



Project Detail Document

Project Title : Hotel Automation System

Group 23 - Members :

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Reporting TA : Mahir Shah

Date : 25-03-2022

Version number : 01

Start Date : 22-03-2022

End Date : 13-05-2022

Objectives of the project :

- The software aims to cater the needs of hotel managers, staff and the customers.
- Check availability of rooms and reserve rooms on the basis of customer's needs.
- Provide rooms according to customer's interest and Catering Services.
- Managing price / tariffs
- Maintaining discounts and points collection for the customers who visit frequently.
- The customers will be notified via Email/SMS notification for booking and whenever there is a cancellation
- Customer feedback system
- Manage billing activities during customer checkout and imposing charges for room cancellation.
- This product will automate room price adjustments on special occasions like festivals, Government holidays and weekends as per the decision of management.

Functionalities :

The system will help to reserve / book rooms using a website or on the spot, checking availability of rooms on the basis of the customers needs such as AC or Non-AC rooms, single or double bed etc. The customer can filter rooms on the basis of their needs and preferences and then book the room. If the rooms are available as per requirements of the customer, the software should help them book it. Otherwise, in case rooms are unavailable, then an apology message should be sent to the customer.

As soon as the customer books a room or cancels it, he/she would get an confirmation Email/SMS regarding successful booking/cancellation. Whenever any customer orders any kind of food item or requests any service through room service application, the customer should be notified through SMS that the service is confirmed and also should be notified when the customer is served successfully, for the service that was requested.

The hotel catering services manager should input the quantity and type of food items consumed by the customer, their token number, along with respective date and time. The system also aims to incorporate features for hotel staff and management like business analysis for a given period of time and feedback analysis using appropriate charts and statistics.

During the time of customer checkout this system helps in generating bills. When a customer checks-out, our software would generate and print the entire bill for the

customer and also the amount payable by them. Whenever any new customer comes, a unique Id number is assigned to that customer. So if the manager wants to query the details of any customer then he/she can easily get it using the customer Id. Also along with the customer details we also keep track of their visiting frequency so that we can provide them with special discounts. Based on the occupancy rate, it will automate room price adjustments on selected days like festivals, Government holidays and weekends as per the decision of management. The adjustment factor will be under the control of the manager.

There will be a provision for recording the customer feedback whenever the customer checks-out from the hotel. Also keeping in mind the security, only the manager would be able to access the information present in our system.

Project Deliverables :

(a) Milestones

1st and 2nd Week (25 March - 8 April 22)

- Planning
- Writing User Stories
- Data Collection / Analysis
- Problem Definition
- Specifying functionalities and Requirements
- Creating Github Repository

3rd and 4th Week (8 April - 22 April 22)

- Working on SRS (Software Requirements Specification)
- Working on DFDs / UML
- Software Designing / Prototyping
- Coding
- Unit Testing

5th and 6th Week (22 April - 12th May 22)

- (Integrated) Testing / Debugging
- Product feedback
- Working on Improvements / Enhancements
- Final Documentation

Estimated Total Time : - 93 hours

- **Designing : 42 hours**
 - Planning : 3 hours**
 - Data Collection : 5 hours**
 - Definition, requirements, SRS : 30 hours**
 - UML and DFD diagrams : 4 hours**
- **Development / Implementation : 38 hours**
 - Software design / Prototyping : 10 hours**
 - Coding : 20 hours**
 - Frontend Development : 10 hours**
 - HTML forms with POST request : 2 hours
 - Bootstrap packages to enhance the website : 5 hours
 - CSS to enhance user experience : 3 hours
 - Backend Development : 10 hours**
 - Model Deployment in Django : 4.5 hours
 - Views Creation in Django : 4.5 hours
 - URL management : 1 hour
 - Database Creation**
 - Unit Testing : 3 hours**
- **Testing : 8 hours**
 - Testing/Debugging: 5 hours**
 - Rectification and Improvements / Enhancements : 3 hours**
- **Final Documentation: 5 hours**

Hardware Requirements :

A standard device such as a working smartphone and / or laptop, Minimum RAM requirement - 4 GB, storage memory for storing customer and other relevant data, internet connectivity, standard working processor.

Software Requirements :

Any standard Operating System - Windows, MAC or Linux. CLI / GPU for graphic functioning.

Estimated Total time (in hours) : 85 hours

Technology :

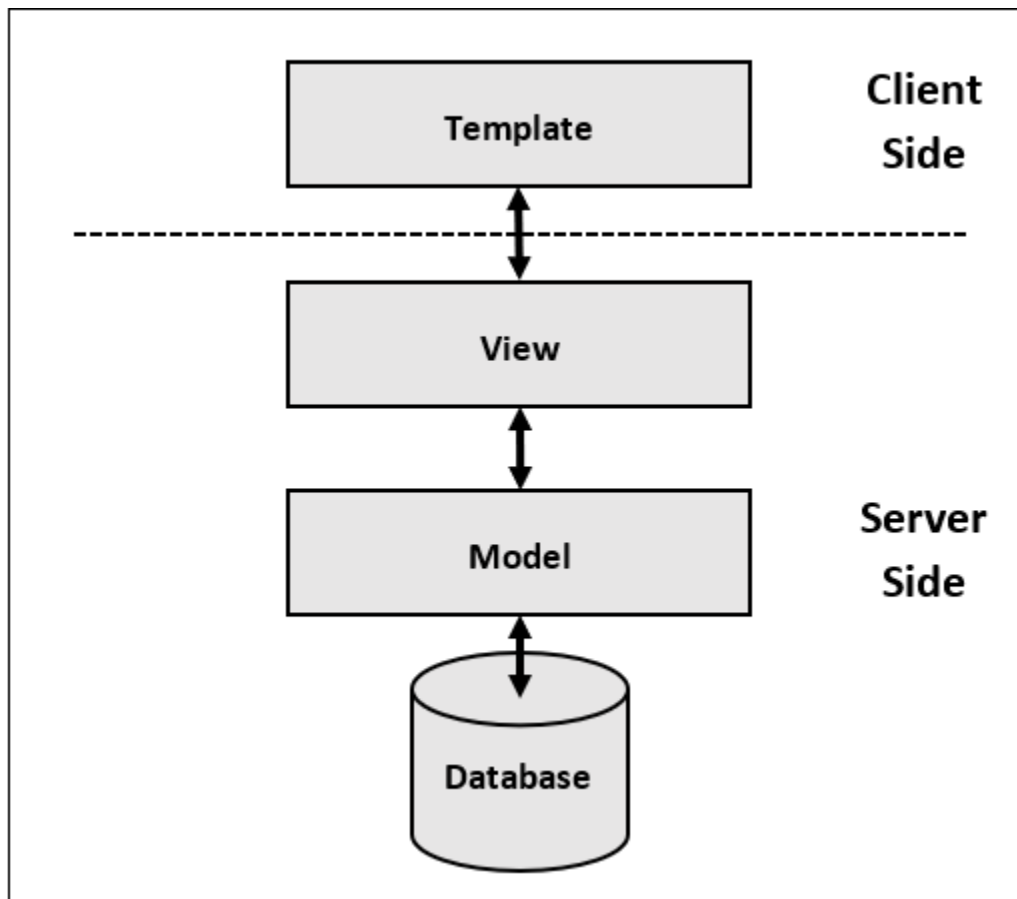
Frontend Technology : HTML, CSS, Bootstrap, JavaScript

Backend Technology : Python/Django, Dbsqlite

Platform : Visual Studio Code, PgAdmin

Hosting server : Github, Heroku

Architecture:



For our system we are using django as the backend technology. The above diagram shows the basic architecture of django.

Django uses request and response objects to communicate with server and the client. Here template on the client side contains all the HTML, CSS and JavaScript files which the client demands from the server.

The HTTP request made from the client goes to the server, then inside the server the corresponding view for that HTTP request is called. The view retrieves the data from the database via the model and then converts it into a HTTP response object and then sends it to the client.

Standard to be followed throughout the project:

The team carefully analyzes all the functionalities and objectives of the hotel management system. The team meticulously decides the time-frame of the project (5 weeks) and will abide by the time and resources available. The project follows the below mentioned standards:

- The project has a clear definition of purpose
- The application will have Simplicity of use
- The application will be difficult to misuse
- The project will be delivered on time and when needed
- The application has to be reliable to the users
- The application will be efficient
- The company will try to encounter minimum development cost
- Documentation of the project is to be clear and accurate

The assigned members are accountable for critical information they process in order to identify requirements and verify the final deliverables.

All applications will be reviewed at predetermined checkpoints of the SDLC by the application architect. Any deviations are reported and corrective action is determined prior to the application being released to production.

All the processes that are undergone during the project will be well documented and any changes in the functionalities of the application during the testing phase has to be reported and documented.