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Project and Professionalism

(6CS007)

A1: Project Proposal

Hotel Recommendation System

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Statement of Project Details

Project Title

Hotel Recommendation System

Academic Question

How can we search and inquiry about different top rated, famous, and best deals in less-time consuming and organized manner with the help of web-application?

Aims

The primary aims of this project are:

- i. To provide independent source of information for searching the ideal hotels
- ii. To compare the deals among the top and best deals ideals hotels
- iii. To provide more choices for users
- iv. To provide personalized search experience

Objectives

The key objectives of this project are:

- i. To give user friendly environment GUI interface for finding ideal hotels for users
- ii. To increase the productive rate of hotel owners
- iii. To reduce time for listing top deals ideal hotels

Artefact

The Artefact of this project is based upon client-server architecture which uses REST/JSON APIs through which the entire requests from the users are handled. A user friendly and intuitive GUI interface is provided to the user to interact with the system. Database server is used to keep entire request.

Project Proposal

Introduction

Hotel Recommendation System is online booking platform through which hoteliers and other providers can offer their products and booking services and users of the platform can use to make reservations as well find the best deal ideal hotels.

When user will make reservation through our website, user is committed in a direct contractual relationship to the hoteliers unless specially stated. User communicates directly to the relevant providers and sends the email of confirmation through our website.

The system will sort out the top rated ideal hotels on the basis of cost, rooms, availability and other context which make the user to compare the deals provided by the hoteliers that probably provide personalized searching experience. Also, system includes independent source of information of different hotels and provide more choices for the users which will be less time consuming with sourceful information of hotels and providers.

Background

Problem Domain

These days' people are expecting different information in short time and relatively different travellers around the world want to know about the hotel information for reservation in single platform.

Travelers and business class people are facing different scams in the hotel reservation when they book from different booking website. Through the website they reserve good suite but when they reach to the destined hotel they will saw it different and vague. As well as, talking about the booking process they will compare the prices and room and only few website provide comparison of hotels.

This problem leads to the well managed hotel recommendation system.

Problem Solution

For a frequent traveller and business class people, they always search for a good hotel to stay with minimal charge which is possible through a well sustainable hotel recommendation system.

Above mentions problems can be addressed through this system. People can compare different hotels on the basis of cost, room, availability through this system. User can have direct contact with the hoteliers and reserve with reliability. Moreover, user can have best search experience with lesser time and chances of being scammed will be less.

Academic Question

For a user, it is always difficult to go through different sites to compare hotels for reservation and it is also more time consuming. If the information of different hotels is included in single platform and user can compare at a time then it will be less time consuming. If the system can be operated through the web application then it will provide new search experience for a user and user can have multiple options for the reservation of hotel.

Users these days are quite busy and find quicker way to find solution to the problem and in the context of hotel reservation they always search for good room with ideal price and solution to this problem leads to the good hotel recommendation system.

Initial Research

Potential Users

According to the Condor Ferries (A hotel booking web application) has stated its report of number of hotels worldwide and the number is approximately 700,000. These hotels are contributing over \$3.41 trillion to the global economy. Also it has stated that, the desire for travel experiences and the increasing number of digital influence are fuelling the growth in the travel industry. (Ferries, 2021)

As per the increasing hoteliers and the travelers there is need of such platform where the hoteliers can show and travelers can view the desired hotels. So there is huge potential of this kind of system. Within our nation only there is huge scope in which this system can show the mere importance.

Similar Systems

For a traveler or business class people there was problem when it comes to search for a good hotel. Either they go through the broker or have to pay lot for top class ideal hotels. The first thing to do while planning a trip is to book a good place to stay. Booking a hotel online can be an overwhelming task with thousands of hotels to choose from, for every destination.

To overcome this situation and make it easier researchers had the concept of developing a Hotel Recommendation System. The aim of this hotel recommendation system is to predict and recommend hotel cluster to a user that he/she is more likely to book given hundred distinct clusters (Mishra, 2019). For this researchers have used various analytical approaches for reviews such as CATPAC (Content analysis program) software were used to analyze the consumers' reviews and ratings. Regression analysis and Analysis of Variance (ANOVA) support the finding to know about the images of hotel brands to check the customer loyalty (Bushra Ramzan, 2019).

Back then whenever a traveler wants to reserve a hotel he/she needs to go through every hotel websites and check out the prices and availability. When Tripadvisor was established in 2000 AD as a hotel recommendation system it has occupied the platform. There are various other Recommendation Systems at mean time like Trivago, booking.com, Agoda and many more which provide services through web application to reserve a hotel. This kind of systems helps people to decide whether the hotel is good or bad through application. Since system ranks the feedback based on the weight age of the keywords in database, so the result is appropriate as well user can decide which hotel to accommodate before they reach the place. (NevonProjects, 2021)

Analysis

The system above mentioned made the requirement clearer and more found out to be effective in some way. The proposed system would be having some distinct features and oriented to specific requirements of the client. As per the growing hoteliers and providers this system will be referred frequently.

Artefact

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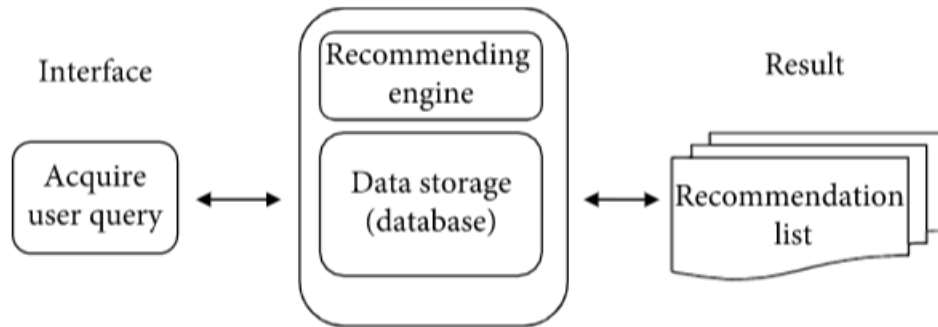


Figure 1: Generic architecture of recommender system

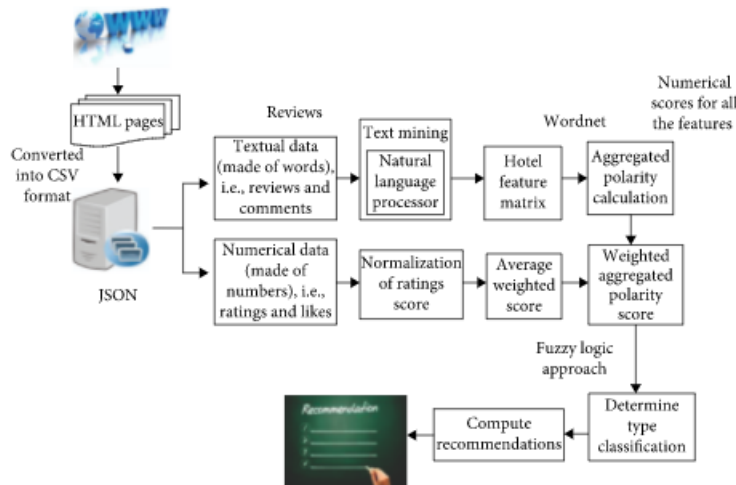


Figure 2: The proposed approach for hotel recommendation

This system is based upon 3-tier client server architecture. The GUI allows user to interact with the user and depending upon the input and what the user demands the client sends HTTP request to the server. Similarly, the server processes the nature of request and provides the information accordingly whereas the data is stored in JSON format. Due to its specific design and flexibility, it independently keeps on functioning regardless of the other component.

Functional Decomposition Diagram (FDD)

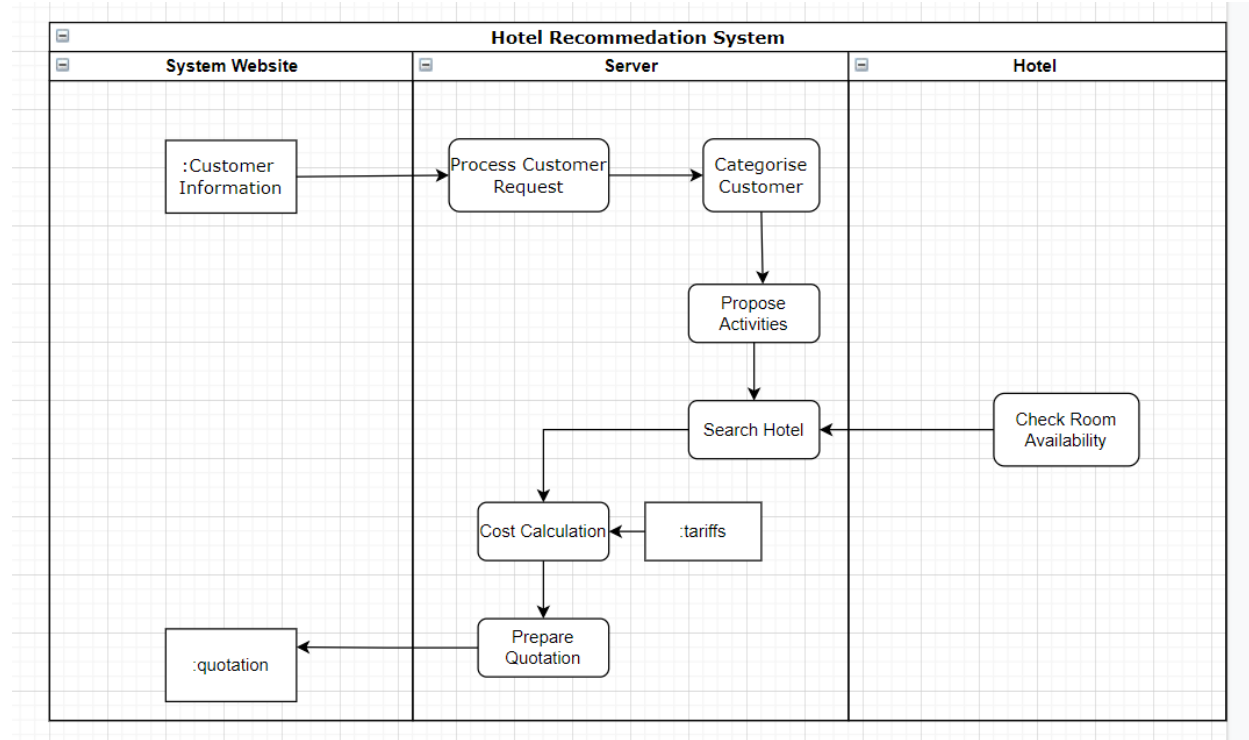


Figure 3: Functional Decomposition Diagram

Development Methodology

The development method or selection of method would be Scrum Framework from Agile. This project will be having short term deliverables on each iteration and scrum respects that deliverables to persist in each sprint. Thus, scrum fits just right in this project.

Gantt Chart

GANTT CHART

Hotel Recommendation System

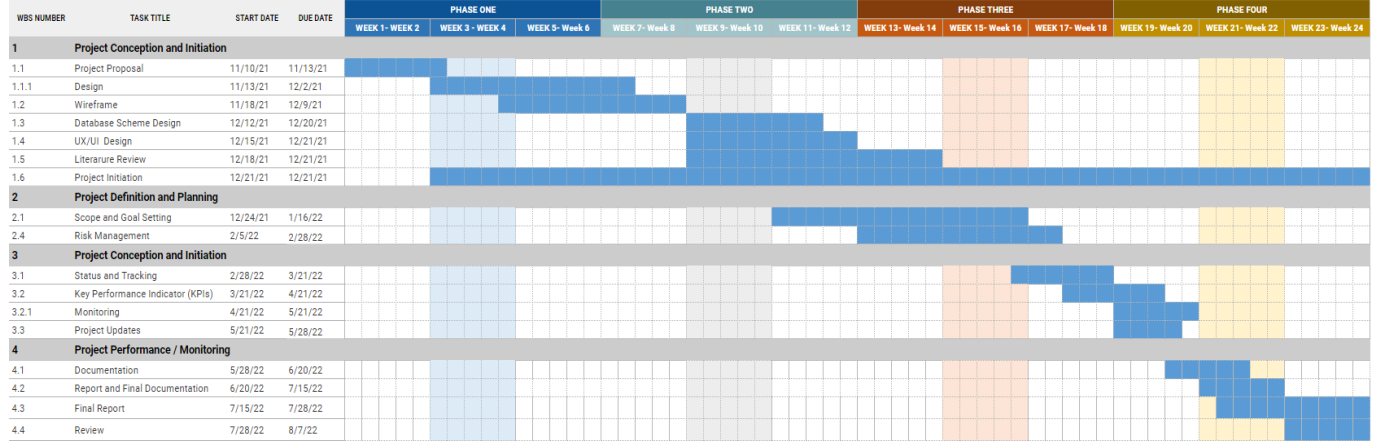


Figure 4: Gantt Chart

Tools and Techniques

The system uses following tools and techniques

1. **Programming Language:** Python

Python Programming Language is based through machine learning which is used to build the overall system. It supports multiple programming paradigms, object-oriented and functional programming.

2. **Frontend Framework:** React.js

For client-side view React.js is used as frontend library, which is modern, reliable, and relatively fast to approach.

3. **Web Framework:** Django

Django is a free Python-based open-source web framework that follows the Model-Template-Views (MTV) architectural pattern. Its primary goal is to ease the creation of complex, database-driven websites.

4. **Editor:** Visual Studio Code

Visual Studio Code is the text editor and home to all the development that has taken place. Due to its extensibility and Microsoft support its has been the choice of developer.

5. **Extensions:** Prettier

Prettier is the extension used to keep the code clean and indented.

6. **API and Database Host:** Heroku

Heroku is a platform as a service (PaaS) that enables developers to build, run, and operate applications entirely in the cloud.

7. **VCS:** Git

Git has been used for the version control and GitHub has been the remote repository. Git provides the extraordinary features like code rollbacks, comparison and many other.

8. **Frontend Host:** Firebase

Additional Information

Resource

System Requirement

- i. Good Bandwidth
- ii. A PC
- iii. 2 Static reserved Ips

Client

Mr. Pankaj Niraula – Project Supervisor at Herald College Kathmandu

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