



Project Report  
CSE 311L  
Database Management System  
Section 9

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North South University

Submitted to: Sajid Ahmed

| Name               | ID         | Email  | Group |
|--------------------|------------|--|-------|
| Md. Alamin Hossain | 1821570042 | <a href="mailto:alamin.hossain7@northsouth.edu">alamin.hossain7@northsouth.edu</a> | G     |
| Asif Rahman        | 1821214042 | <a href="mailto:asif.rahman10@northsouth.edu">asif.rahman10@northsouth.edu</a>     | G     |
| Bibi Ayesha        | 1822162642 | <a href="mailto:bibi.aysha@northsouth.edu">bibi.aysha@northsouth.edu</a>           | G     |

# Hotel Management System

## **Introduction:**

We are going to make a user-friendly webpage to search for “Amar Desh Hotel” rooms on people’s demand and can book rooms if wishes to. Guest have to open their account to book rooms and the person stayed or booked rooms. Can also view the status and available rooms by logging in. Here we have some employees who can access to the database and can confirm booking or cancel if wishes to. An admin can also trace the people about how many times they used to stay on this hotel and the kind of rooms they prefer. Admin can also ban or delete a guest id if the situation comes. Only an admin can add employees/admin, who can also maintain the database and can access through it.

## **Technologies:**

### **Software’s:**

#### **1. Xampp**

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes. Everything needed to set up a web server – server application (Apache), database (MariaDB), and scripting language (PHP) – is included in an extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server extremely easy as well.

#### **2. MySql**

MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. MySQL Workbench provides data modeling, SQL development, and comprehensive administration tools for server configuration, user administration, backup, and much more. MySQL Workbench is available on Windows, Linux and Mac OS X.

#### **3. Sublime text**

Sublime Text is a proprietary cross-platform source code editor with a Python application programming interface (API). It natively supports many programming

languages and markup languages, and functions can be added by users with plugins, typically community-built and maintained under free-software licenses.

#### **4. GitHub**

GitHub is a web-based hosting service for version control using Git. It is mostly used for computer code. It offers all of the distributed version control and source code management (SCM) functionality of Git as well as adding its own features. It provides access control and several collaboration features such as bug tracking, feature requests, task management, and wikis for every project. GitHub offers plans for both private repositories and free accounts which are commonly used to host open source software projects

### **Technology:**

#### **1. SQL**

SQL is used to communicate with a database. According to ANSI (American National Standards Institute), it is the standard language for relational database management systems. SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database.

#### **2. HTML**

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. [4] Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items.

#### **3. PHP**

Hypertext Preprocessor (or simply PHP) is a server-side scripting language designed for Web development, but also used as a general-purpose programming language. It was originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is now produced by The PHP Group. PHP originally stood for Personal Home Page, but it now stands for the recursive acronym PHP: Hypertext Preprocessor. PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management systems, and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and

executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications.

#### **4. Bootstrap 4**

Bootstrap is a free and open-source front-end framework for designing websites and web applications. It contains HTML- and CSS-based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions. Unlike many web frameworks, it concerns itself with front-end development only

#### **5. Java script**

JavaScript often abbreviated as JS, is a high-level, interpreted programming language. It is a language which is also characterized as dynamic, weakly typed, prototype-based and multi-paradigm. Alongside HTML and CSS, JavaScript is one of the three core technologies of the World Wide Web. JavaScript enables interactive web pages and thus is an essential part of web applications. The vast majority of websites use it, and all major web browsers have a dedicated JavaScript engine to execute it.

#### **6. CSS**

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate css file, and reduce complexity and repetition in the structural content.

### **Features:**

#### **Entities for this database:**

1. Admin(user\_info)
2. Guest\_info
3. Room
4. Room\_Number
5. Roombook
6. Payment
7. Pay\_status

1. **Admin:** Admin will have a login id and password.

After logged in he can

- ✓ See all the guest information,
- ✓ View all the reservation,
- ✓ edit the reservation based on contact,
- ✓ confirm the booking,
- ✓ confirm the payment status,
- ✓ can add new room,
- ✓ can reserve instant room bases on the availability,
- ✓ can cancel the reservation based on the situation,
- ✓ can add employees of this Hotel.

After all he can manage the facilities.

2. **Guest info:** Stores all the information's about the guests who have stayed in the hotel or booked to stay

After logged in a Guest can

- ✓ View his information's,
- ✓ Reserve a room,
- ✓ View all the available rooms,
- ✓ view his all reservation statement,
- ✓ delete the reservation if it's not confirmed by admin
- ✓ reset password.

3. **Room:** Here we can see all the different types of rooms with their information's along with the prices.

4. **Room Number:** Here we can find all rooms in this hotel and can see whether is it booked by an individual guest or not with it.

5. **RoomBook:** Stores information about the booking request along with individual room id and customer id, keeps the trace of reservation request.

6. **Payment:** All the payment status will be collected here and also the amount based on the staying time in different types of room in the hotel.

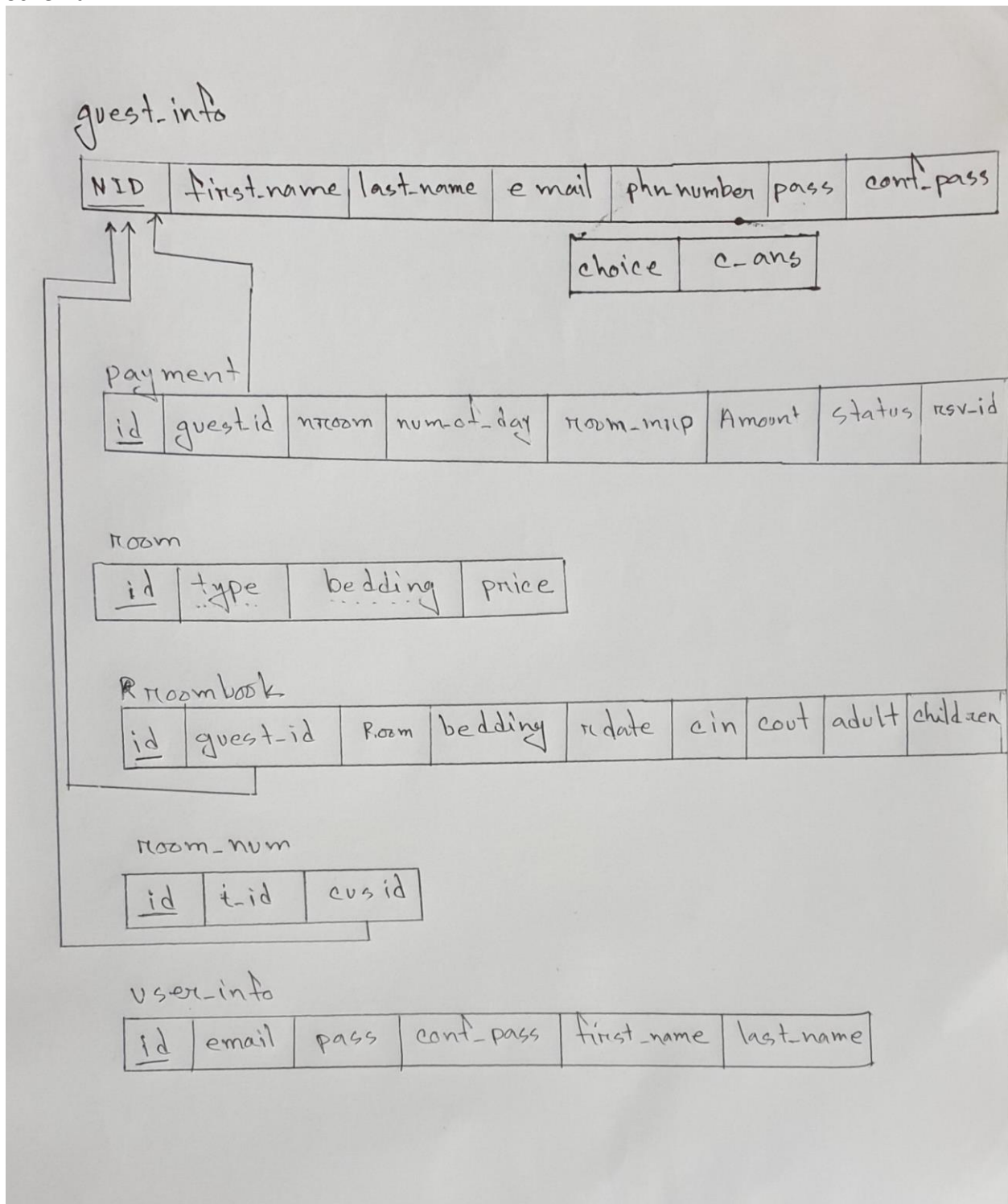
7. **Pay status:** Keeps the trace whether it is paid or not with its id.

**Database noemalization:**

We normalized database up to 3NF.

Proof:

Schema:



Here, Schema is in 1NF because, there is a primary key on which all the attributes depend on and all the data is atomic.

Schema is in 2NF because, in all the schemas there is no functional dependency.

And finally it is in 3NF because, there is no transitive dependency.

As Schema is in 3NF reduced all the redundancy we decided to stop here.

### **Work division and contribution**

| Alamin  | Ratul  | Sneha   |
|---|--|---|
| <ul style="list-style-type: none"><li>- Project proposal</li><li>- Project report</li><li>- Home page design and content</li><li>- Schema diagram</li><li>- Guest information and the options it it</li><li>- Table create</li><li>- Connection building between pages</li><li>- Some other queries</li></ul> | <ul style="list-style-type: none"><li>- Sign up and log in page</li><li>- Admin panel</li><li>- Admin options and execution with php, css, html and sql</li><li>- ER diagram</li><li>- Table create</li><li>- Some other queries</li></ul> | <ul style="list-style-type: none"><li>- Reservation form</li><li>- Some other html codes</li><li>- Collecting some other design</li></ul> |

### **Advantage**

- The advantages of booking a hotel online add up long before your arrival. Our legendary customer service extends to the web
- One advantage of booking with the hotel directly is the use of the hotel's full cancellation policy as well as not needing a deposit in most situations.
- The most important advantage of online hotel booking is convenience, you can book your room by simply sitting in home. Internet helps you to browse through the hotels around the world and compare the facilities and rates easily

### **Requirement:**

- ✓ **Your project must have User Registration and Authentication**  
**Register**-used to reserve room, creating user and admin account  
**Login**-have log in option for both guest and admin  
**Logout**- have log out option for both guest and admin
- ✓ **INSERT records** – From table to data base used several times.

- ✓ **UPDATE records (using primary and foreign key associations)** used in retrieve password, changing reservation date and other options.
- ✓ **DELETE records (using primary and foreign key associations)**- used to delete reservation , deleting guest account
- ✓ **SELECT records with variable number of columns from a table**- used several times to view information in one's account
- ✓ **JOIN operations** -used several times to connect tables and showing information's
- ✓ **Subqueries** - used several times to connect tables and showing information's
- ✓ **Aggregation functions** - used several times to compare results and calculations.

### References:

<https://getbootstrap.com/docs/4.5/examples/>  
[https://www.w3schools.com/js/js\\_ajax\\_database.asp](https://www.w3schools.com/js/js_ajax_database.asp)  
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<https://www.w3schools.com/php/default.asp>



## ER Diagram

