As businesses continue to incorporate more and more technology, the old systems often need digital alternative. This document highlights my Restaurant Booking System.

Restaurant Booking System

Computer Science NEA

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Contents

Identified a substantial problem

This should be an outline of your problem, you don't need to much detail as it is just the initial thoughts, don't try and solve the problem, just describe it.

You should consider

- The name of the organisation.
- An outline of the problem

The Gatwick Bar & Grill is a luxurious restaurant, where customers dine in and experience the excellent cuisine, ranging from a variety or cocktails to mouth-watering steaks. The menu consists of a large variety of grilled foods, such as barbeque wings, ribs, and much more. In addition to this, they also offer vegetarian alternatives to cater all their customers. The drinks menu contains of range of cocktails and mocktails, while also offering soft drinks and juices.

Currently, excluding the kitchen staff, the restaurant has 10 staff members who are the primary users of the system. The current system is used for creating reservations.

During the current process of their reservations, once they get a hold of the customer, whether it be via phone call or in person, the saff store all the reservation and contact details on a sheet of paper, with it all being handwritten. This often becomes a problem for the staff, as some handwriting is illegible. As a result of this, reservations may be given the wrong tables, food, etc, which may lead to poor service from the restaurant.

In addition to this, all the sheets with the reservation and customer details are stored remotely in a folder, which poses a huge risk towards the business as the possibility of loss is huge. This is because if someone were to spill water, for example, the whole folder of documents will be ruined as the sheets of paper are not very durable. Also, as the whole reservation system is paper based, there is no backup, which overall means that all the reservation details are lost. This is very critical as since all the customer's details are stored on the sheet, The Gatwick Bar & Grill will have no record of any contact details, making them unable to contact. As a result of this, a fully automated, digital system would cause the restaurant to benefit a lot.

Furthermore, I have also identified another issue with the system in use. Due to everything being written down, there is little to no validation present throughout the whole reservation process. This can be a substantial problem as it can cause disruption when trying to read and use this data.

Broad aims and limitations of the project

Outline the broad aims of the project, this shouldn't be technical, consider what the users want, these are your initial aims.

Outline any immediate limitations to your project, these may be something you cannot solve as you don't have the time or the availability of information – consider GDPR etc

Aims:

For this project, I plan on producing a Reservation System for The Gatwick Bar & Grill. This should allow staff to create reservations for customers, allocating the date and time, number of people, and table number.

- Straightforward booking experience
  - I want to prioritise this aim as this will allow people, who are not advanced in using technology, to use this system with no hassle at all. This will be done by implementing a user-friendly GUI, in particular, labelled buttons and descriptions and instructions on what to do next.

- Confirmation for Reservations
  - After the staff member has entered all the necessary details, the booking confirmation screen will appear and show all the reservation and contact details entered to confirm that all the data is correct. This will help ensure that the details entered by the staff are correct. As a result of this, mistakes will be avoided overall, and the booking experience will be stress-free.

- Different Access Levels
  - I would like to include different access levels for certain staff members. This will allow only certain staff members to cancel or alter bookings. As a result of this, the restaurant can ensure that the management of reservations are the responsibility of the allocated staff. Due to the implementation of different access levels, the security of the system will also increase because not everyone can access certain data.

- Number of customers reserved
  - A feature I would like to add is to be able to view the number of people that have been reserved for a specific time. This is done to ensure the restaurant isn't overbooking, which is essential as it would be bad to turn down a customer who has already made a reservation.

- High Level of Validation
  - Another aim is that I would want to have a high level of validation to ensure the correct format of details are being entered. This is very important because if there were to invalid characters entered into the database, some queries and functions will not work as intended.

- Total Revenue
  - Furthermore, in my system, I would like to include a feature that allows the manager to view the total revenue. In particular, I would like the user to be able to view the revenue for the day, week, and month. This should be done by considering all of the orders made and the prices of the orders. I believe that this will be insightful for the manager.

Limitations:

- Security of Data
  - A limitation I may face is the security of data due to it being time consuming. This could be done through encryption using the reservationID and customerID as encryption keys. Due to this inconvenience, this program may not follow the GDPR standard. However, as an extension, I may try and implement this into my system to fully maximise the system's security.

- Payments
  - Another limitation I face is my program will not be able to take payments for reservations. This is partly because I lack the technology and payment is usually completed using third parties.

- System is completely reliant on the database
  - In addition to this, another limitation is that if there were to be a fault in the connected database, the whole system would be redundant as it heavily relies on the database to gather data. The database is used throughout the log in process, the viewing of menu items, and much more.

- Lack of Complexity
  - Furthermore, another limitation is that my program may lack the complexity needed. For example, I will struggle to allow the user to make changes to the seating layout, such as dragging and dropping the tables. However, as I progress further, I may try to learn and introduce this feature.

Feedback and refinement to the proposed solution.

After you have presented your ideas to the class, what was the initial feedback and how will you go about including these, you can decide to ignore it… but you have to explain why

Storing Customer details?

- Yes, I plan on storing the customer's details in a fully normalised database. The details I plan on storing will include First name, Last name, and email address.
- As an extension, I will try and include encryption to try and comply with GDPR and increase the security of the system.

How will booking tables be separate?

- I will include a booking UI, which will have a calendar to show the bookings for the day and will allow the staff to view, add or delete bookings.

Will the tables be able to order food?

- The tables will be able to order food through the staff. The staff will then input the orders to the correct table using the system as I plan on adding a food ordering UI.

Will you email the details for the bookings?

- I will try and include a feature that will email the customer with the reservation details after the reservation has been made. This email will include the date and time of the reservation.

Will you include encryption?

- I am planning on encrypting sensitive information of the customer. Currently, I am thinking of using the primary key for each table as the encryption key. However, I will do more research to find better methods.

Will you add pre-ordering of food?

- Yes, I will implement a feature so that staff members can allocate food to a certain reservation. The pre-order will be stored in the database and linked with the correct reservation.

Will you include allergies?

- My initial thought was to not include this as this information should be on the menu, but just in case, I will put an ingredients field in the menu table. I will be adding a menu submenu that displays the food ingredients once clicked.

Will you have a GUI for the tables?

- Yes, I am going to include an on-screen layout of the restaurant, which will display the orders and reservations once that table is clicked.

What is the management information?

- There will be different access levels so that only the manager can delete bookings to ensure it is done correctly and for the right reason.

Can you have a takeaway system?

- As part of the extension, I could extend the GUI to include a takeaway section which could contain the order and collection name.

Can you book multiple tables?

- If a group reservation is too large for one table, the restaurant will be able to join multiple tables to accommodate their capacity.