Hotel Booking System

ICS 104 Lab Project

Hotel Booking System automates the processes for hotel booking and cancellation.

Expect to use: Functions, Loops, Exception Handling, Decision Block, Formatting, Lists, Dictionaries, Invalid Data Handling, Use of Appropriate Data Types, Boolean Operators etc.

Specifications:

The program should display the below menu and ask the user to enter his choice.

##

Hotel Booking System

1. Add New Hotel Booking
2. Generate Booking Confirmation (as txt file)
3. Display Information for all Bookings
4. Display Specific Booking
5. Update Booking Information
6. Exit

Enter your choice:

##

According to the input from the user, your program should do one of the following task.

1. **Adding New Booking:** This option allows the user to add a new Booking in the system. The information is saved in the Bookings.txt file.
   - The program should ask the user to enter Full name, phone number, City, Hotel Name, Check in date (day/month/year), check-out date (day/month/year), number of people. The program generates a booking confirmation number that consists of 2 uppercase letters which are the first letter of the city and the first letter of the first name 4 digits generated at random, for example if the user is Asma and is booking at the Hilton, then the confirmation number is "AH" followed by 4 random digits, an example confirmation number for this case is: "AH4897".
   - The program should accept only valid data, such as valid Phone Number, Valid day, valid month, valid year. The check-in date must be before the check-out date, and cannot be the same date (user cannot check-in and check out from the hotel on the same day). Phone number must be 10 digits and must start '05'.
2. **Generate Booking Confirmation:** This option generates the confirmation letter

for the booking as a file named "confirmation_lastname.txt". It should contain all the booking information. Make sure the document contains the information in a clearly formatted way.

3. **Displaying information of all bookings:** this option allows the user to display Hotel Booking's information in a nicely formatted table.

NOTE: DO NOT USE EXTERNAL LIBRARIES LIKE PANDAS ETC. YOU CAN USE TECHNIQUES LEARNED DURING LECTURES AND LABS.

SAMPLE OUTPUT (assuming this data entered previously by selecting option 1):

Confirmation number	Name	Phone	City	Hotel	Check-in date	Check-out date	Number of Guests
EM4231	Erik Smith	0500898897	Riyadh	Ritz	2/2/2021	3/2/2021	1
VR5984	Victor Adam	0558889043	Khobar	Marriot	1/1/2020	5/1/2020	3
BJ3690	Bob Hill	0555878990	Dubai	Jumeria	3/3/2022	7/3/2022	8

4. **Displaying information of a specific booking**: this option allows the user to display a specific booking information based on Confirmation Number or Phone number.
   - The program should ask for Confirmation Number or phone number and retrieve booking information based on that Confirmation Number or Phone number and display the information as shown below.
   - If entered Confirmation Number or Phone number is wrong (e.g. does not match with one shown in retrieved table), then it should warn the user and go back to main menu).

   SAMPLE OUTPUT:

   Confirmation Number: EM4231
   Phone Number: 0500898897
   City: Riyadh
   Hotel: Ritz
   Check-in: 2/2/2021
   Check-out: 3/2/2021
   Number of Guests: 1

5. **Updating the booking:** this option of the programs should display the following sub-menu

   1. Update Booking information
   2. Cancel Hotel Booking information
   3. Back to the main menu

   - Update Booking Information: this option should allow the user to change the hotel

name and/or the check-in and check-out dates. It should update it in the Bookings.txt file as well.

- Cancel booking information: this option allows the user to delete booking information using confirmation number.
    - If this option is selected, the program should delete the booking information from the Bookings.txt file.

6. **Terminating the program:** Remember, your program should be always running until the user close it with this option.
7. **Otherwise:** the program should display an appropriate error message and inform the user to enter a valid option.

Deliverables:

- Submission will be through the blackboard – assignment section
- Your program must contain as many functions as needed. You need to divide your problem into small tasks and each task handled by a function.
- The source code will contain comments on different functions.
- Each project will be done by a max of 2 students, but each student must know about all the project and will be asked about it individually.
- Contribution of group members must be equal (as much as possible).
- Your code should have the following lines at the beginning:
  # This work done by group $$:
  # Name of First Student, ID, Percentage of his work contribution
  # Name of Second Student, ID, Percentage of his work contribution

ICS 104 Lab project Guidelines

The lab project should include the following items:

- Dealing with diverse data type like strings, floats and int
- Involving operations dealing with files (reading from and writing to files)
- Using Lists/Dictionaries/Sets/Tuples (any of these data structures or combination)
- Adding, removing, and modifying records
- Storing data based on a certain criteria
- Saving data at the end of the session to a file

The lab project will be done by teams of 2 students

Please note the following items:

- Comments are important they are worth. (worth 5%)
- The code must use meaningful variable names and modular programming (worth 10%)
- Global variables are not allowed. Students should learn how to pass parameters to functions and receive results.
- Students must submit a working program. Non-working parts can be submitted separately. If a team submits a non-working program, it loses 20% of the grade.
- User input must be validated by the program i.e. valid range and valid type

Students will not use object oriented paradigm.

The deadline for submitting the lab project is Saturday December 10 before midnight.
Submitting Sunday before midnight will lead to 5% penalty
Submitting Monday before midnight 15% penalty

Deliverable:
Each team has to submit:

- The code as a Jupyter notebook
- The report as part of the Jupyter notebook or as a separate word file. The report will describe how they solved the problem. In addition, you need to describe the different functions with their task and screen shots of their running code. (worth 5%)

Lab demo/presentation:

- The week of December 11-15 will be used for lab project presentations.
- A slot of 15 minutes will be allocated to each team for their presentation and questions
- Students who do not appear for lab demo/presentation will get 0.

20% of the grade are highlighted above. The remaining 80% will be on the code itself and presentation.