Hotel Management System

- **Members Details:**

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- **TA :Mahir sir**
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- **Version number: V1.0**
- **Start Date:28-02-2022**
- **End Date: 13-05-2022 (Approx. 11 weeks)**

Objectives

The goal of a hotel management system is to serve as a link between guests and hotels. People nowadays arrange events, vacations, and weddings, and visitors require hotel rooms. People are no longer required to physically visit hotels to negotiate over hotel rates; instead, they go online and reserve rooms according to their preferences. Many functions related to consumers and hotel workers will be available through this web-based hotel management system.

It will help in more efficient management of consumer data and simplify the booking process. It will be a two-way benefit, with the hotel owner being able to keep track of the customer's online booking and the consumer receiving positive feedback. Because there are so many consumers booking records, there are challenges with physical record updating and deletion, but this system resolves these issues.

Some of the critical objectives are:

- User allotment with room is scheduled to make it convenient for the user.
- Managing user details with privacy and keeping user satisfaction is at most priority,
- User can see all hotel rooms with prices and can select best room about his/her preferences
- They can cancel reservations at any moment with some cost.
- Manager of the hotel can set rates, see consumers info, change in inventory, change room status.
- secure payment methods for users.
- make the system enough efficient so that after the cancellation of room, other users can book that room.
- for query, users can contact the hotels at any time.
- Simple and interactive GUI - Due to the Simple user interface of this web application, users don’t need to put more efforts to use this system.
- Weather Data around the Hotels should be there so that user can get Idea about which place to choose according to weather at those places.

- ## Functionalities

  - **User Registration:** A user registration form is available, where new users can create an account by providing the necessary information to the system like ID proof, Email, contact number, username, password etc. If all the data of the user is unique then system send the automated mail to the user's mail for the verification of the account.

  - **User login:** customer needs to provide the valid username and password for the login in to their account.

  - **Manage room:** Users can see the list of available room and if any room will be in under maintenance or already booked by other customer in advance then users cannot book that room.

  - **Manage Staff:** Admin can see the staff member details like staff member name, phone number, bank account number and track record of all the staffs in the hotel.

  - **Manage User**: Admin can see the all users details to see the frequency of the customer and also payment paid by the customer. Admin/Receptionist can update the customer details according to customers latest information.

  - **Manage inventory**: Admin/Owner can see the total (food + furniture) inventory used and what number of inventories was in stock. If the stock is below the threshold value than manger has to immediate order the appropriate number of inventories using the previous data. (Threshold value is calculate using the previous month's used inventories).

  - **Search room**: Users can request a room booking for a particular date and time. There are mainly two types of rooms available, like a single and double bed with AC and Non-AC. Users can choose as per their choice. Users can also see the remaining time of already booked room for the future booking reference.

  - **Approving/Disapproving Requests**: The system sends booking requests directly to the admin account. Admin can see all of the requests and the user details for each one and make decisions on whether or not to cancel them. If the customer is not authenticating via mail or phone number then admin can block that particular customer.

- **Order food:** Customer can see the online menu card from the website and order the food providing the code/food name of the food from the menu card and the quantity as their preference.

- **Booking & order information:** System provides the unique code for each customer. This helps to store all the booking and order details for that particular customer.

- **Pricing Details:** Users can see the rate of room in price description section parallelly with room number. Also, only admin can change the price details.

- **Payment Details:** When customer wants to leave the hotel, they can enter their booking information for the payment. Customers must pay using one of the available payment methods, such as cash, net banking, or an ATM card. To clear payment, the payment portal would use a payment gateway.

- **Issue bill& feedback:** Once payment is received, an automatic receipt will be generated and the feedback form will send to the mentioned Email address.

- **Special discount**: Some users might get a special discount on room booking based on previous booking details. Sometimes, lucky users also get a discount if a special offer is available.

- **Room cancellation:** Users have a choice to cancel their room (if booked) but in that case, they will not get 100% of their money.

- **Help desk:** Customer can call the staff for any query using help button on the website.

• Project Deliverables

a) Milestones

- **Week-1 & Week-2 : -** At initial phase, we will do research on Hotel Management System. After that we do data analysis and gather all the requirements. We will think some futuristic invitation that can be compile with existing system. After deciding all the functionalities, we will make design for our system and start to develop some basic functionality.

- **Week-3 & Week-4:** At second phase, we will move forward to approach next functionalities to deploy on the system and create web website. After the first version of the website will successfully build, we will test the system and take feedback of the testers and analyse it.

- **Week-5& Week-6:** At the last phase, we will deploy final version of website from updating the website using the feedback. After successfully deploying the website, we will test the website on our side if all the functionalities will work then we publish the website on server or not then first we have to fix those problems then publish the website. At last, we will make some brief report (documentation) of our system.

b) List of final deliverables

1. Complete documentation (internal included)
2. Report for audit
3. User guide (includes deployment guide, end user guide etc.)

• Estimated total time: 18.5 hours:

We have spent 4 hours to collect appropriate information for system, 2 hours for objective, 4 hours for functionalities, and 2 hours for formatting document and other small task.

• H/W and S/W requirements

Hardware: -

User hardware requirement:

CPU	2 GHz
RAM	4 GB
HDD	64 GB
Monitor of PC/laptop	Colour monitor

Software: -

User required software: -

Operating system	windows 7+
Presentation Layer	PHP, CSS, HTML, JSP, FLASH
Documentation Tools	Ms office, Pdf viewer
Browser	Chrome, Mozila Firefox etc
HTML	HTML 5

- ## Technology / Architecture

  - Product development
  - software analysis
  - Patterns to design
  - UML tools and tech
  - Database server
  - SQL
  - PgAdmin
  - Draw. IO for ER diagrams tools
  - Strategy for Software Development
  - Editors - VS code, Atom
  - Web dev Languages - HTML, CSS, JS
  - Bootstrap
  - Different CDNs
  - Embedded JS
  - NodeJS
  - Express JS
  - APIs - Postman
  - Git, Github
  - Hyper

Techs Used and Benefits

HTML, CSS, JS, and Embedded JS are the four components of the front end. These four elements serve as the foundation for a web page, providing content, styling, and a dynamic user interface. We use Bootstrap and other different sites that provide icons and fonts for efficient styling, and we use CDNs for these things because it's very fast and easy to use, and it also provides content delivery faster

because it uses the shortest path, and it can send content from any location near the user.

Node JS – Express JS is used to create the back-end, and Express JS is a NodeJS framework. It's simple to set up and use, and it delivers excellent performance for real-time applications. Using Express and EJS, transferring material from one page to another and implementing numerous pages is a breeze. For the database, we use SQL. It does not necessitate coding skills — A huge number of lines of code are not necessary for data retrieval, and SQL query processing is extremely fast. With Express JS, it's a simple to do so.

APIs - For weather APIs, we'll use "https://openweathermap.org/api." With this API, we'll be able to acquire accurate weather for every location, and users will be able to make informed decisions about where they should go.

Git and Git-Hub will be used to store the project's repo, whereas Hyper is a terminal that will be used to explore and run commands rapidly during development.

- **Standard to be followed throughout the project**

  - Our project will have Clear definition of purpose, delivered on time and when needed, Reliability, Efficiency, accurate and precise user documentation, accurate and precise technical documentation.

  - We will keep these things to separate like the production, development, and test environments. This will ensure that the production system's security is rigorously maintained, while the development and test environments can maximize productivity with fewer security constraints.

  - Throughout the project, special attention must be paid to capturing and implementing security and privacy requirements on an ongoing basis. This must be reflected in the post-implementation review.

Standard to be followed for the source CODE:

- The name of global variable and the first letter of each class should be start with capital latter.
- We implement our code in a way that can be update whenever we find any problem on the system or if we want to add new feature then we can also add the code without any much complexity.
- Variable and function naming convention in camel case.
- Separate file for all utility function