2019 Spring - CSCI 151 — Programming Assignment

Flight Management and Booking
Part 3

Submission Deadline:
Thursday 11 April 2019 at 23:59.

This is Part 3 of the 4-part Programming Assignment, which is worth 20% of the final grade. The 4 parts contribute to define a system for Flight Management and Booking. Please be aware that:

1. you are not allowed to discuss the assignment online;
2. you will have to submit each of the 4 parts through Moodle by the deadline;
3. you will have a 10% penalty of the total grade of the 4-part Programming Assignment for each part that you submit up to 24 hour late;
4. you will have a 25% penalty of the total grade of the 4-part Programming Assignment for each part of the assignment that does not run;
5. after all 4 parts are graded, you may be selected for live grading, in order to assess whether you understand the code and you are able to change it according to the requirements given by the examiner;
6. you will get a 0 as the total grade of the 4-part Programming Assignment if
   - you miss the submission of any of the 4 parts (submission will close 24 hours after the deadline)
   - you are selected for live grading and either you do not show up at the scheduled time or your performance does not confirm the grade of the 4 parts of the assignment;
   - you have plagiarised any of the assignment parts (either by sharing code with peers or by reusing code found online);
7. you will lose points in any of the following cases
   - you do not use appropriate code indentation;
   - you do not use comments to illustrate your code.

Do not change the names of data structures, their components, variables and functions as shown in this assignment!

1 Data Structures

Extend the code of Part 2 of the programming assignment with the following new data structure definition.

Booking information: a `struct` type `booking` with the following fields:

- a string `lname` with the last name of the passenger;
- a string `fname` with the first name of the passenger;
- a string `pnr` with the booking reference of the passenger (the PNR is the airline's internal identifier for flight booking within their computer system);
- `gender` of type `char` to define the gender of the passenger;
- `class` of type `char` to define the booking class (i.e., economy (Y) or business (J)) of the passenger;
- a string `date` with the departure date;
- `age` of type `int` to define the age of the passenger;
- a string `airline` of length 2 to define the airline code;
- `number` of type `int` to define the flight number.

Booking list: an array `bookingList` of elements of type `booking`.

2 Functions

Define the following functions:

- `void displayAllBooking (const booking bookingList[], int i)`

  that outputs to the console booking information for all bookings using the format in the example in Figure 1;

- `void searchBooking (const booking bookingList[], int i, const flight flightSched[], int j)`

  that outputs to the console a booking information for a passenger using the format in the example in Figure 2;

where `i` is the number of elements of `bookingList` and `j` is the number of elements of `flightSched`.

3 Main

Read the information in file `booking.txt` to initialise arrays `bookingList`. Store all information for the bookings and create the following *Booking Search Menu* (as shown in Figure 3) for user's selection

1 To view all bookings in `bookingList`;

2 To search a booking in `bookingList` by using `lname` and `pnr`;

3 To exit;

You should call the `displayAllBooking` and `searchBooking` functions in the menu. Also, you must convert the user's input into upper case (if lower case letters are entered) for `searchBooking` function.

```
No. Name            PNR    Gender  Class  Departure       Age   Flight
1   JAMES/SMITH     UGR5R     M     Y     June-15-2019    19    KC 101
2   DAVID/SMITH     KQ5RJ     M     Y     July-10-2019    52    SU 113
3   MARIA/HERNANDEZ BQCR2     F     J     May-15-2019     42    KC 115
4   MILEY/CYRUS     D3R5A     F     J     April-25-2019   32    SU 901
5   ARIANA/GRANDE   HGQR9     F     Y     June-11-2019    31    KC 108
6   ELLEN/DEGENERES E85PR     F     Y     Nov-13-2019     20    KC 118
7   TYRESE/GIBSON   LQM6R     M     J     Sep-5-2019      25    KC 116
8   JUSTIN/BIEBER   KU2C4     M     Y     Oct-19-2019     40    KC 119
9   TRAVIS/SCOTT    NQRR9     M     J     June-10-2019    42    SU 502
10  ASHTON/KUTCHER  YDR5R     M     Y     July-19-2019    51    SU 113

Total Passengers: 10
```

Figure 1: View All Bookings: console output

```
Enter Last Name: kutcher
Enter PNR: ydr5e
No record found!

Enter Last Name: kutcher
Enter PNR: ydr5r

Name: ASHTON/KUTCHER
Gender: M
Age: 51
Booking Class: Y
Departure Date: July-19-2019
Flight Number: SU 113
Departure Time: 18:05
```

Figure 2: Search Booking: console output

```
Booking Search Menu
[1] To view all bookings
[2] To search a booking
[3] To exit
Enter your selection:
```

Figure 3: Booking Search Menu

4 Submission Procedure

Please upload your work on Moodle as one single zipped file containing the **entire project folder**.
Deadline: **Thursday 11 April 2019 at 23:59**.
Submissions will close on Friday 12 April 2019 at 23:59.