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ijircce@gmail.com



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An Android Based Food and Residential Service Providing System

Arwaz Khan, Ankita Kshatriya, Suman Kaiwart, Siddharth Kumar, Samridhi Tandan

Department of Computer Science and Engineering, Government Engineering College, Koni, Bilaspur, Chhattisgarh, India

ABSTRACT: It is an Android application built with the perspective to help students find better places to stay and better food in their nearby location easily. The app consists of the following sections - 1. Hostels- This will show the list of Hostels (paying guests) nearby, along with the necessary details the user may require. 2. Tiffin centres- This will display the list of Tiffin Centres nearby, along with the necessary details the user may require. 3. Safety Service-It is one of the features in the app for the safety of women. The user has to enter 3 contacts that will be saved as Emergency numbers, and on shaking the phone in case of emergency, the number is dialed and a call goes to the respective contact. 4. HostelMate Zone- This is the feedback kind of section, where the user can post their reviews and expectations for the betterment of the app.

KEYWORDS: Android, Kotlin and XML, Google Firebase, GitHub, Whimsical, Google Form.

I. INTRODUCTION

HostelMate is an Android Application that collects data manually from the students and local people and helps the students to find a decent place to stay, and good quality food service according to their requirements. Once the user logs in and authenticates their details, they can browse for the Tiffin Centres, Hostels/PGs in their nearby location. The results include the prices, reviews and ratings, location, contact details and timings of the Facility. They can even add a new Tiffin Centre, Hostel's details. The app includes HostelMate Zone section where the user can find the FAQs, post a new Query or post any suggestion for the betterment of the app. As we know, Food and Shelter are the two basic priorities of every individual. In the true sense, Food does not mean "something that satisfies hunger", it should be nutritious, and Shelter does not mean "a house", it is a home, similarly hostel is the second home to a student, a place which each one of us can boast about; a place where we return after spending a hectic day.

Students from various cities take admission in a college. Most of them suffer to find basic necessities like finding a good hostel and tiffin service. And even if they do find the resources, it is very hard to find reliable reviews and feedback in an unfamiliar city. At the same time, the students who are living in the city for a long time and the local people, know a lot about the available resources. Driven by this idea, we aim to build an Android Application that bridges this gap and solve this problem.

II. LITERATURE REVIEW

The existing system is not a proper system which can overcome the challenges faced by students. Our project does. There exists several applications that showcase their own Tiffin Service details and their services, which will basically facilitate only the Owner.

What if the user wants to have a glance at all the services nearby him/her and then compare them?

We may have many applications related to our field and we have found that mobile applications are the best and efficient solution to any problem.

Similar to our App, there may be applications like:

- College app: This kind of application may help the user find better options of college for himself/herself and compare them accordingly. There may be options like Rating, Fee details, Location, etc.
- Food App: This kind of application may help users order food online.

Like other applications, our application is also built with a sole purpose to benefit users, more specifically the Students by saving their precious time, which they might spend in searching for better food and hostel for themselves. The application will best serve as the solution to the problem faced by Students who settle in different/ unknown cities where they are not acquainted with many people as the place is new to them. The User has to first register himself/herself in the application. After Logging into the Application, the user will come across four sections: Hostel, Tiffin Centres, Safety Service and HostelMate Zone. The application lists the Tiffin Centres in the nearby location and also the relevant details such as Cost, Rating, etc.

Similarly, the application also lists down the Hostels in the nearby location along with the necessary details such as the Location, Rent, Rating, etc. More basic aspects of the application includes the Safety Service and the HostelMate Zone, wherein the Safety Services provides an alarming feature in case of any emergency. And in the HostelMate Zone, the user may review the app or send feedback, which will be considered further.

III. ARCHITECTURE

HostelMate, an android application project based on some basic fundamental concept, techniques and approach that we have gained during our vocational training period. The purpose of making this application is to resolve the problem of students and persons who came out of their home town for their duties and face the problem of finding perfect shelter and food for themselves. The frontend of this application is designed by using XML (extensible markup language) and the backend is highly supported by the popular known language Kotlin. This application is comfortable and convenient to all of its users. The process included in this application is the collection of information which we had done by survey. Different card views are present in its interface like tiffin, Hostels, Feedback etc. this card views deals with the details of each grids. This application includes the feature of adding new services by the seller. When the details are filled completely, it will be visible on menu screen. It is time saving application. Anyone can use without any type of confusion by just Login their mail id.

The reason behind using Kotlin as a backend is that

- Kotlin is a cross-platform programming language that may be used as an alternative to java for android development.
- Kotlin is much simpler for beginners to try as compared to java.
- Kotlin is sponsored by Google, announced as one of the official languages for Android Development in 2017.
- Kotlin programming language is multi-platform, i.e. easily executable on a Java Virtual Machine.

In our project we have made use of firebase for the database. Firebase is a backend-as-a service, and it is a real-time database which is basically designed for mobile applications. It is a mobile platform that helps you quickly develop high-quality apps, grow your user base. Firebase is made up of complementary features that we can mix-and-match to fit our needs, with Google Analytics for Firebase at the core. We can explore and integrate Firebase services in our app directly from Android Studio using the Assistant window.

Firebase provides with the following key features useful in App development:

- Authentication: It supports authentication using passwords, phone numbers, Google, Facebook, Twitter, and more. The Firebase Authentication (SDK) can be used to manually integrate one or more sign-in methods into an app.
- Real-time database: Data is synced across all clients in real time and remains available even when an app goes offline.
- Hosting: Firebase Hosting provides fast hosting for a web app; content is cached into content delivery networks worldwide.
- Test lab: The application is tested on virtual and physical devices located in Google's data centres.
- Notifications: Notifications can be sent with firebase with no additional coding.

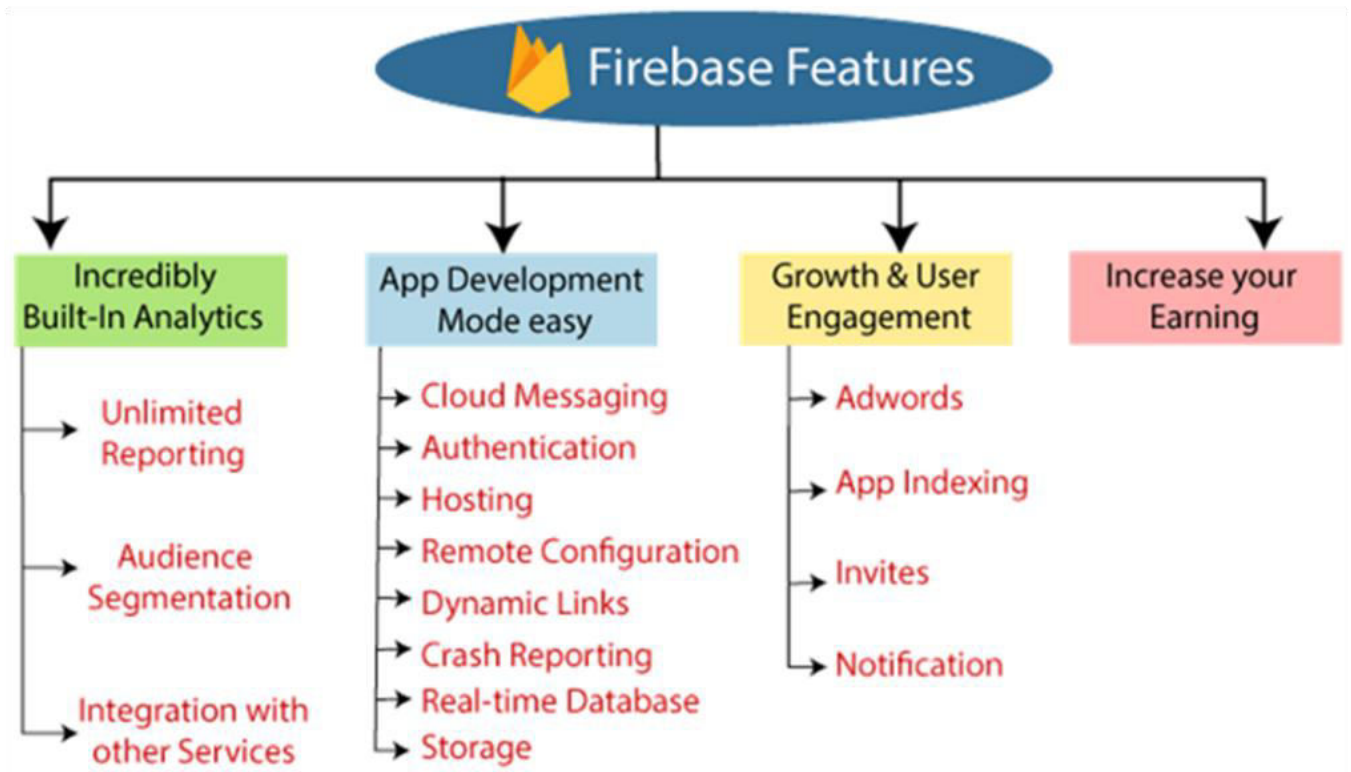


Figure 1: Features of Firebase

It is an offline informatics application which gives only basic details about hostels and tiffin centres. It is very beneficial application some benefits are:

- It is time saving application.
- Familiar with user.
- Relevant for every new comer in the town/city.

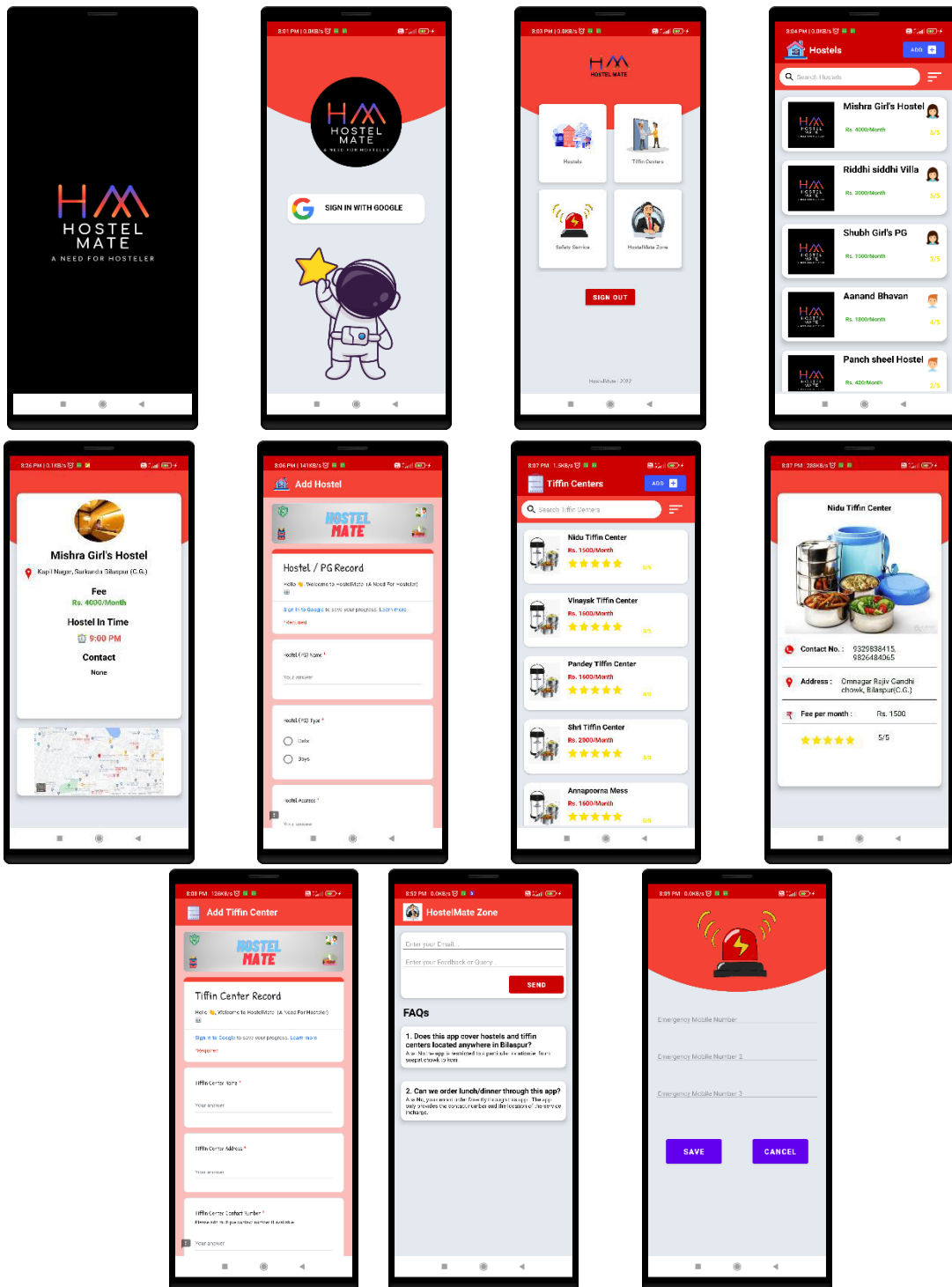
Functionality & Concepts used in the App:

The App has a very simple and interactive interface that helps the user to find the best hostels and tiffin centres near the GEC Bilaspur.

Following are a few android concepts used to achieve the functionalities in the app:

- Layout: Most of the activities in the app uses a relative layout, linear layout, frame layout, card view, grid view, etc.
- Firebase Authentication: We used Firebase Authentication Using Google Sign-In which is a simple and fast method for authentication.
- Firebase Firestore: To store hostels and tiffin center details etc.
- Firebase storage: To store images related to hostels and the app etc.
- Firebase Realtime Database: For Feedback section.
- RecyclerView: To display the list of hostels and tiffin centres present in that location.
- WebView & Google Form: To collect the data (Hostels and Tiffin Center) from the user of our app.
- SharedPreferences: To Store the mobile number for safety Service (Currently not working).
- ViewBinding: it creates direct references to views
- Data Class: For Hostel and Tiffin Center Model
- Picasso Library: For image loading from the internet
- android-gif-drawable: For rendering gif present at the login page
- Other Tools used: Canva for logo design and Whimsical for wireframing and flowchart design.

IV. RESULTS - SCREENSHOTS



V. CONCLUSION

The conclusion of the application is to make a person's work easier to find suitable food and hostel/PG. HOSTELMATE is an android based application that will manage the problem of tiffin and hostel/pg's faced by a person. The HostelMate application is developed by using Android studio: XML design, Kotlin logic. This system has better usability and is also adaptable by any operating system. This system is a user friendly system for admin to manage the whole activity. The system is operated at a high level of efficiency and all users associated with the system will understand its advantage. This application/system solves the problem. It was intended to solve the requirement specification. This informative application is a very effective tool which can be used to a great extent. This is very helpful for every newcomer. This app helps to reduce their stress by minimizing time and requiring updates.

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BIOGRAPHY

[1] **Arwaz Khan** pursuing Bachelor of Technology with major in Computer Science and Engineering from Government Engineering College, Bilaspur (C.G.) Affiliated to Chhattisgarh Swami Vivekanand Technical University, Bilhailai (C.G.).

[2] **Ankita Kshatriya** pursuing Bachelor of Technology with major in Computer Science and Engineering from Government Engineering College, Bilaspur (C.G.) Affiliated to Chhattisgarh Swami Vivekanand Technical University, Bilhailai (C.G.).

[3] **Suman Kaiwart** pursuing Bachelor of Technology with major in Computer Science and Engineering from Government Engineering College, Bilaspur (C.G.) Affiliated to Chhattisgarh Swami Vivekanand Technical University, Bilhailai (C.G.).

[4] **Siddharth Kumar** pursuing Bachelor of Technology with major in Computer Science and Engineering from Government Engineering College, Bilaspur (C.G.) Affiliated to Chhattisgarh Swami Vivekanand Technical University, Bilhailai (C.G.).

[5] **Samriddhi Tandan** pursuing Bachelor of Technology with major in Computer Science and Engineering from Government Engineering College, Bilaspur (C.G.) Affiliated to Chhattisgarh Swami Vivekanand Technical University, Bilhailai (C.G.).



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