

ECE160 - Programming for Electrical Engineers

Spring 2025

03/27/25

Quiz #4

Name: _____

Score: ____ / 10

Travelocity (10 points)

In today's world, there are many ways to book travel - direct with the airline or through one of many third party services, like Expedia and Travelocity. You decide to break into this industry and take some market shares with Travelocity.

You decide to use C and create the following structures and functions.

- (1) Create a Flight structure that contains the following members. Choose the most appropriate data type for these members:
 - origin airport (3 characters)
 - destination airport (3 characters)
 - price
 - date
 - time
- (1) Create a Hotel structure that contains the following members. Choose the most appropriate data type for these members:
 - city
 - price
 - check-in date
 - check-out date
- (1) Create a TravelPackage structure that contains the following members. Unless otherwise specified, choose the most appropriate data type for these members.
 - travel package name
 - number of flights
 - array of Flights (using the Flight structure; up to size 10)
 - number of hotels
 - array of Hotels (using the Hotel structure; up to size 10)
- (1) Write a function that adds a Flight into the TravelPackage. The following function prototype must be used:
 - `void addFlightToTravelPackage(struct TravelPackage *tp, struct Flight f);`
- (1) Write a function that adds a Hotel into the TravelPackage. The following function prototype must be used:
 - `void addHotelToTravelPackage(struct TravelPackage *tp, struct Hotel *h);`
- (2) Write a function that computes and returns the total price. Add a 15% tax on top of the final cost. The following function prototype should be used:
 - `float computeTotalPrice(struct TravelPackage *tp);`

- (2) Write a main that does the following:
 - Create a Flight with the following properties:
 - origin airport: JFK
 - destination airport: LHR
 - price: \$599.99
 - date: April 20, 2025
 - time: 6:00PM
 - Create a Flight with the following properties:
 - origin airport: LHR
 - destination airport: JFK
 - price: \$399.99
 - date: April 25, 2025
 - time: 4:00PM
 - Create a Hotel with the following properties:
 - city: London
 - price: \$1500
 - check-in date: April 20, 2025
 - check-out date: April 25, 2025
 - Create a travel package with the name "London Excursion".
 - Add both flights and the hotel to the package.
 - Compute the total price of the travel package.
 - Print out the total price of the travel package.