

A
PROJECT REPORT
ON
LocalLens
Submitted in partial fulfilment for the award of
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Institute of Emerging Technologies
Authorized Training Centre



Under the Guidance of Mrs.Sampada Tarare

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Certificate

This is to certify that the project report entitled **LocalLens: The web based platform for all PG and Mess related services** is a bonfire work carried out by **1.Rohit Ramesh Ardalkar, 2. Nikhil Kundlik Bhong, 3. Anurag Vijayrao Thakare, 4. Mrunal Madhukar Gaikwad, 5. Praful Kumar Pandey** submitted in partial fulfillment of the requirement for the C-DAC ACTS, DAC course in the Institute of Emerging Technology in the batch of March 2024.

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ABSTRACT

This project offers a location-based service designed to simplify users' search for amenities and services near any specified location. Whether users are seeking accommodations like PGs, hostels, flats, or mess facilities.

By harnessing geolocation technology, the platform accurately pinpoints the user's current or chosen location. Leveraging this data, it retrieves relevant information about nearby businesses and services, empowering users to make informed decisions about where to stay or where to access essential services within their immediate vicinity.

Moreover, to cater to users who share accommodations, the platform incorporates intuitive functionality to manage this aspect seamlessly. This includes features to streamline roommate arrangements, facilitate communication, and ensure transparent coordination of shared living expenses. With this inclusive approach, the platform aims to enhance the overall user experience and meet the diverse needs of its audience effectively.

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1.INTRODUCTION

This project offers a location-based service designed to simplify users' search for amenities and services near any specified location. Whether users are seeking accommodations like PGs, hostels, flats, or mess facilities.

By harnessing geolocation technology, the platform accurately pinpoints the user's current or chosen location. Leveraging this data, it retrieves relevant information about nearby businesses and services, empowering users to make informed decisions about where to stay or where to access essential services within their immediate vicinity.

1.1 Purpose

The purpose of the described project is to provide a comprehensive location-based service that simplifies the process of finding amenities and services near a user's specified location. This platform leverages geolocation technology to accurately determine the user's current or chosen location and retrieve relevant information about nearby accommodations, such as paying guest (PG) facilities, hostels, flats, and mess services.

1.2 Need Of LocalLens

The need for this project arises from several key challenges and opportunities in the current market for accommodations and essential services:

1. **Fragmented Information:** Information about accommodations and essential services is often scattered across various platforms and sources. Users spend considerable time and effort searching for reliable and relevant information. This platform centralizes this data, making it more accessible and convenient for users.
2. **Geolocation Advantage:** Utilizing geolocation technology allows for a more personalized and accurate search experience. Users can quickly find services and amenities near their current or specified location without having to manually input multiple search criteria.
3. **Growing Urbanization and Mobility:** As urbanization increases and more people move to cities for work or education, the demand for convenient and efficient ways to find accommodation and related services grows. This platform addresses the needs of a mobile and dynamic population.
4. **Shared Accommodation Management:** Many people, especially students and young professionals, share accommodations to reduce living costs. Managing shared living arrangements, communication, and expenses can be complex and prone to misunderstandings. The platform's features for roommate coordination and expense management simplify these aspects, reducing potential conflicts and enhancing the living experience

1.3 Overview

This project aims to create a location-based service platform that simplifies the search for nearby accommodations and essential services. By using geolocation technology, it accurately identifies the user's location and provides relevant information on options like PGs, hostels, flats, and mess facilities. Additionally, the platform includes features to

manage shared accommodations, such as roommate coordination, communication, and expense management. This solution addresses the challenges of fragmented information, time-consuming searches, and the complexities of shared living, enhancing the overall user experience and catering to the needs of a mobile and urban population.

2. Problem Definition and scope

2.1 Problem statement and Scope of the Project

Handle the technical issues you might face in your project:

Data Modelling and Database Design:

Invest time in planning your database schema. Consider using an Object-Relational Mapping (ORM) tool like Hibernate in Spring Boot to simplify database interactions and reduce complexity. Regularly review and refine your schema as your project evolves.

User Authentication and Authorization:

Utilize established authentication libraries (e.g., Spring Security) to handle user authentication and authorization. Follow best practices, such as using hashed passwords, implementing secure password reset workflows, and applying role-based access control.

Concurrency and Data Consistency:

Use database transactions effectively to manage data consistency and handle concurrent updates. Understand isolation levels and optimistic/pessimistic locking strategies to prevent conflicts and maintain data integrity.

Search and Filtering:

Consider using search engines like Elasticsearch for efficient and fast search capabilities. Implement pagination and apply indexing to improve search performance. Cache frequently used search results to reduce database load.

2.2 Goals and Objective

The goal of this project is to develop a user-friendly, location-based service platform that simplifies the search for nearby accommodations and essential services. It aims to provide accurate, relevant information and features for managing shared living arrangements, enhancing decision-making and overall user experience.

2.3 Product Function

- User Registration/Login: Allow users to create accounts or log in to access personalized features.
- Location Search: Enable users to search for amenities and services near a specified location.

- **Geolocation:** Utilize geolocation technology to determine the user's current location automatically.
 - **Data Retrieval:** Query the database to fetch information about nearby amenities and services based on location.
 - **Results Display:** Present the retrieved information to users in a user-friendly format, such as a list or map view.
 - **Amenity Details:** Provide detailed information about each amenity or service, including contact details, address, and user ratings if available.
 - **Navigation:** Integrate navigation functionality to guide users to their selected amenities or services using maps or directions.
 - **Contact Information:** Display contact details (phone numbers, email addresses) for amenities/services, allowing users to contact them directly.
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2.4 User Characteristics

User Model Functionality

- **Registration and Login:**
 - **Register:** Create a new account by providing personal details and contact information.
 - **Login:** Access the platform using email and password or social media accounts.
- **Profile Management:**
 - **Edit Profile:** Update personal information, contact details, and preferences.
 - **Preferences:** Set and update accommodation preferences, budget range, and location preferences.
- **Geolocation Services:**
 - **Current Location:** Automatically detect and use the user's current location.
 - **Custom Location:** Allow users to specify a different location for searching accommodations and services.
- **Search and Filter:**
 - **Search:** Enter keywords or use location to search for accommodations.
 - **Filter:** Apply filters for price, type, amenities, distance, and ratings.
 - **Sort:** Sort search results by relevance, price, distance, or ratings.
- **Accommodation Details:**
 - **View Details:** See comprehensive information about each accommodation, including amenities, availability, and pricing.
 - **Photos and Reviews:** View photos and read user reviews and ratings.

Owner Model Functionality

- **Registration and Login:**
 - **Register:** Create an account by providing business details and contact information.
 - **Login:** Access the platform using email and password or business accounts.
- **Profile Management:**
 - **Edit Profile:** Update business information and contact details.
 - **Property Listings:** Manage multiple property listings from a single account.

- **Property Management:**

- **Add Listings:** Create new accommodation listings with detailed information, photos, and pricing.
- **Edit Listings:** Update or edit existing property listings.
- **Availability Management:** Update the availability status of accommodations.

- **Pricing and Offers:**

- **Set Prices:** Define and update pricing for different accommodations.
- **Promotions:** Create special offers or discounts to attract users.

ER-Diagram


