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ABSTRACT

The numbers of smart phone users have increased exponentially irrespective of the platform within no time. Hence there arose several opportunities for both users and developers. User would be sure of downloading an application which provides more features, easier to use, responsive etc. Keeping these circumstances in the mind the developer has to work accordingly and provide an attractive interface which attracts the user and obtain a better feedback, which motivates the developer in making the application better every day by launching updates and by adding more features to it. In today's world there arises multiple scenarios where a person is in an emergency and would require funds to overcome, and at the same time he would be running short of money. Our project or this application will provide loan via a digital platform through which he could achieve or accomplish their needs. Money is lent based on their occupation and other credentials.

Keywords: Loan, funds, employee, student, credentials

1. INTRODUCTION

Obtaining personal loans has been a tougher deed and it has never been an easy task. With plenty of other applications available online it is now become easier to get loan instantly. Android is a platform, which is an open source operating system, based on Linux operating system. It has one of the most prominent positions in the mobile web for its convenient development environment. Its peak performance on cell phone terminals enables the user to make the best out of it. **'RuPayInvest'** is an application built on android platform, which provides loan to a couple of people, but the most important question has been, who and how will a person get the loan. For the question who? A student, an employee etc. are the users or the moneylenders of the application, and for the question How? , Money gets transferred directly into the user's 'paypal' account; it is where the complete transaction takes place where the user obtains fund and repays through the same. The person who lends the loan has to repay the funds in several EMIs (Easy monthly installments) on or before 5th day of the starting of every month until they are done. The user

has to basically provide their phone number or g- mail and the password as their login credential. Once they login, if they are a first time user, they must provide their full name, gender, date of birth, Aadhar number, pan card number, pictorial data such as the user's facial image, Aadhar card (Front and back sides), pan card. Once the user provides all their credentials, if it satisfies all the terms and conditions, they are allowed to choose their desired amount from rupees 1,500 to rupees 35,000 and the respective time.

1.1 Introduction to GUI

A GUI (Graphical user interface) is an interface between human and the device, which is the way the menus and the programs work for the user's touch. Icons, menus etc. are the components that are being used in the application. This application is built in such a way that it provides smoother and better user experience, usage of Android's pre-built UI objects such as UI controls, structured layout and also a feature which enables the user to build a fully customized UI using those pre-built modules for interfaces such as dialogs, menus and notifications. As a result they make operations more intuitive and responsive hence it is easier to use.

1.2 Motivation

This application while built on Android platform, which basically has millions of users, to provide them a user experience, which is provided by none. In comparison with other applications, this application provides terms and conditions in a way that it is scalable to users, stake holders and developers as well. Keeping in mind about the profit made, the users get to fulfill their needs in an easy manner. There are approximately about 60,000 other applications on the Google playstore which deals the same situation that is proving funds, after surveying several applications amongst those applications, our application provides services such as:

- Maximum loan amount of around rupees 35,000 is provided to an individual who is very much more than others.
- Interest rate of which is much lesser than almost every other application.
- Integration of third party applications is lesser, which would

save some space.

- Minor aspects such as, user interface and user experience is better.

Advantages of the application

- User gets to fulfill their needs if they require funds for it.
- Time saving and better than conventional methods of obtaining funds.
- Reliability is secured.

1.3 Aim of the application

This financial application is basically for those users who would be in a state of emergency and might require some amount of funds, which might help them a bit, or they might be running short of the money to buy a certain product, which they cannot afford to pay. On the other hand a student would be in need of funds to buy stuff of their necessities for which they would never have the money to pay because they indulge themselves academically and not earning keeping these circumstances in our mind it was necessary to provide an application which provides them funds at lower rate of interest and more money or funds. Keeping all these factors in our mind this application fulfils all these stated concerns and provide an easy interface for an user.

2. LITERATURE SURVEY

2.1 Introduction to Android

Android is a software package and Linux operating system for mobile devices such as tablet, smart phones. It is developed by Google and later the OHA (Open Handset Alliance). Java language is mainly used to write the android code even though other language can be used.[1] The goal of android project is to create a successful real-world product that improves the mobile experience for end users. There are many code names of android such as lollipop, KitKat, jelly bean, ice cream sandwich, froyo, ecliar, and donut.

2.2 Features

- It is an open source.
- Anyone can customize the android platform.
- There are a lot of mobile applications that can be chosen by consumer.
- It provides many interesting features like weather details, opening screen, live RSS (Really Simple Syndication) feeds.
- It provides support for messaging services (SMS and MMS), web browser, connectivity (GSM, CDMA, Bluetooth, Wi-Fi), media, etc.

2.3 Android App and its components

Android apps can be written using, Java, and C++ languages. The Android SDK tools compile your code along with any data and resource files into an APK, an Android package, which is an archive file with an .apk suffix. One APK file contains all the contents of an Android app and is the file that Android-powered devices use to install the app. Each Android app lives on its own security sandbox, protected by the following Android security features: The Android operating system is a multi-user Linux system in which each application has a different user.

- By default, the system assigns each app a unique Linux user ID (the ID is used only by the system and is unknown to the app). The system sets permissions for all the files in an app so that only the user ID assigned to that app can access them.

- Each process has its own virtual machine (VM), so an app's code runs in isolation from other apps.
- By default, every app runs in its own Linux process. The Android system starts the process when any of the app's components need to be executed, and then shuts down the process when it's no longer needed or when the system must recover memory for other apps.
- App components are those essential building blocks of an Android app. Each component is an entry point through which the system or a user can enter the application. Some components depend on others.

There are four different types of app components:

- Activities:** An activity is the entry point for interacting with the user. It represents a single screen with a user interface.
- Services:** A service is a general-purpose entry point for keeping an app running in the background for all kinds of reasons.
- Broadcast receivers:** A broadcast receiver is a component that enables the system to deliver events to the app outside of a regular user flow, allowing the app to respond to system-wide broadcast announcements.
- Content providers:** A content provider manages a shared set of app data that you can store in the file system, in a SQLite database, on the web, or on any other persistent storage location that your app can access.
- Java:** is very popular programming language developed by Sun Microsystems (now owned by Oracle). Developed long after C and C++ emerged, java incorporates many of the powerful features while addressing some of their drawbacks. Android applications are developed using the java language.[5]
- Firestore:** is a database technology that allows you to make web applications with no server-side programming so that development turns out to be quicker and easier. It supports the web, iOS, and Android clients. Applications using Firestore can just utilize and control information, without thinking about how information would be put away, and synchronized crosswise over different examples of the application in real time. With Firestore, you don't need to stress over-provisioning servers or building REST APIs with just a little bit of configuration, you can allow Firestore to make a chance to take every necessary step: storing data, verifying users, and implementing access rules [2]

3. DESIGNS AND IMPLEMENTATION

The app is implemented in android platform .The source code is written in java .The app uses a number of APIs (Application Programming Interface) for the development. Some of the API's are 'paypal', API for payment integration, 'Google Map', API for location etc. App also uses firestore as database to store the user information and details of payment, loans and due-dates information. The whole app is categorised in a number of fragment where each fragment defines a particular segment of app. The fragment and source code with screenshot for this fragment are as follows. Android uses xml file for front end or for view purpose and java for the processing. The xml file defines how the page will look where as java file will defines the action. This app follows a modular design and is distributed for several functions from logging in the user, to helping the user by guiding them through the GUI and other features of the application. The flow in which the fragments perform their tasks are mentioned.

3.1 Implementation of fragments

The start screen, which is a guide to the user, it guides the user about the interface as it provides the user with the most basic choice to make, i.e. it asks whether the user wants to login or sign-up as a new user. The working procedure or the flow of the data across different fragments can be described in the following diagram.

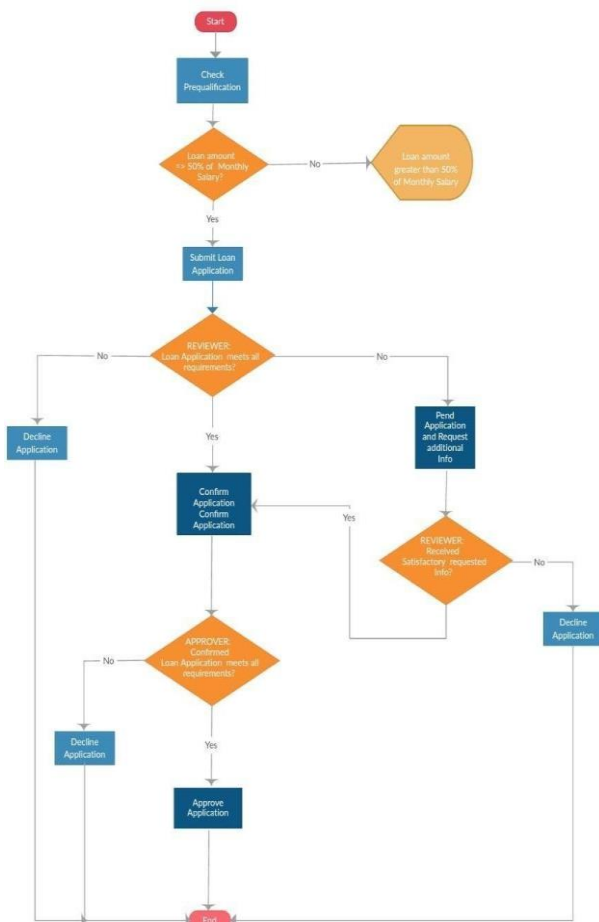


Fig. 1: Flowchart

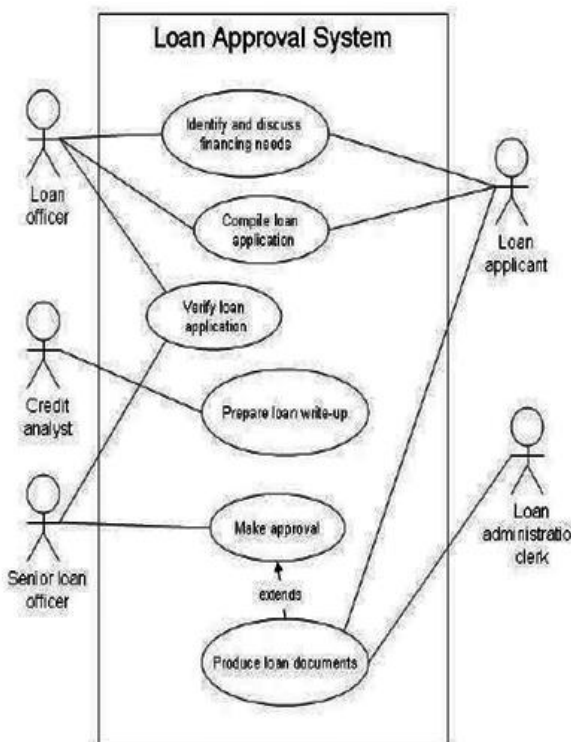


Fig. 2: Use-Case Diagram

3.2 Fragments along with results

Splash screen: This gets displayed when app gets started.



Fig. 3: Splash Screen

Location Permission: This asks the user to grant user the permission to access their location.

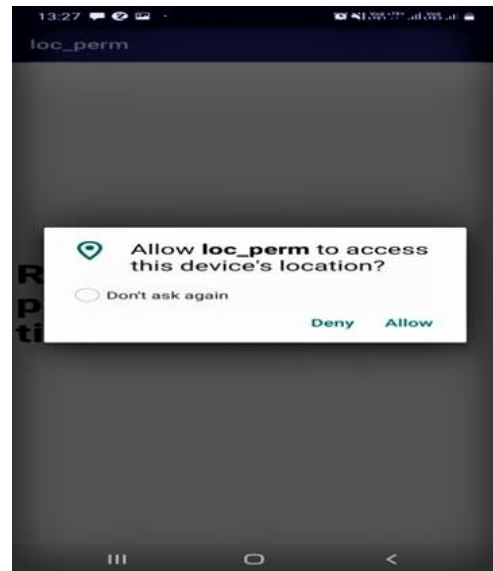


Fig. 4: Location Permission

Phone Number Authentication: This authenticates the user's account by sending an OTP (One time password) for the number given by the user.



Fig. 5: Login Activity (1)

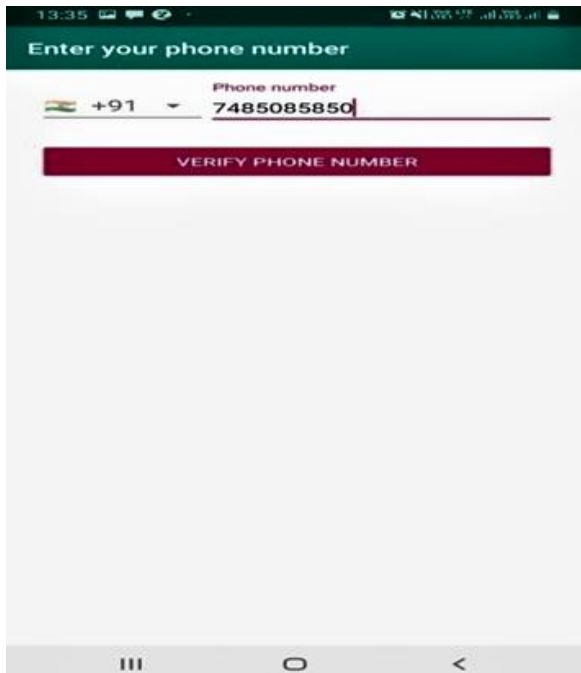


Fig. 6: Login Activity (2)



Fig. 7: Login Activity (3)

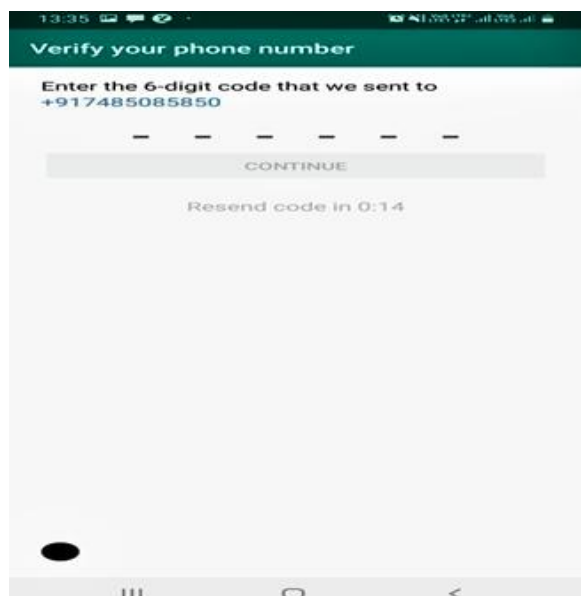


Fig. 8: OTP Authentication

Bottom Navigation: Bottom Navigation contains 4 fragment page. These four fragment are profile, home, dashboard and notification. To run these fragments we need a model java code to run fragments along with 4 fragment java code and java main page code to run each fragment we need a java model.

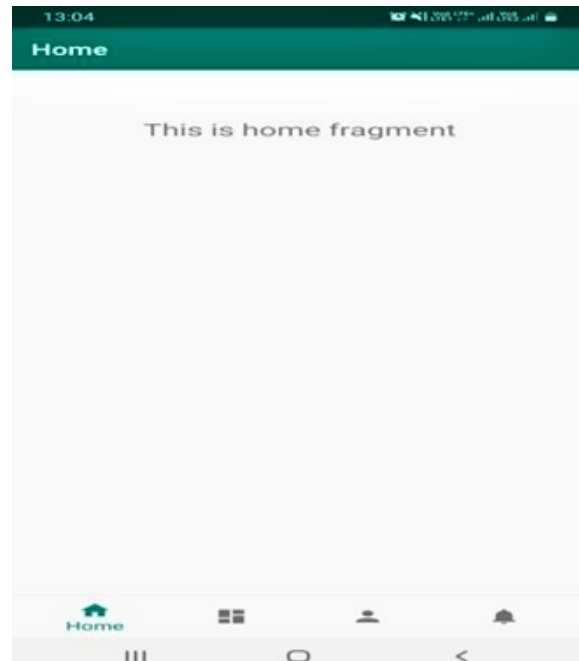


Fig. 9: Navigation Activity

User Details: The user details are stored in firebase. A form will get generated to store user information which can be used to retrieve user information whenever necessary.



Fig. 10: User-credentials

EMI Calculator: This provides the user the information about how much he needs to pay the EMI (Easy monthly interest) for the loan they have availed for.

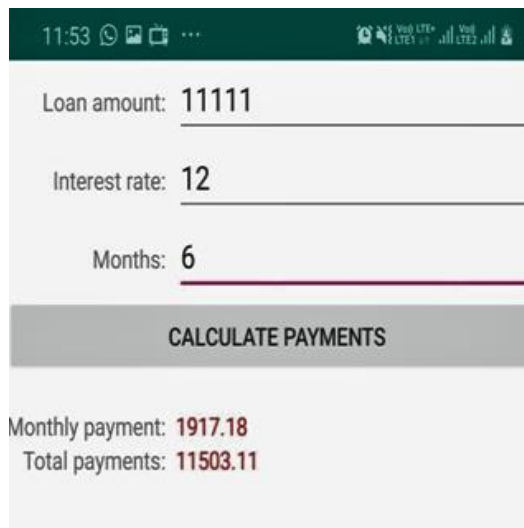


Fig. 11: EMI Calculation

PayPal Integration: The app uses paypal sdk for the development and interface of paypal.[3]

Integrating PayPal: This will create a simple edit text so that user can give the amount what is needed to be paid.

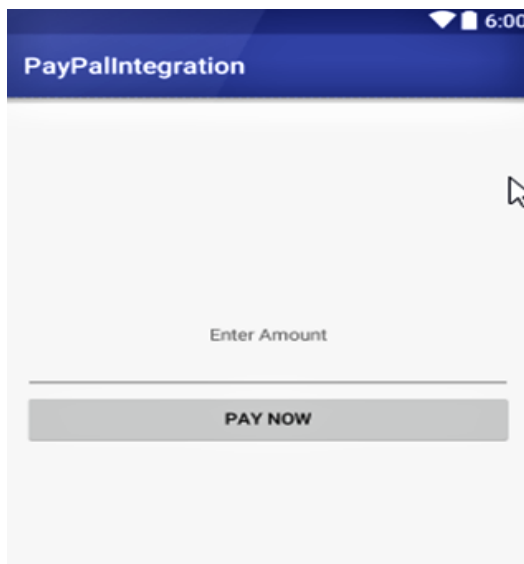


Fig. 12: PayPal Integration

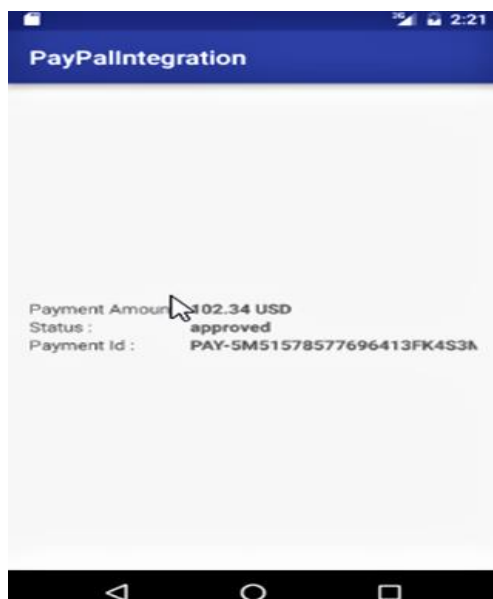


Fig. 13: Payment status

4. CONCLUSION

During the course of this project, we learnt a lot of the work and best practices that go into creating an application which enabled those students who were in need of funds in getting loans. The major issue of this project was to provide the user with an interface, which enables easy interaction with the interface, and communicate with the program, those objectives were achieved by software development process or procedures and the principles for design and implementation were followed. There are several fragments that were built and implemented alongside two major fragments which are the UI (User interface), which is attractive and responsive to the user this could was achieved by following the design guidelines of Android and implemented using the same and the second fragment is the database which helped us update and store and retrieve the information much more efficiently and for that purpose Google’s Firebase which is a real time database was used which is built and maintained by Google. All the functionalities, which were required, are implemented accordingly, so this application is fully functional on the Android platform. This application is to able to register clients (students) who are there to avail loan, after certain documentation approval and interactions back and forth, the user obtains the loan.

There are many pros and cons that goes with any application amongst which there are some advantages one would come across:

- Basically the user can fulfill their needs, which require funds.
- With provided an easily handled interface, even a naïve user would be able to navigate through the application and use it.
- The user would have better accounting of their finance.
- A person becomes more confident in taking any sort of financial decisions.
- Similarly, the person would know how to meet financial goals and becomes financially more responsible.

4.1 Cons

- Even though all the essential steps are taken to secure the data, there are chances of security breach.
- During the transaction, if any mishaps take place, there are chances of a false transaction which can be reverted but consumes more time and efforts which is inconvenient.
- There are chances of a person becoming financially irresponsible if he can be lending funds.

4.2 Future Scope

This type of application is called P2P (Peer to Peer) which is about to be in the trending categories of the mobile application.

- P2P applications are estimated with having the total transaction of around \$4 billion USD and would still increase exponentially in the upcoming days.
- People who are currently dependent on banks to avail loans would one day migrate to these applications in the near future.
- All those underserved community or the market would be made to use these applications to fulfill their necessities.
- To conclude, this application can be built, providing much more features to it, either by allowing other categories of users who can avail the loan or by providing some more advanced features, provided more time, efforts and proper resources at the same time.

5. REFERENCES

- [1] <https://developer.android.com/>
- [2] <https://firebase.google.com/docs/android/setup>
- [3] <https://developer.paypal.com/docs/integration/paypal-here/sdk-dev/native/#sdk-capabilities>
- [4] <https://www.coursera.org/learn/java-for-android>
- [5] CORE JAVA FUNDAMENTALS- Eleventh edition by Cay S. Horstmann(Text book)