Deliverable 3

Hulton Hotel Management System

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DESCRIPTION OF IMPLEMENTATION AND PROBLEMS FACED

The goal of this phase of the project was to develop a functional management system for the Hulton Hotel chain. This management system would be based around an SQL database to store information pertaining to the Hulton's customers, the Hulton's hotels, and the services available at said hotels. This system was to be user-friendly, easy to use, and menu driven. A user guide was to be written to accompany the system, in order to ensure potential users could effectively work with the management software.

To interface with this database, three different applications were to be developed to allow customers and Hilton employees to utilize the database. The first of these programs was a Registration portal. This application would allow users, both customers and employees, to login to the management system. Additionally, users who did not have an account for the system could register to create a new account. Functionality for this application also included the ability for a user to manage information pertaining to their account. This included the ability to modify attributes such as password, email, phone number, or street address. The second application was the Reservation and Reviewing portal. This program was meant to allow users to view and search through available rooms across all Hulton Hotels. The user additionally could specify dates and location for which to search for available rooms. Rooms for which there were a discount were also to be displayed within this program. Once a user decided on the room or rooms they would like to stay in, this application was to provide registration functionality. This meant the user could select their room or rooms, select their dates of stay, and pay by credit card. During this process, the user was also to be able to register for services and breakfasts that the Hulton provides at a cost. In addition to viewing room offerings, registering for rooms, and selecting services, users were also meant to be able to write reviews about the Hulton. These reviews were to focus on only the services, breakfasts, or rooms the user had purchased and utilized. The final program was meant to act as a tool for the Hulton to view statistics about reservations, services, and breakfasts. These statistics would allow the Hulton to gauge customer satisfaction and study where their business model could improve. Four different statistics were to be determined through the use of this program. Each statistic was to be calculated within a specific date range, as specified by the individual user. Firstly, the highest rated room type for each hotel was to be determined. Next, the five customers who spent the most money on room reservations, services, and breakfasts were to be calculated. The top rated breakfast across all hotels was to be calculated, in addition to the top rated service across all hotels.

The backend SQL database was based on the solution Relational Model for the Hotel Management system and was built using mySQL. mySQL is a simple open source DBMS. mySQL was chosen as it seemed to be the most efficient for use in the project, as NJIT provides access to two mySQL servers as well as guidance in the usage of said servers. The solution relational model given on the website was used to ensure all relations were properly defined,

with all primary and foreign keys explicitly stated. The usage of this relational model ensured any errors in the previous deliverables were rectified, allowing our focus to be on implementation, testing, and debugging.

Implementation of programs which interface with the mySQL database were written in Java. Each application is menu based, allowing a user to simply and efficiently navigate throughout the features of the program. The user interface is text based, utilizing the command line. Menu options are selected by typing the number shown that corresponds to the desired option. The result of queries are displayed in a formatted fashion in the text based window. No buttons, text fields, or other mouse based user input is utilized.

Some obstacles were met throughout the implementation of the Hulton Hotel Management System. The first obstacle was the creation of a graphical user interface. No member of the group had ever built a mouse based user interface before. As such, creation of the front end seemed to be a daunting task that would prove to be impossible to complete within the time frame. To solve this obstacle, our group opted to implement a text based user interface. Such an interface would be efficient, simple, and have a low memory footprint. Additionally, all group members have worked extensively with such an interface. This allowed focus to move to the actual creation of the applications, ensuring all required functionalities were realized. After discussing the concept with Prof. Dass, this seemed to be the correct way to implement the front end. Writing the SQL statements for the creation and population of the Database was a small obstacle as well. Some of the first SQL statements written were met with errors by mySQL. After looking through mySQL manuals, syntax and specific statement rules became clear allowing us to move past the initial errors. The errors in syntax and clause placement persisted during the creation of the necessary SQL queries. These again were solved by referencing the mySQL manuals, course notes, and other online tutorial materials. The final obstacle faced for this deliverable involved properly interfacing the Java applications with the SQL database. Even after ensuring information could be passed between the two entities, debugging was required to solidify the data paths and ensure each program functioned properly without crashing.

USER GUIDE

Getting Started:

The first step to using the Hulton Hotel Management System is to register as a new customer. To register you must select option "2" in the main menu of the Customer Registration application. You will then be prompted to enter a valid email address, password, your full name, a street address, and an optional phone number.

If you were successfully registered into the system you will see an on-screen message that reads "Success! You are now registered to make reservations at Hulton Hotels."

Managing an Existing Account:

After registering with the Hulton Hotel Management System you may, at some point, need to change your email address, password, full name, street address, or phone number.

To do this, you will need to select option "1" in the Customer Registration application. After selecting this option you will be asked to enter your valid email and password. You will then see a screen of options to select what account information you would like to have updated. After making your selection you will be able to update the information you selected. If the update was successful a message that states "Account updated!" should appear.

Making a Reservation:

To make a reservation at one of our Hulton Hotel chains you will need to first login to our Reservation and Review application with a valid email and password.

You can then select option "1" to search through our hotels and make a reservation. The next steps will require you to select your desired country, state, and specific hotel within that region. After making these selections you will be asked if you would like to make a reservation here. If so, select "Y" and if you would like to search for another hotel then select "N". If you selected "Y" you will then be asked to choose a room type that you would like to reserve followed by your desired check-in and check-out date. If the check-in and check-out dates that you provide have available rooms then you will be shown a list of rooms with their specific details to select from. Once you have made your room selection you can then select whether you would like to order from a selection of hotel specific breakfasts and complimentary services. Once you have selected your desired services you will be prompted to confirm your reservation.

Once you have confirmed your reservation selections you will then be required to enter your credit card information in order to purchase your stay. If the credit card information is provided then you should see a success message confirming your purchase.

Writing a Review:

After your stay at one of our Hulton Hotel chains we encourage you to write a review about your experience.

To write a review you will need to login to our Reservation and Review application and login with the valid email and password that you used to create your reservation. After, you will need to select option "2" to leave a review. You will then be able to choose from a list of reservations, followed by the specific room, and what aspect of the experience you would like to review. We will then ask for a review of the experience on a scale of 1-10 and a textual description of your experience. If the process was completed successfully you will then see a message that reads "Thank you for your reviews! We greatly appreciate any and all feedback".

Gathering Statistics:

In order to gather statistics about the Hulton Hotel chain you will need to login to the Hutlon Hotels Statistics application with a valid email and password.

After logging in you will be asked to provide a start date and end date from which you want to conduct your analysis. After inputting your desired date range four statistics will be provided: highest rated room type per hotel, top five customers based on money spent, highest rated breakfast across all hotels, and highest rate service across all hotels.

Registering a New Account:

Choose "Register a new account":

```
Welcome to the Hulton Account Management and Registration app!
1 | Manage an existing account
2 | Register a new account
3 | Exit
2
2
```

Enter proper information to successfully register:

```
Enter your email: email@email.com
Enter a password: 12345
Confirm your password: 12345


Enter your full name: Greg Smith
Enter your address: 123 Street Newark NJ 01234
Enter your phone number: 1234567890

Success! You are now registered to make reservation at Hulton Hotels.
```

Managing an Existing Account:

Choose "Manage an existing account":

```
Welcome to the Hulton Account Management and Registration app!
1 | Manage an existing account
2 | Register a new account
3 | Exit
1
1
```

Enter credentials:

```
Email:
email@email.com
Password:
12345
```

Select what you want to update and enter updated information:

```
Welcome to account management, Greg Smith!
1 | Change email address
2 | Change password
3 | Update your name
4 | Update phone number
5 | Update home address
  |
0 | Logout
4


Enter your new phone number:
0000000000


Account updated!
```

Running Statistics:

Choose Login:

```
Welcome to the Hulton Hotels Statistics app!
1 | Login
0 | Exit
1
1
```

Enter email and password, select date range:

```
Email:
admin
Password:
admin
Welcome to the Hulton Hotels Statistics app, admin!


====Enter a date range, or type 'exit'====
Start date (MM/dd/yyyy):
03/03/2017

End date (MM/dd/yyyy):
10/10/2020
```

Statistics for the provided date range:

```
Highest rated room type per hotel:
HotelID                 Room
-----------------------
14012    |       Basic Room


Top 5 Customers (in terms of money spent):
Customer Name
--------------
tester
admin
Adrian Zugaj
Lena Oxton
Test Boi


Highest rated breakfast across all hotels:
HotelID                 Breakfast
--------------------------
14012    |       American


Highest rated service across all hotels:
HotelID                 Service
--------------------------
14012    |       Beach Dropoff
```

Making Reservations:

Select Login:

```
Welcome to the Hulton Reservation and Reviews app!
1 | Login
0 | Exit
1
1
```

Enter credentials and select option 1:

```
Email:
email@email.com
Password:
12345




Welcome to the Hulton Reservation and Reviews app, Greg Smith!
1 | Search hotels and make a reservation
2 | Leave a review
3 | Logout
  |
0 | Exit
1
```

Choose the location and date range of your reservation:

```
======Hulton Hotel Search======
Type 'exit' to return to the main menu at any time.

Pick a country:
1 | United States
2 | Australia
3 | Mexico
3

Pick a state in Mexico:
1 | Quintana Roo
1
Which hotel in Quintana Roo, Mexico would you like to view?
1 | 4 Blvd. Playa
1

You have chosen the hotel at 4 Blvd. Playa in Quintana Roo, Mexico.
Would you like to create a reservation? (Y/N)
y

What type of room would you like to reserve?
1 | Bohemian
1
Enter your desired check-in date for your stay (MM/dd/yyyy):
08/15/2017
Enter your desired check-out date for your stay (MM/dd/yyyy):
08/20/2017
```

Choose from available rooms:

```
Congrats! Those dates are available.

Which room would you like to reserve?
1 | $150.00 per day, 2 people, Floor 4 Room 4010                    ***Discounted!*** 10.0% off
        Description: Queen-sized bed with Complimentary Wi-Fi. Bottega Veneta toiletries and Nespresso coffee machine included. Attached bathroom.
2 | $150.00 per day, 2 people, Floor 4 Room 4011
        Description: Queen-sized bed with Complimentary Wi-Fi. Bottega Veneta toiletries and Nespresso coffee machine included. Attached bathroom.
3 | $150.00 per day, 2 people, Floor 4 Room 4012
        Description: Queen-sized bed with Complimentary Wi-Fi. Bottega Veneta toiletries and Nespresso coffee machine included. Attached bathroom.
4 | $150.00 per day, 2 people, Floor 4 Room 4013
        Description: Queen-sized bed with Complimentary Wi-Fi. Bottega Veneta toiletries and Nespresso coffee machine included. Attached bathroom.
5 | $250.00 per day, 6 people, Floor 10 Room 2000
        Description: Room decorated with children in mind. Two twin sized bunk beds with an additional queen sized bed.
6 | $250.00 per day, 6 people, Floor 10 Room 2001                    ***Discounted!*** 5.0% off
        Description: Room decorated with children in mind. Two twin sized bunk beds with an additional queen sized bed.
7 | $350.00 per day, 8 people, Floor 10 Room 2002                    ***Discounted!*** 5.0% off
        Description: Large scale room decorated with children in mind. Three twin sized bunk beds with a king sized bed. Includes play area with toys for all ages.
8 | $350.00 per day, 8 people, Floor 10 Room 2003
        Description: Large scale room decorated with children in mind. Three twin sized bunk beds with a king sized bed. Includes play area with toys for all ages.
9 | $300.00 per day, 2 people, Floor 2 Room 2111                     ***Discounted!*** 25.0% off
        Description: Stay in an upscale room fit for a celebrity. Large california king bed with shower/bathtub combo unit. Sleek and austere decorations.
10 | $300.00 per day, 2 people, Floor 2 Room 2112
        Description: Stay in an upscale room fit for a celebrity. Large california king bed with shower/bathtub combo unit. Sleek and austere decorations.
11 | $300.00 per day, 2 people, Floor 2 Room 2113
        Description: Stay in an upscale room fit for a celebrity. Large california king bed with shower/bathtub combo unit. Sleek and austere decorations.
12 | $300.00 per day, 2 people, Floor 2 Room 2114
        Description: Stay in an upscale room fit for a celebrity. Large california king bed with shower/bathtub combo unit. Sleek and austere decorations.
13 | $300.00 per day, 2 people, Floor 2 Room 2115
        Description: Stay in an upscale room fit for a celebrity. Large california king bed with shower/bathtub combo unit. Sleek and austere decorations.
14 | $200.00 per day, 2 people, Floor 1 Room 3009                    ***Discounted!*** 20.0% off
        Description: Rustic log cabin themed room. Includes one King bed, one bath, and attached fireplace.
15 | $200.00 per day, 2 people, Floor 1 Room 3010
        Description: Rustic log cabin themed room. Includes one King bed, one bath, and attached fireplace.
16 | $200.00 per day, 2 people, Floor 1 Room 3011
        Description: Rustic log cabin themed room. Includes one King bed, one bath, and attached fireplace.
17 | $200.00 per day, 2 people, Floor 1 Room 3012
        Description: Rustic log cabin themed room. Includes one King bed, one bath, and attached fireplace.
```

Choose from available services and confirm reservation:

```
Breakfasts are available for your reservation.
Please indicate how many of each breakfast you would like (1 per day, per person)


Buffet ($10.00/order):
All you can eat buffet including eggs, bacon, pancakes, and sausage.
Number of orders: 5



Services are available for your reservation.
Please indicate (Y/N) for each service.
Beach Dropoff ($5.00): y



All aspects of your visit are set!
Would you like to confirm your reservation now? (Y/N)
y
```

Enter credit card information:

```
In order to reserve your room, we require that you enter a credit card.
Enter your credit card number:
12345678911111111
Enter your credit card type:
visa
Enter the name on your credit card:
andrew wilson
Enter your billing address:
123 test road newark nj
Enter your credit card security code:
678
Enter your credit card expiration year:
2018
```

Receive confirmation and choose whether to make another reservation:

```
Congratulations! You have successfully created your Hulton Hotels reservation.

Would you like to add another room to this reservation?  (Y/N)
This will add another reservation to your visa-**1111.
n
```

Leaving Reviews:

Select Login

```
Welcome to the Hulton Reservation and Reviews app!
1 | Login
0 | Exit
1
```

Enter credentials

```
Email:
admin
Password:
admin
```

Select "Leave a Review"

```
admin



Welcome to the Hulton Reservation and Reviews app, admin!
1 | Search hotels and make a reservation
2 | Leave a review
3 | Logout
  |
0 | Exit
2
```

Select a Reservation

```
2 | Leave a review
3 | Logout
  |
0 | Exit
2

======Hulton Review App======
Please pick a reservation that you would like to review:
1 | Invoice: 1, Card: Visa-**1234,    Reserve Date: 2017-05-04
2 | Invoice: 2, Card: Visa-**1234,    Reserve Date: 2017-05-04
3 | Invoice: 3, Card: Visa-**1234,    Reserve Date: 2017-05-04
4 | Invoice: 1111116,   Card: amex-**7788,   Reserve Date: 2017-05-04
5 | Invoice: 1111121,   Card: visa-**6666,   Reserve Date: 2017-05-04
1
```

Pick a Room Booking

```
======Hulton Review App======
Please pick a reservation that you would like to review:
1 | Invoice: 1, Card: Visa-**1234,    Reserve Date: 2017-05-04
2 | Invoice: 2, Card: Visa-**1234,    Reserve Date: 2017-05-04
3 | Invoice: 3, Card: Visa-**1234,    Reserve Date: 2017-05-04
4 | Invoice: 1111116,   Card: amex-**7788,   Reserve Date: 2017-05-04
5 | Invoice: 1111121,   Card: visa-**6666,   Reserve Date: 2017-05-04
1

Please pick a room reservation that you would like to review:
1 | California, United States - Basic Room, Room #4010
2 | California, United States - Basic Room, Room #4010
3 | California, United States - Basic Room, Room #4011
1
```

Pick what you would like to review

```
4 | Invoice: 1111116,    Card: amex-**7788,    Reserve Date: 2017-05-04
5 | Invoice: 1111121,    Card: visa-**6666,    Reserve Date: 2017-05-04
1

Please pick a room reservation that you would like to review:
1 | California, United States - Basic Room, Room #4010
2 | California, United States - Basic Room, Room #4010
3 | California, United States - Basic Room, Room #4011
1

What would you like to review?
1 | Room
2 | Breakfast
3 | Services
1
```

Enter a rating for your review

```
1
Please pick a room reservation that you would like to review:
1 | California, United States - Basic Room, Room #4010
2 | California, United States - Basic Room, Room #4010
3 | California, United States - Basic Room, Room #4011
1

What would you like to review?
1 | Room
2 | Breakfast
3 | Services
1
On a scale of 1-10, how would you rate your room?
10
```

Enter your text review

```
1 | California, United States - Basic Room, Room #4010
2 | California, United States - Basic Room, Room #4010
3 | California, United States - Basic Room, Room #4011
1
What would you like to review?
1 | Room
2 | Breakfast
3 | Services
1
On a scale of 1-10, how would you rate your room?
10
Write your review of your room (limit 500 characters):
It was a great room, very clean and modern.
```

Note: For breakfast and service reviews, you will be prompted to review every breakfast or every service that you had. Type 'skip' if you would like to omit reviewing a particular item.