

Expenses Management System

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ABSTRACT

People do not have track on their monthly expenses and receivables and they do not have any control on what they spend. Developing an application which will be able to keep track on expenses and receivables can solve this problem. To manage our monthly expenses we designed a mobile application. Whatever we spend monthly or daily will be recorded in this application. And it is used to manage our monthly expenses. User can enter their limited budget of the entire month in this mobile application where when the user exceeds their given budget in the respective month will be notified through Expenses Management System Application. And also some mathematical calculations are done to calculate the expenditure on what items users spend a lot and users will be notified that they are spending a lot of amount on the respective item so that they can reduce their expenditure on that item in future. OAuth for authentication via social logins and firebase authentication for respective accounts and firebase, firestore for storing and retrieving respective users data is implemented and Chabot is also included.

Keywords - OAuth, Google Api, Facebook Api, Twitter Api, Firestore.

I. INTRODUCTION

The Expense Management is a mobile application intended to run on android device namely smart phone. Expense Management System is designed to efficiently cater the needs of users by eliminating imparting costs and settling vows to friends. The application encourages corresponding users help in who owes who, and for what. Aim is use better approaches to help users and their companions to share expenses easily. This new application will let bunch users and their companions to have detailed view inside this application around individual costs. The app allows its users to add a remark to an expense, click on the expense name in any expense list. Users can enter their expenses which they are spending daily or weekly basis. Hence it makes them to keep track on their expenses. Users can also enter the receivables which they are supposed to receive. Expenses Viewing list is enabled where user can view the expenses list which they have entered earlier. Along with the expenses title users can also add the image attachment of their bill.

The Expense Management has notification option to notify each time somebody adds a remark to an expense user is on, or user can withdraw to posted bill. Some of the concerns related dividing expenses are like maintaining personal expenses is a big problem, splitting the expenses among group is confusing. Some of the conventional methods used to tackle this problems in normal circumstances are like making use of a sticky note by normal users, Proficient people deal with this kind problems by using spreadsheet to record expenses and using a ledger to maintain large amounts data by especially by experts. As this show that it is variable methods used by different people. This make using this data inconsistent. We believe a handy design a handy mobile application which handles these problems. Such

that app is capable of recording the expenses and giving comprehensive view with easy to use user interface.

II. EXISTING SYSTEM

In existing system, a mobile application is developed where the user can add the expenses and their receivables to the application. They can view the expenses which they have added earlier. There are no any social authentications for easy logins in the existing system. In the existing system user can only add the expenses by typing it manually, where there is no any option for the addition of image from camera or gallery which is the major disadvantage of the existing system. No any notifications will be given which is of no use in the existing system. No any explicit system for budget calculation.

III. PROPOSED SYSTEM

In the proposed system we are going to add additional features on such as we are going to integrate image attachment from gallery and chatting feature. OAuth via social logins is included where user can easily login and make use of this application. Image view for viewing the expense or receivables, hence they can easily track their expenses. An explicit system for budget calculation is included where notifications will be sent to the user if they exceed the expenditure of that month or that day. Users can also enter the receivables which they are supposed to receive. Expenses Viewing list is enabled where user can view the expenses list which they have entered earlier. If the user spends so much of amount on a particular item then users get notification on what items they spend more and also some recommendation to reduce their expenditure.

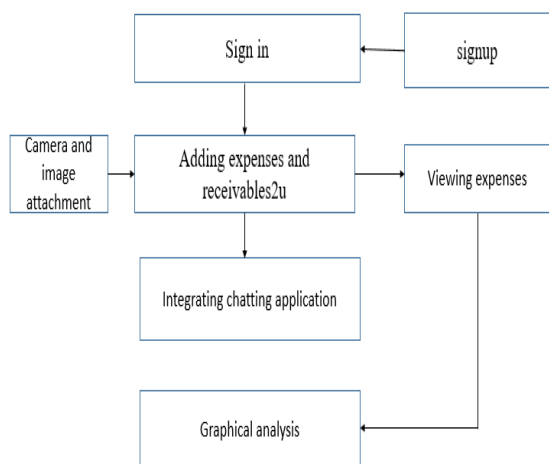


Fig1. Illustration of login module and expenses additon

IV. RELATED WORKS

[1]Liliana Enciso , Jose Guarnizo , Edison Torres and Pablo Alejandro Quezada-Sarmiento ; “Smart Office: Development of a Mobile Application for Android with Firebase Services Oriented to GroupMe Messaging” ; ISBN: 978-989-758-324-7 Copyright © 2018 by SCITEPRESS – Science and Technology Publications, Lda.

From this we got to know how to add firebase and cloud messaging FCM to the project and also how to store the data and retrieve the data using firebase.

[2]Akriti Sood , Madhurima Hooda , Saru Dhir and Madhulika Bhatia; “An Initiative to Identify Depression using Sentiment Analysis: A Machine Learning Approach”;Vol 11(4), DOI: 10.17485/ijst/2018/v11i4/119594, January 2018; ISSN : 0974-6846 .

From this we get to know about usage of OAuth for authentication using this OAuth we can sign in using facebook, google and twitter. From this we get an idea on how we need to use this.

V. METHEDOLOGY

This section of paper is very important and this will guide our team to successfully accomplish the goals set for research. Here, the research project methodology describes the steps and approaches to be fallowed to attain final product. As explained earlier our project is used to efficiently manage the personal expenses. However, our projects will have additional features included as part of our research so that it makes our project unique in the market. These features would make the project more efficient and very useful for our users.

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is

available for download on Windows, macOS and Linux based operating systems.It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android applicationdevelopment.



Fig 2: Android Studio

Android Studio supports all the same programming languages of IntelliJ (and CLion) e.g. Java, C++, and more with extensions, such as Go and Android Studio 3.0 or later supports Kotlin and "Java 7 language features and a subset of Java 8 language features that vary by platform version."

The first stable build was released in December 2014, starting from version 1.0. The current stable version is 3.3, which was released in January 2019.

VI. SQLITE DATABASE

SQLite is an Open Source database. SQLite supports standard relational database features like SQL syntax, transactions and prepared statements. The database requires limited memory at runtime (approx. 250 KByte) which makes it a light weight database to embed into other runtimes.



Fig.3: SQLite

SQLite supports the data types TEXT (like String in Java), INTEGER (like long in Java) and REAL (like double in Java). All other types must be converted into one of these fields before getting saved in the database. SQLite itself does not validate if the types written to the columns are actually of the defined type, e.g. you can write an integer into a string column and vice versa.

VII. MODULE DESCRIPTION

7.1 New User Onboarding And Splash Screen

Android Splash Screen is the first screen visible to the user when the application's launched. Splash screen is

one of the most vital screens in the application since it's the user's first experience with the application. Call it when you want to know the additional features of the app new user onboarding is implemented.

7.2 User Registration/Creation

This application like most of the applications will have user login screen and option for registration. The user must register in this application when he/she is using for first time. However, the user who is already registered can login to the application using his/her login credentials that are created by the user at the time of registration. Firebase is used for the purpose of authentication.

7.3 OAUTH Social Login

In this module, Social logins are implemented. Where users can login to their respective accounts. Google login, Facebook login and twitter login is implemented where users can login into this mobile application through any of their social accounts.

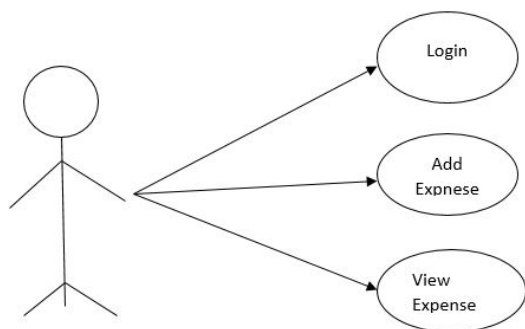


Fig 4: UML diagram for login module.

7.4 Adding Income/Expenses

The every user of the application has the options to add incomes and expenses accordingly. This application will provide drop downs to choose the categories or type of income or expenses. Each record should have details like date of occurrence of item, details of items etc.

7.5 Storing the Data Into Database

By clicking the Expenses title, price, and adding the image attachment from gallery the data will be stored in local storage. We made it possible using SQLite Database which is light weighted one. The shared preferences file which we have implemented in the project is stored in the local storage of the phone. The data which users enter in receivables list will also be stored in the SQLite database.

7.6 All Expenses Details

This part of our application will provide user with option to view all the records of expenses and income with selection from-date and to-date. This will give comprehensive view of the expenses/income records for give selection of user.

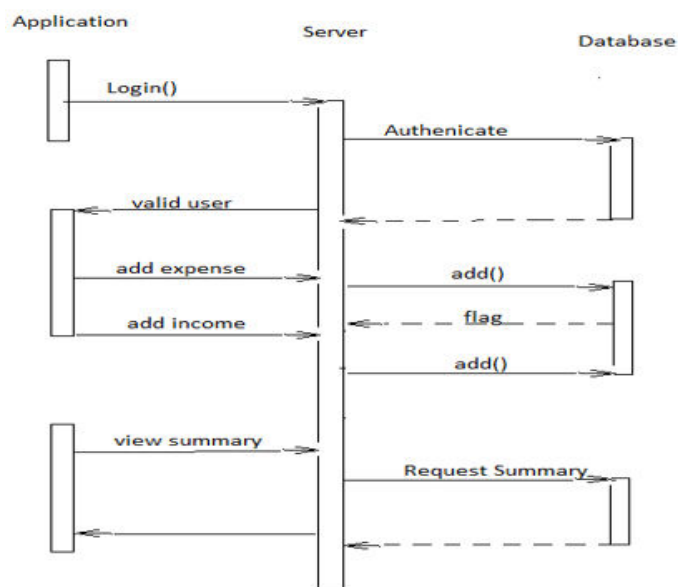


Fig 5: Sequence diagram for Expenses Management.

7.6 Limit Calculation

Initially monthly limit and daily limit can be set. If user exceeds the limit firebase push notification will be sent to the registered users of the Expenses Management System Application. From this the users can get awareness on their expenses and can take any action on them.

VIII. CONCLUSION

In this project, we develop a mobile application that keeps track of user personal expenses, his/her personal contribution towards expenses, maintain monthly incomes. It provides information of "who owes who and by how much". The application will eliminate sticky note, spreadsheet and ledger that cause confusions, data inconsistency problems. With our application user can manage his expenses more effectively. We considered adding certain features to the application to make it more useful to the user. Some of the extra features are like enabling users to register to the application using existing email or social network account, it will synchronize the users profile information to the application.

IX. ACKNOWLEDGMENT

The Expense Manager mobile application is the idea inspired from several mobile applications dealing with managing of the problems related to managing the funds and expenses. Some of the application that we would like list are splitwise, financial calculators, Expense manager by bishinwes, Expenser, personal expenses, etc. all those available in android market.

However, our application only inspires idea and we implement them on our own by including some more unique features that make application more useful to the user.

REFERENCES

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