VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JnanaSangama", Belgaum -590014, Karnataka.

MINI PROJECT-1 REPORT
on

Urban PG

Submitted by

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Under the Guidance of
Dr. Shyamala G
Assistant Professor, BMSCE

in partial fulfillment for the award of the degree of
BACHELOR OF ENGINEERING
in
COMPUTER SCIENCE AND ENGINEERING

B.M.S. COLLEGE OF ENGINEERING
(Autonomous Institution under VTU)
BENGALURU-560019
Nov-2023 to Feb-2024

B. M. S. College of Engineering,

Bull Temple Road, Bangalore 560019

(Affiliated To Visvesvaraya Technological University, Belgaum)

Department of Computer Science and Engineering

<u>CERTIFICATE</u>

This is to certify that the project work entitled "**Urban PG"** carried out by **ARCHIT MEHROTRA(1BM21CS), ASHISH SERU(1BM21CS034), DIKSHYA ARYAL(1BM21CS058) and ANITHA K J(1BM22CS401)** who are bona fide students of **B. M. S. College of Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visveswaraiah Technological University, Belgaum during the year 2023-2024. The project report has been approved as it satisfies the academic requirements in respect of Mini Proejct-1 **(22CS5PWMP1)** work prescribed for the said degree.

Signature of the Guide   Signature of the HOD

Dr. Shyamala G   Dr. Jyothi S Nayak

Assistant Professor, Dept. of CSE   Prof.& Head, Dept. of CSE

BMSCE, Bengaluru   BMSCE, Bengaluru

External Viva

Name of the Examiner   Signature with date

1._____   _____

2. _____   _____

B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We ARCHIT MEHROTRA (1BM21CS0), ASHISH SERU(1BM21CS034), DIKSHYA ARYAL (1BM21CS058) and ANITHA K J (1BM22CS401) students of 5th Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this Project Work-3 entitled "Urban PG" has been carried out by us under the guidance of Namratha M, Assistant Professor, Department of CSE, B. M. S. College of Engineering, Bangalore during the academic semester Oct 2022- Feb 2023.

We also declare that to the best of our knowledge and belief, the development reported here is not from part of any other report by any other students.

Signature

ARCHIT MEHROTRA (1BM21CS)

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1.Introduction

"Urban PG" is a mobile application designed to streamline the process of finding suitable Paying Guest (PG) accommodations within a 5 km radius of BMSCE. Catering specifically to new students at BMSCE, this project offers a user-friendly interface and comprehensive information to simplify the accommodation search process.

Key Objectives:

- User Onboarding: Implement a seamless sign-up process to facilitate user engagement and account creation.
- Location-Based Search: Develop a robust search functionality that allows users to filter PG options based on preferred locations near BMSCE.
- Detailed PG Descriptions: Provide detailed information on PG facilities, occupancy, and price range, accompanied by visual content such as photos.
- Effortless Booking: Integrate a secure booking system within the app to allow users to reserve their chosen PG directly through the platform.
- Real-Time Updates: Implement a notification system to keep users informed about the latest availability and updates regarding PG accommodations.

Expected Outcomes:

- Enhanced User Experience: Create an intuitive and user-friendly interface for a seamless accommodation search experience.
- Informed Decision-Making: Empower users with comprehensive information, enabling them to make informed decisions about their accommodation choices.
- Efficient Booking Process: Simplify the booking process, reducing the need for intermediaries and ensuring a straightforward reservation experience.
- Timely Updates: Keep users in the loop with real-time notifications, ensuring they have access to the latest information on PG availability.

"Urban PG" goes beyond being a mobile application; it serves as a vital companion for students transitioning to BMSCE. By providing a centralized platform for accommodation search, the project aims to simplify and enhance the overall experience of finding suitable PG accommodations for BMSCE students.

2. Design Layouts: Screenshots of Mobile App
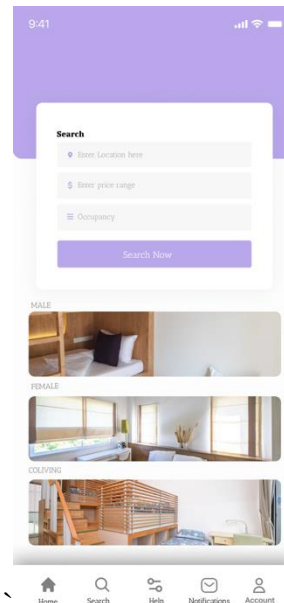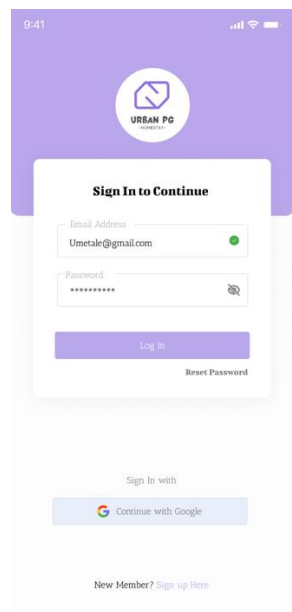

Fig 2.1: Starting Page

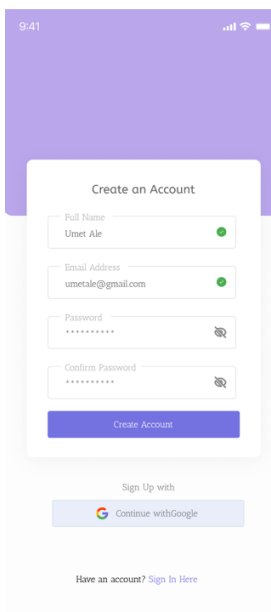Fig 2.2 : Home Page

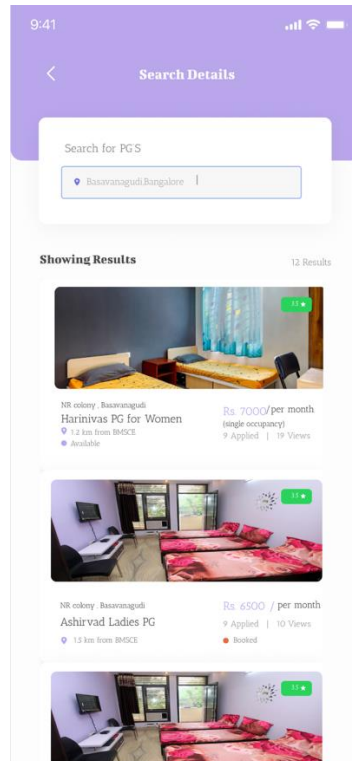Fig 2.3: Sign In page

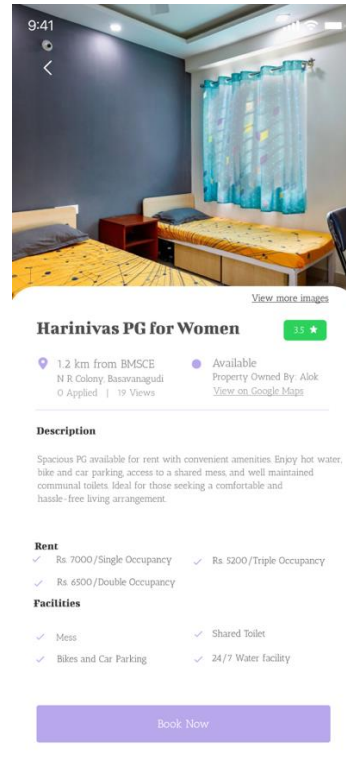Fig 2.4: Create Account page

Fig 2.5: Search Page
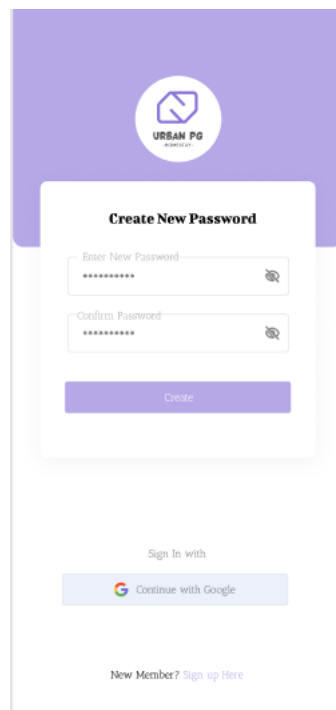

Fig 2.6: Description Page

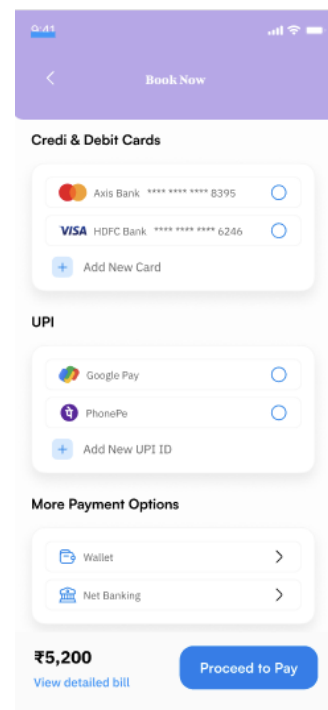

Fig 2.7 :Reset Password Page
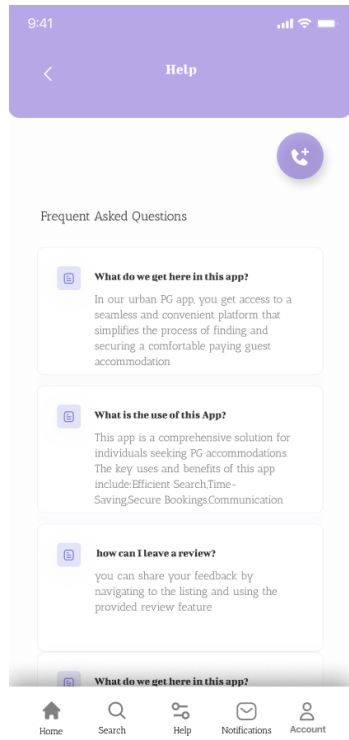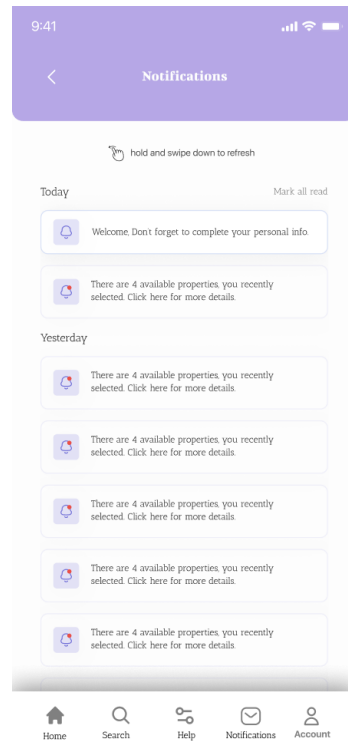

Fig 2.8: Payment Page

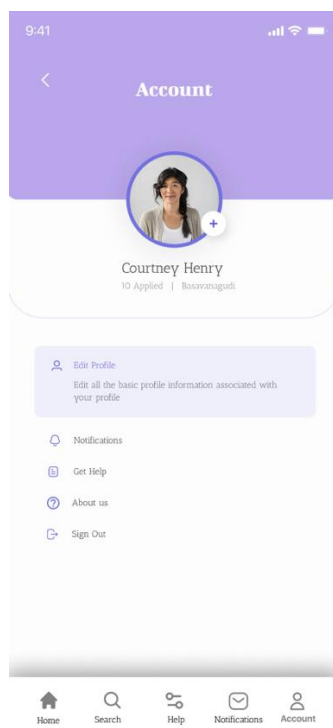Fig 2.9: Help Page

Fig 2.10: Notification page

Fig 2.11: Account Page

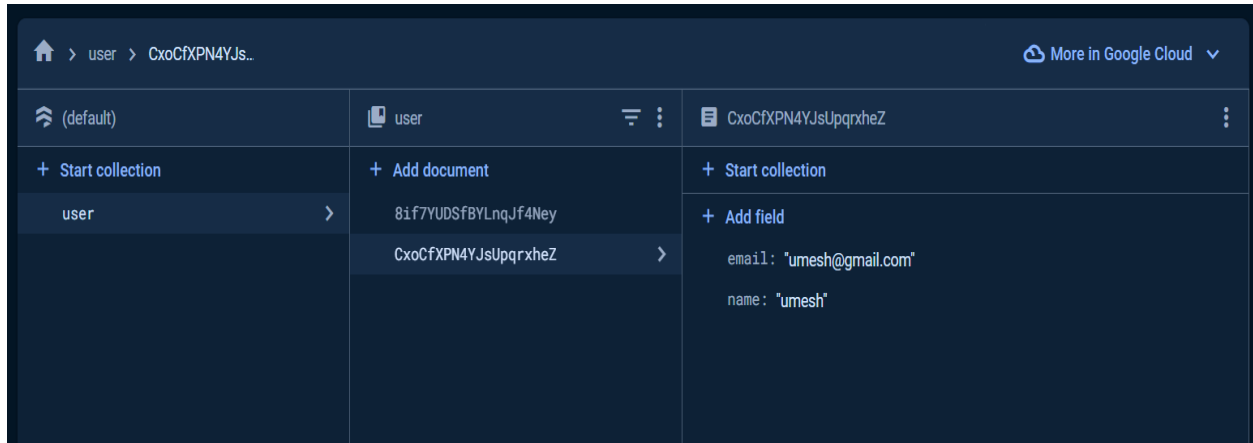# 3. Database Table Screen shots

Fig 3.1: Signup Database schema

4.Requirements

4.1 Software Requirements

1.Figma:
- Version: Latest stable release
- Purpose: Figma will be used for designing the user interface (UI) and creating prototypes.

2.Flutter:
- Version: Latest stable release
- Purpose: Flutter is the framework for building the cross-platform mobile application.

3.Firebase:
- Authentication:
    Firebase Authentication for user login and registration.
- Firestore Database:
    Firestore database for storing and retrieving expense data.
- Cloud Functions:
    For serverless computing, if needed.
- Firebase Cloud Storage:
    For storing any media or large files if required.

4.2 Hardware Requirements

1.Development Machine:
- Processor: Dual-core 2.0 GHz or equivalent
- RAM: 4 GB
- Storage: 20 GB free space
- Operating System: Windows 10 or higher versions

2.Target Devices:
- Android:
    Android version compatible with the latest Flutter and Firebase SDK.

4.3 Functional Requirement:

1. User Authentication:
   Users should have the ability to register securely using email/password or social media accounts.A secure login process should be implemented, allowing users to access the application.
2. PG Search and Exploration:
   Users can search for PG accommodations based on preferred locations within a 5 km radius of BMSCE. Each PG listing should include detailed information such as facilities, occupancy, price range, and photos.
3. User Profile Management:
   Users should be able to manage their profiles, including updating personal information and preferences.The app should store user preferences to enhance the accommodation search experience.
4. Booking and Reservation:
   Provide a seamless and secure booking process for users interested in reserving a PG.Integration with payment gateways to facilitate secure transactions for booking payments.
5. Location-Based Services:
   Utilize location data to enhance search results, ensuring accurate and relevant PG options based on the user's current location or specified preferences.
6. User Support and Assistance:
   Implement a support system to address user queries and issues promptly.
7. Security Measures:
   Implement robust security measures to protect user data and payment information.

4.4 Non-Functional Requirements

1. Usability:
   The UI should be intuitive and user-friendly. Consistent navigation across platforms
2. Performance:
   Smooth and responsive user interface. Quick loading of data and images.
3. Scalability:
   The system should be scalable to handle an increasing number of users and transactions.
4. Security:
   Encryption of sensitive user data. Secure communication between the app&firebase.
5. Reliability: The app should be reliable, with minimal downtime.
6. Offline Capability: Basic functionality should be available offline with data synchronization when the internet is restored.

5. Learnings from project

Learning from a project, especially one involving the development of a mobile app like an Urban PG using Figma, Flutter, and Firebase, can be multifaceted. Here are some potential learnings that can arise from such a project:

1. Understanding Cross-Platform Development:
   Gaining proficiency in cross-platform mobile development using Flutter. Understanding the advantages and challenges of building applications that can run on both Android and iOS.

2. User Interface (UI) and User Experience (UX) Design:
   Learning how to design a user-friendly and aesthetically pleasing UI using Figma. Understanding the importance of UX in creating an intuitive and enjoyable app for end-users.

3. Firebase Integration:
   Understanding the integration of Firebase services for authentication, database, cloud storage. working with real-time data synchronization and grasping the benefits of a serverless backend.

5. Asynchronous Programming:
   Understanding and implementing asynchronous programming, which is crucial for handling tasks like data fetching and updates in Flutter.

6. Mobile App Lifecycle:
   Gaining insights into the lifecycle of a mobile app, including state management, widget lifecycle, and handling app state changes.

8. Cloud Storage and File Management:
   Learning how to integrate cloud storage for file management, such as storing and retrieving images or receipts associated with expenses.15

9. Collaboration and Version Control:
   Learning how to collaborate effectively on a project using tools like Figma for design collaboration. Understanding version control systems for managing code changes.

10. Testing and Debugging:
    Gaining experience in testing and debugging Flutter applications.

12. Real-world Project Management:
    Understanding the various phases of a project, from planning and design to implementation and maintenance. Adapting to unforeseen challenges and refining project management skills.

6.References

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- https://dart.dev/
- https://youtu.be/1ukSR1GRtMU?feature=shared
- https://youtu.be/x0uinJvhNxI?feature=shared