FINAL YEAR PROJECT

BATCH: 2022-2026

StayPoint

Intelligent Room Locating System with real time availability & ML based Recommendation

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PROJECT IDEA DESCRIPTION

StayPoint is an online platform designed to assist students in finding suitable PG (Paying Guest) accommodations near college campuses, especially in Tier 2 and Tier 3 cities where online PG listings are either limited or outdated. The platform aims to centralize local PG data by gathering accurate and real-time information directly from local sources.

In many Tier 3 cities, college hostels have limited capacity, which forces students from other cities/states to search for off-campus PGs. However, due to lack of structured and verified information online, this becomes a stressful and time-consuming task.

To solve this, **StayPoint** offers:

- A central repository of verified PGs with filters based on distance, rent, amenities, and food availability
- Room availability status in real-time
- Location-based listing using Google Maps integration
- An intelligent **ML-based** Recommendation system, which recommends a suitable PG based on the rent and other factors given by the student.

PROJECT SYNOPSIS

PROBLEM STATEMENT

To develop a smart, student-focused PG rental platform that provides real-time information about PG availability near college campuses and uses machine learning to predict ideal PGs based on rent, amenities and location. The project solves the challenge of finding suitable PG accommodations for students coming from different cities, especially in Tier 2 and Tier 3 locations where online PG data is scarce or outdated.

OBJECTIVES

- Develop a responsive web application for PG listings and searches with dummy data initially.
- Collection of raw and accurate data by physically visiting the nearby PG owners.
- Provide a clean, user-friendly UI with powerful filters and sorting on the real collected PG data.
- Build the backend using **Java Spring Boot** and the frontend using **React.js**
- Location-based listing using Google Maps integration.
- Implement Machine Learning model for predicting ideal PG for the students based on the rent and some other amenities which they are comfortable with. (Major phase)

TECHNOLOGY STACK

Layer	Tools/Technologies
Frontend	React.js, Tailwind CSS
Backend	Java, Spring Boot
Database	MySQL
Storage	Appwrite/Cloudinary Storage (for images)
ML	Python (scikit-learn), Flask API (major)
Others	GitHub, Figma (UI design)

Proposed Features

- Search PGs by location, rent range, and amenities
- Real-time room availability status
- PG registration panel for owners
- Upload photos and details of PGs
- Develop Android/iOS App version
- ML based Recommendation model
- Filter/sort by distance, rent, and facilities
- Integrate Chatbot for inquiries
- Map-based location view (Google Maps integration)

PROS (Advantages)

- **Real-world problem solving**– Helps outstation students find PGs within their budget easily.
- **ML integration adds intelligence** – Smart recommendation feels more modern & advanced
- **User-centric experience** – Personalized suggestions based on user budget and filters.
- **Reduces manual effort** – Users don't need to scroll through irrelevant PGs.
- **Scalable solution** – Can expand to other cities and integrate booking, payments, verification, etc.
- **Data-driven insights** – PG owners can also benefit from understanding budget trends.

CONS (Challenges)

- Maintaining updated availability
- PG Owners may not be tech-savvy
- High competition (e.g., OLX, MagicBricks, Justdial)
- Scalability beyond one city
- Security / trust for students

CONCLUSION

StayPoint tackles a real-world issue by making PG search efficient and accessible for students. With the integration of machine learning in the major project phase, the system will transform into an intelligent platform capable of prediction and user-based recommendations.