

Scenario

COVID-19 and the resulting economic volatility has had a significant impact on small businesses all over the world. With restrictions being lifted many small businesses, especially those in the hospitality industry are considering investing in a booking system which will hopefully bring huge benefits to them, including efficiently managing workload, minimising human errors and attracting more customers.

In this assignment you are required to write a program that implements a booking system for a small hospitality business. You need to first research (not limited to) one or more of the following hospitality examples with a focus on what kind of services they provide, what format is used for the booking (by hours/days/events) and any booking policies they may have.

- Restaurants (examples of services might be a couple reservation (2 people), family reservation (3-6 people), and group reservation (6 above)).
- Amusement parks (examples of services might include individual ride booking or all-inclusive).
- Charter boats (examples of services might be fishing or sightseeing).
- Resorts (examples of services might be room-only, apartment or cottages).
- Sights of interest for tourists (examples of services might be with/without guides, limited entries).

Your program should allow customers to create an account with a username and password. The usernames can only contain letters and numbers. Then your program should present them with a welcome page with all the services that the business provides and availability of each type of service in an appropriate format, including unit price (hours/days/events) for customers to book. Customers will need to provide full contact details. A summary of booking details with the total price should be displayed to the customer once the booking is submitted. The time/durations should then be removed from the pool of availability to avoid double booking. Those customers who have made a booking can write reviews associated with their own booking. A review invitation will be added to their account after they check out. Once it is complete, the review should be made public under the booking section.

The administrators should be able to add, amend, and remove the availability after they log into the admin account (pre-created). They should also be able to make a new booking and amend/cancel an existing booking on behalf of customers.

Note the program does not necessarily take payment details.

Your program will need to perform the following operations:

- Set up the GUI
- Allow new customers to register a new account
- Allow existing customers to log in their account to:
 - view their booking details.
 - make a new booking – record the customer's name, address, and phone number. When a booking is submitted, the booking details and total price should be displayed to the customer.

- amend an existing booking – time/day/types of services. An update with a new total price should then be displayed to the customer.
- cancel an existing booking – this should then be made available for other customers to book.
- A review text box will be added to the customer's account after they check out.
- The customer's review will be added to the booking page and made public for all customers.
- Allow the administrator to handle customers' bookings (refer to the customers above for details) and allow them to:
 - make a new booking.
 - amend an existing booking.
 - cancel an existing booking.
- In addition, the administrator can:
 - Add, amend, and remove availability.
- Provide appropriate errors and help messages, and guidance for customers.

Task 1 (60 Marks)

- (a) You will need to implement a program (written in C#) which fulfils/meets all the requirements as outlined above **and** you will need to justify your program design in terms of classes.
- (50 marks)**
- (b) The quality of your program will be assessed in terms of program structure, quality of algorithms and readability.
- (10 marks)**

Task 2 (20 Marks)

You will need to develop a test plan and implement it. You should write a FIVE HUNDRED (500) word report about the plan, which should include the test plan, test scripts*, and the testing results* with full details.

An additional FIVE HUNDRED (500) word discussion should be included on how the data was selected and executed.

*There is no word limit for the test scripts and testing results.

Possible exceptions should be considered and tested to make sure they are properly handled.

Task 3 (20 Marks)

You will need to:

- Develop a fully detailed class diagram, which should be accompanied by a FIVE HUNDRED (500) word justification of your classes design. Note you are **not** allowed to use any tools that automatically build class diagrams.

Submission requirements

Your program must be submitted as a zip file of the full project.

- Your program should be written in **C#**.
- Whatever IDE you use, it should be possible to open and run the project directly from the extracted archive.
- Your testing data must be accompanied with a short, FIVE HUNDRED (500) word discussion of how the data was selected and executed.

Candidate checklist

Please use the following checklist to ensure that your work is ready for submission.

Have you read the NCC Education document *Academic Misconduct Policy* and ensured that you have acknowledged all the sources that you have used in your work? ☐

Have you completed the *Statement and Confirmation of Own Work* form and attached it to your assignment? **You must do this.** ☐

Have you ensured that your work has not gone over or under the recommended word count by more than 10%? ☐

Have you ensured that your work does not contain viruses and can be run directly? ☐