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IT FDN 110 B Sp 24: Foundations Of Programming: Python

Assignment 05

Creating Python Scripts

Introduction

I created a Python program that demonstrates using constants, variables, and print statements to display a menu option about a student's registration and also to write to a csv file. I named the file as assignment_05.py. I included a script header that included below text and has my name and the current date.

While working on this assignment, I learned how to –

1. How to use Git Hub
2. How to apply Error Handling
3. How to use. join() command
4. How to add data to two-dimensional list table
5. How to use FOR command
6. How to define a Menu
7. How to define choices
8. How to use WHILE command
9. How to use IF Command
10. How to use ELIF Command
11. How to Close a Loop
12. How to format strings
13. Troubleshooting and debugging my code
14. How to Open, Write and Close a CSV File

```
#-----#  
# Title: Assignment05  
# DESC: This assignment demonstrates using constants, variables,  
#       operators, formatting, and files  
# and calculations  
# Change Log: (Who, When, What)  
# Ryan, 5/13/2024, Created Script  
#-----#
```

Code

I wrote the code below with Constant, Variables and Input. I used the While, IF and ELIF Commands. Also, I used the OPEN, WRITE AND CLOSE CSV File commands.

```

#Define the Data Constants
MENU:str = """
Select and enter a number based on the following options:
1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program
"""
FILE_NAME:str = "Enrollments.csv"

counter:int = 0
menu:str = ''
choice:str = ''
csv_data:str = ''
file_obj = 0

# When the program starts, read the file data into a list of lists(table)
# Extract the data from the file

# Define the Data Variables
student_first_name: str = ''
student_last_name: str = ''
course_name: str = ''
student_data: list[str] = []
student:list = []
student_csv_string = ""
try:
    with open(FILE_NAME, "r") as file:
        # Transform the data from the file
        # student_data = row.split(',')
        student_data = "[student_data[0], student_data[1], student_data[2]]"
        # Load it into our collection (list of lists)
        student.append(student_data)
        file.close()

except FileNotFoundError as e:
    print("ERROR: File not found.")
    print("Built-In Python error info: ")
    print(e, e.__doc__, type(e), sep='\n')
except Exception as e:
    print("There was a non-specific error.\n")
    print("Built-In Python error info: ")
    print(e, e.__doc__, type(e), sep='\n')

```

```

# Present and Process the data
while (True):

    # Present the menu of choices
    print(MENU)
    choice = input("Enter a Menu Option (1-4): ")

    # Input user data
    if choice == "1":
        student_first_name = input("Enter the Student First Name: ")
        student_last_name = input("Enter the Student Last Name: ")
        course_name = input("Enter the Course Name:")
        student_data = [student_first_name, student_last_name, course_name]
        student.append(student_data)

    # Present the current data

    elif choice == "2":
        print(student_data)
        for student in student:
            joined_student_info = ',' .join(student)
            print(joined_student_info)

    # Save the data to a file
    elif choice == "3":
        csv_data= open(FILE_NAME, 'a')

        #Writing to CSV File
        for student in student:
            student_csv_string = f"{student[0]} {student[1]} {student[2]}, \n"
            csv_data.write(student_csv_string)

        # Closing File
        csv_data.close()

        #Output
        print(f' You have registered {student_first_name} {student_last_name} for {course_name}, \n')

    # Stop the loop

    elif choice == "4":
        print("Ending Program")
        exit()

    else:
        print("Enter in 1-4")

```

Output

Below is a depiction of my code output in IDLE Shell, CSV File and Command Prompt.

1. IDLE Shell

Select and enter a number based on the following options:

1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): Alicia

Enter in 1-4

Select and enter a number based on the following options:

1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 1

Enter the Student First Name: Alicia

Enter the Student Last Name: Smith

Enter the Course Name:Psch200

Select and enter a number based on the following options:

1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 2

['Alicia', 'Smith', 'Psch200']

[,s,t,u,d,e,n,t,_d,a,t,a,[,0],,,, ,s,t,u,d,e,n,t,_d,a,t,a,[,1],,,, ,s,t,u,d,e,n,t,_d,a,t,a,[,2],,]
Alicia,Smith,Psch200

Select and enter a number based on the following options:

1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 3

You have registered Alicia Smith for Psch200,

Select and enter a number based on the following options:

1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 4

Ending Program

2. CSV File

enrollments.csv - C:\Users\ryan2\enrollments.csv (3.12.3)

| File | Edit | Format | Run | Options | Window | Help |
|--------|------|--------|-----|---------|--------|------|
| K i m, | | | | | | |
| W e x, | | | | | | |
| C r i, | | | | | | |
| K e i, | | | | | | |
| S m i, | | | | | | |
| P o l, | | | | | | |
| J i m, | | | | | | |
| M c g, | | | | | | |
| T e c, | | | | | | |
| R e n, | | | | | | |
| S n y, | | | | | | |
| p h i, | | | | | | |
| J u l, | | | | | | |
| S m i, | | | | | | |
| A c c, | | | | | | |
| A l i, | | | | | | |
| S m i, | | | | | | |
| P s c, | | | | | | |

3. Command Prompt

```
Command Prompt
Microsoft Windows [Version 10.0.22631.3447]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ryan2>assignment_05.py

Select and enter a number based on the following options:
1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 1
Enter the Student First Name: Jennifer
Enter the Student Last Name: Koons
Enter the Course Name:Soc 102

Select and enter a number based on the following options:
1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 2
['Jennifer', 'Koons', 'Soc 102']
[,s,t,u,d,e,n,t,_,d,a,t,a,[,0,],,,, ,s,t,u,d,e,n,t,_,d,a,t,a,[,1,],,,, ,s,t,u,d,e,n,t,_,d,a,t,a,[,2,],,]
Jennifer,Koons,Soc 102

Select and enter a number based on the following options:
1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 3
You have registered Jennifer Koons for Soc 102,

Select and enter a number based on the following options:
1. Register a student for a course
2. Show current data
3. Save data to a file
4. Exit the program

Enter a Menu Option (1-4): 4
Ending Program

C:\Users\ryan2>
```

Summary

For being able to write above code and successfully run it, I had watched all the assigned videos and reading. Also, watching the class recording helped me as well. While I was writing the code, I initially had a lot of bugs, so I had go back and rewatch most of the videos to clarify some of my questions around adding a Menu Choice and writing to a CSV File.