**Hotel Booking System**

**Design Document**

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**1. Introduction**

The problem that we are trying to solve is to create a program in which we monitor hotel rooms for a client’s company. We will track which rooms are vacant and what food orders the room has out and already closed. We will track the date, time, food orders and overall bill of the stay for checking in, checking out and an overall bill of the stay. This program would be used for hotels which book many rooms throughout their day to day operations. A company that would fit into this category could be a company such as Caesars’ hotel and casino. Their day to day operations include booking rooms and providing room service to customers. Another application for this program would be any motel.. They rent rooms to people for their personal use, recording all necessary information that is needed to book a room.

**2. Application Architecture**

1. Class Employee
   1. This will have all the functions used in Front Deck class and Kitchen Staff class
2. Class Front Desk inherits from Employee
   1. this will be what the Front Desk will be using, this inherits functions from the employee with different parameters for the functions
3. Class Kitchen Staff inherits from Employee
   1. this will be what the Kitchen Staff will be using, this inherits functions from the employee with different parameters for the functions

This virtual abstract class, Employee will be the basis for the Front Desk and Kitchen Staff classes. This class will be the parent for Front Desk and Kitchen Staff classes. Class Front Desk and Kitchen Staff will have functions inherited from class Employee with the parameters only differing upon which class is using that function.

1. Class Menu
   1. Connect to database and log in then detect if you are a Front Desk employee or if you are a Kitchen Staff employee

When opening the program you are greeted with a login screen to log in to the system. When logging in you are prompted to enter a username and password. Upon a successful login you will be either transferred to the front desk menu or the kitchen staff menu depending on who has logged in.

If you have logged in as a front desk employee you will be presented with many options such as be able to check in customers and create a new reservation for them. Check out customers when they are leaving the hotel. You will also be able to edit existing reservations incase the customer would like to change rooms or want additional features added to their reservation or taken off their reservation. You may also view the complete reservation log and edit and change anything there as well. You can also check all available rooms when a customer is curious about staying at the hotel.

If you have logged in as a kitchen staff you are presented with a kitchen staff menu.You will be able to complete any room service orders that are shown and mark them as complete, You will also be able to create any new room service orders. you will also be able to delete any orders. You will be able to see a complete list of orders and be able to edit anything in that list.

**3. Required System Functions**

1. Login Function
2. Logout Function
3. Search For Room Function
4. Check In Function
5. Check Out Function
6. Search For Food Function
7. Add Food to Order Function
8. Remove Food from Order Function
9. Print Receipt
10. Calculate Total Price Function

**4. User Interface**

1. Login Depending on User
   1. Front Deck
   2. Kitchen Staff
2. If Front Desk
   1. Check in customers
      1. edit reservations
   2. check out customers
      1. add final price
   3. check the log
      1. edit the log
      2. check available rooms

3. If Kitchen Staff

* 1. check on room orders
     1. be able to edit the orders
  2. check out the orders
     1. when finished with the order update final price
  3. check the list of orders
     1. edit the list

**5. System Components**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Name** | **Function Description** | **Input Data** | **Output Data** | **Dependencies** |
| 1 | Login Function | Authenticates a user. | User Name and Password | Next Screen | Information in the database |
| 2 | Logout Function | Logs a user out of the software. | Click Button | Login Screen | n/a |
| 3 | Search For Room Function | Looks up all available rooms according to what kind of amenities you want. | Your choices of what kind of amenities you have chosen | The available rooms | Information in the database |
| 4 | Check In Function | Will tell the database that the room you have chosen is now closed and that you have checked in to that specific room. | Click Button | Checked In Screen | Information in the database |
| 5 | Check Out Function | Tells the database that you have finished your stay and that the room is available | Click Button | Checked Out Screen | Information in the database |
| 6 | Search For Food Function | Searches for the food of your choice on the menu | Click Buttons | Food Order Screen | Information in the database |
| 7 | Add Food to Order Function | Adds food to list of food for order. | Click Button | Food Order Screen | Information in the database |
| 8 | Remove Food from Order Function | Removes chosen food from the list of foods that your have ordered | Click Button | Food Order Screen | Information in the database |
| 9 | Print Receipt | Prints a physical receipt of the customer’s stay. | Click Button | Paper Receipt | Information in the database |
| 10 | Calculate Total Price Function | Computes the total price of the room and food combined. | Click Button | Check Out Screen | Information in the database |

**6. Database:**

The database we will choose to implement is a MySql database. Based upon our requirement specification we will structure and use the table in such a way as to make getting and retrieving data easier. The hotel will have a list of its rooms and the descriptions of them. Also they must have a menu already made up for the kitchen so we can use it for room service. Lastly they must have a list of all employee data and have their employees make usernames and passwords.

The first table in the database will be the rooms table, this will hold the descriptions of all rooms the hotel has. Each row must have specific data so the fields of this table will be as follows:

1. Room number: Will hold the number of the room and will be the primary key of the table because room numbers are unique.
2. Number of beds: Will hold the number of beds the room will have.
3. Number of Baths: Holds the number of baths the room has.
4. Suite: notes if the room is a suite or not.
5. ppn: Holds the price per night of a particular room.
6. Ocean View: Will hold a 1 or 0, noting if a room has an ocean view.
7. Balcony: Will hold a 1 or 0, noting if this room has a balcony.
8. Occupied: Will hold a 1 or 0, noting if the room is available or not.

The next table will be the Menu table holding the food items the kitchen can make for room service. Fields of this table are as follows:

1) Item id: Will hold the ID of a particular food item and will be the primary key of

this table.

2) Food: Will hold the name of the food item.

3) Price: Will hold the price the hotel wishes to change for the item.

The Employee table that will hold all information pertaining to the employees. The fields of this table are as follows:

1. ID: Will hold an unique id for each employee, and will be the primary key for this table.
2. Name: Will hold the name of the employee.
3. Job: Will hold a 1 or 0, noting whether they are front desk or kitchen staff.
4. Username: Will hold their username;
5. Password: Will hold a hashed version of the employee's password.

The orders table will hold all orders made to the kitchen staff. Fields for this table are as follows:

1. Record ID: ID of customer who ordered the item.
2. Item ID: Will hold the item ID of the food item.
3. Order ID: An unique id created for each order.

Next is the Order Items table which will hold all the items for a particular order.

1. Order ID: will hold the order id that pertains to the order the item belongs to.
2. Item: Holds the name of the item ordered.

Our Last Table is a Records table that holds the check in records, check out records, price, and orders the customer made. Fields are as follows:

1. Record ID: Will hold the customer id the record pertains to and will be the primary key of this table.
2. Room: Will hold the room the customer stayed in.
3. Credit #: Will hold the credit number of the customer.
4. Credit expiration date: holds the expiration date of the credit card.
5. Check in: Date they checked in.
6. Check out: Date they checked out.
7. Price: Final price of stay (includes room service orders)

**7. Required Software and Hardware**

Software requirements include a minimum of Microsoft Windows 7 or later, and a MySql database provided by the client. Hardware includes PCs connected to a local network or the internet, servers for the MySql database, keyboard, and mouse.