Rakshit Govil
December 13th, 2024
Creating Application
Assignment 08
GitHub URL: https://github.com/rakgov21/IntroToProg-Python-Mod08

Introduction to Programing with Python

(Creating Applications)

Introduction

In this assignment I will explain the steps I used to create a python application that provides user with 4 menu options to choose from to rate a new employee.
When Option-1 is chosen the content of the “EmployeeRatings.json” file is read and shown in a string format to make the user aware of employee that have already been rated before. Then, when option-2 is chosen it allows user to enter employee details which are employees first name, last name, review date in YYYY-MM-DD format and the rating itself. In option-3, the program opens the file named "EmployeeRatings.json " in write mode using the open () function. It writes the content of the option-2 output to the file using the write () function, then file is closed using the close () method. And at the end when option-4 is chosen the program ends. Also, if user enters any other menu option apart from 1 to 4 then “Invalid option chosen” is displayed and the user is asked to enter the correct option.
The script incorporates elements such as taking input from a user for four of the variables and then using string formatting, conditional logic, while loops, Lists, Dictionaries, Error Handling, Functions, Classes, Objects, Modules, Testing and JSON file writing and reading.

Drafting the Code

Defining the Constant

I began writing my code in the PyCharm IDE. The script needed following constants to be defined:

- MENU a string data type which is defined as a block of text which is the menu of options.
- FILE_NAME a string data type which is defined as “EmployeeRatings.json”

Defining the Variables

The script needs a total of 2 variables to be defined. The variables are defined as following:

- menu_choice a string data type which stores the menu option chosen by the user to execute.
- Employees as a list data type which is used for creating a table of employee's data.

Saving the Script

I created a folder in Documents/Python_Files called "Module_8_Assignment" and saved my pythons scripts as:

- data_classes.py
- processing_classes.py
- presentation_classes.py
- main.py
- test_data_classes.py
- test_processing_classes.py
- test_presentation_classes.py

Testing the Code

I decided to use the Assignment08_Starter.py file. Where I worked on adding all the additional requirements that were there for Assignment08 which included adding three modules named data_classes.py; presentation_classes.py and processing_classes.py and the modules consists of following classes Person and Employee in data_classes.py; FileProcessor class in processing_classes.py and IO class in presentation_classes.py. Then, I ran the entire script at once and the code ran as expected for me (Fig-1). I wrote and tested my script in PyCharm. Then at the end I worked on adding the other requirement for the assignment which is adding the structured error handling for some specific parts along with Docstrings which were mentioned in the assignment asks.

```
---- Employee Ratings -----------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
--------------------------------------------------


Enter your menu choice number: 1

--------------------------------------------------
Bob Smith is rated as 3
--------------------------------------------------


---- Employee Ratings -----------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
--------------------------------------------------


Enter your menu choice number: 2
What is the employee's first name? Rakshit
What is the employee's last name? Govil
What is their review date? 2024-12-11
What is their review rating? 4

--------------------------------------------------
Bob Smith is rated as 3
Rakshit Govil is rated as 4
```

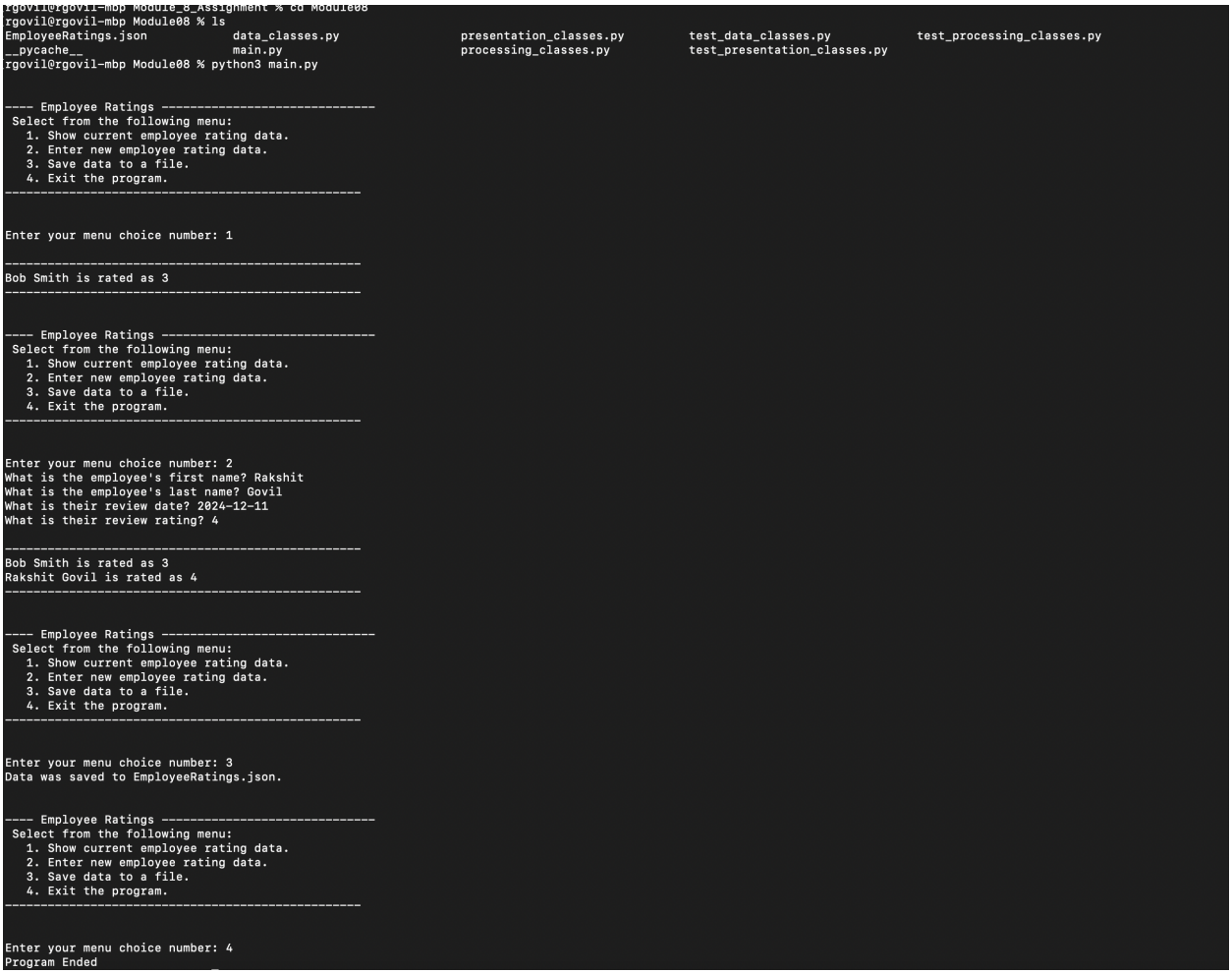
```
---- Employee Ratings -----------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
-------------------------------------------------


Enter your menu choice number: 3
Data was saved to EmployeeRatings.json.


---- Employee Ratings -----------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
-------------------------------------------------


Enter your menu choice number: 4
Program Ended
```

```json
[
    {
        "FirstName": "Bob",
        "LastName": "Smith",
        "ReviewDate": "2024-12-11",
        "ReviewRating": 3
    },
    {
        "FirstName": "Rakshit",
        "LastName": "Govil",
        "ReviewDate": "2024-12-11",
        "ReviewRating": 4
    }
]
```

Fig-1: Screenshot showing the testing of the entire script and output of JSON File

Running the Script on Terminal

I opened the terminal console on my mac, navigated to the correct folder using the cd (change directory) and ls (list files) commands. Then I used the python3 command along with the file name, main.py to run the script. And the script presented all the outputs and JSON File as expected. (Fig-2)



```
rgovil@rgovil-mbp Module08_Assignment % cd Module08
rgovil@rgovil-mbp Module08 % ls
EmployeeRatings.json            data_classes.py                presentation_classes.py         test_data_classes.py            test_processing_classes.py
__pycache__                     main.py                        processing_classes.py           test_presentation_classes.py
rgovil@rgovil-mbp Module08 % python3 main.py


---- Employee Ratings ------------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
----------------------------------------------------


Enter your menu choice number: 1

----------------------------------------------------
Bob Smith is rated as 3
----------------------------------------------------


---- Employee Ratings ------------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
----------------------------------------------------


Enter your menu choice number: 2
What is the employee's first name? Rakshit
What is the employee's last name? Govil
What is their review date? 2024-12-11
What is their review rating? 4

----------------------------------------------------
Bob Smith is rated as 3
Rakshit Govil is rated as 4
----------------------------------------------------


---- Employee Ratings ------------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
----------------------------------------------------


Enter your menu choice number: 3
Data was saved to EmployeeRatings.json.


---- Employee Ratings ------------------------------
 Select from the following menu:
   1. Show current employee rating data.
   2. Enter new employee rating data.
   3. Save data to a file.
   4. Exit the program.
----------------------------------------------------


Enter your menu choice number: 4
Program Ended
```

```
[
    {
        "FirstName": "Bob",
        "LastName": "Smith",
        "ReviewDate": "2024-12-11",
        "ReviewRating": 3
    },
    {
        "FirstName": "Rakshit",
        "LastName": "Govil",
        "ReviewDate": "2024-12-11",
        "ReviewRating": 4
    }
]
```

Fig-2: Screenshot showing commands to locate proper folder and running main.py

Summary

Using the Module 08 documentation and videos, and supplemental websites. I was able to successfully create a python script with all the required considerations. The program demonstrates my knowledge about programming tools and techniques including things like string formatting, conditional logic, while loops, Lists, Dictionaries, Error Handling, Functions, Classes, Objects, Modules, Testing and JSON file writing and reading.