmethod  
 **def** display\_current\_data(lst):  
 **for** row **in** lst:  
 print(row[**"Task"**] + **","** + row[**"Priority"**])  
  
*# Execute script depending on user input***while** (**True**):  
 print(strMenu)  
 strUsrOpt = int(input(**"Which option would you like to perform? [1 to 5] "**))  
 **if** strUsrOpt == 1:  
 ModifyData.display\_current\_data(lst)  
  
 **elif** strUsrOpt == 2:  
 ModifyData.add\_data\_to\_list(lst)  
  
 **elif** strUsrOpt == 3:  
 ModifyData.remove\_data\_from\_list(lst)  
  
 **elif** strUsrOpt == 4:  
 ModifyData.write\_data\_from\_list\_to\_file(lst)  
  
 **elif** strUsrOpt == 5:  
 exit()

# Summary

Lists and Dictionaries are same in regard to storing collection of data that can vary in data type. They both have a lot of useful built-in functions. Users can access elements of a list by using numeric indexes while elements of dictionaries can be accessed via character keys that makes it easier to understand what elements are being accessed.

Both List and Dictionaries let users load and modify data in memory before saving it to the hard drive.