

# An Android Application for Calculating Trip Expenses Using Firebase

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**Abstract:** Tracking daily expenses is not so innovative. Many conventional and technical methods for tracking our costs and budgeting have been developed. To compute profit or savings, we used to write down our expenses in the register, which we still do today. Furthermore, numerous desktop and mobile programmes have been created specifically for this purpose. Budget revenue, on the other hand, limits spending. As a result, we must keep track of our spending to ensure that we do not go over budget. People used to manually track their expenses, which was extremely time consuming and tedious. We developed an application in which the user can enter her expenses in the category of her choice using a category button. The user can also delete and amend the categories as needed. It is designed to track daily paid and unpaid expenses using a computerised system, eliminating the need for laborious paper work. It helps in easy access of data stored by the user.

**Keywords:** Android Studio, Firebase, Google Map, Expenses, Trip

## I. INTRODUCTION

Android is a hardware reference design which clearly describes the capabilities needed for a mobile device to support the software stack. A run time used to execute and host Android applications, including the Dalvik virtual machine and the core libraries that provide Android-specific functionality. The run time is designed to be small and efficient for use on mobile devices. An application framework that agnostically exposes system services to the application layer, including the window manager and location manager, content providers, telephony, and sensors. A user interface framework used to host and launch applications. A software development kit used to create applications, including tools, plug-ins, and documentation.

We are building an android application named “Trex (Trip Expenses)”. As the name suggests, this project is an android app which is used to track the expenses of the user. It is like digital record keeping which keeps the records of expenses done by a user. The application keeps the track of the Budget and Expenses of both users on a trip basis. With the help of our application, people will be able to keep track of how much they spend and for what purpose they spend it. People will go on tours in a tranquil manner as a result of this, and there will be no confusion or conflicts until the tour is through.

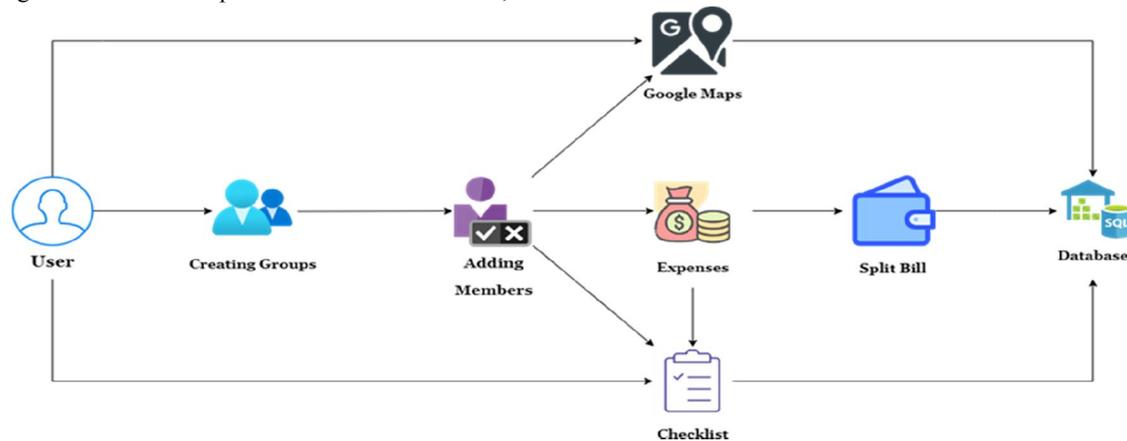


Fig. 1. Architecture Diagram

## II. EXISTING SYSTEM

The Existing System is developed using Angular 8 for the front-end and SQL lite for the back end. Expense Tracker app keeps track of all expenses and helps users to manage their expenses so they are on their way to financial stability. Tracking users need to register with name, phone number, address, email address, username, password and confirm password done in all applications for usage purpose. This is a mandatory process, Users can only register once, per user a single record. The remainder is determined if the type of cost in the future. All the intricacies of income or expense can be seen or refreshed or can be erased by long pressing on particular thing. Summary entries can be separated by month, year, and day. When the end of the month has reached the full payment date, all past expenses and all future expenses will be identified and displayed to the user. All the existing systems have made an application or website as an alternative for maintaining expenses in excel sheet. These application or website contains only the records of the expenditure.

## III. PROPOSED SYSTEM

"Trip Expense" is the name of the smartphone application we intend to create. As the name implies, the principal objective of this application is to compute and evenly distribute our spending. We've added new features to this software to make it easier to use and reduce the amount of manual labour required. We've designed a feature that allows us to create a group of people who are all going on the trip and track their spending and the purpose of their spending. Then we created a column that divides the members' portion of the expenses into equal amounts and shows how much is to be paid to which member. Then we added two additional features that will be quite useful: one is a separate page that will be used to list the items that should be done or covered during the trip; and the other is that we have incorporated Google Map activity to ensure the appropriate direction and to show nearby locations to visit.

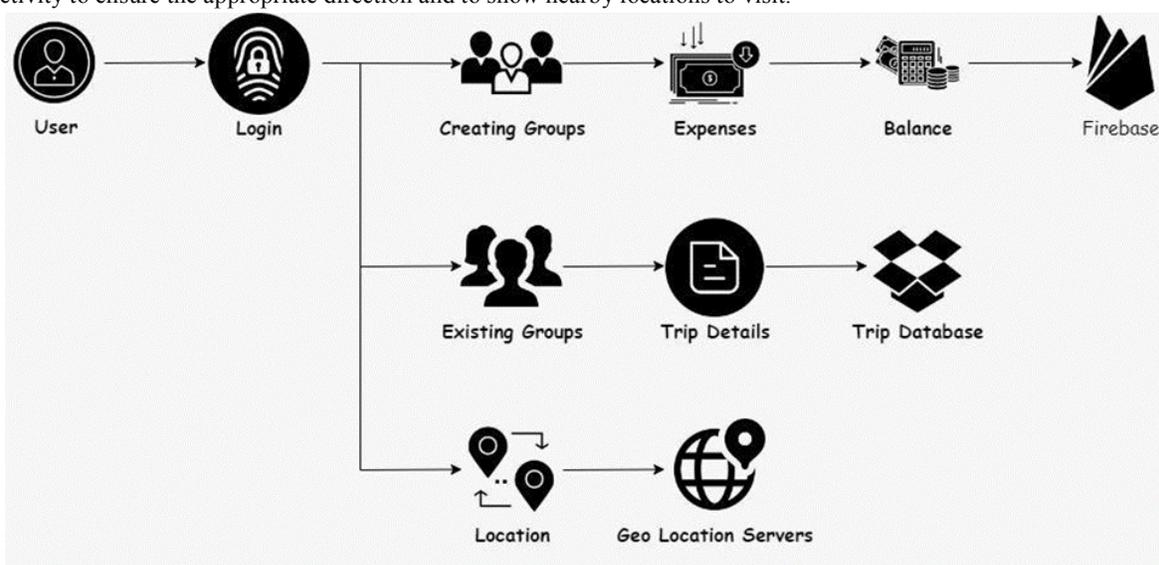


Fig. 2. Process Flow

## IV. MODULE DESCRIPTION

### 4.1 User Login or Registration

The first thing a user must do after installing an application is log in or register. This is a required step because it will be used to save the user's data and processes for that account. To begin, the user must first create an account using his or her email address. If it's already set up, you may simply log in.

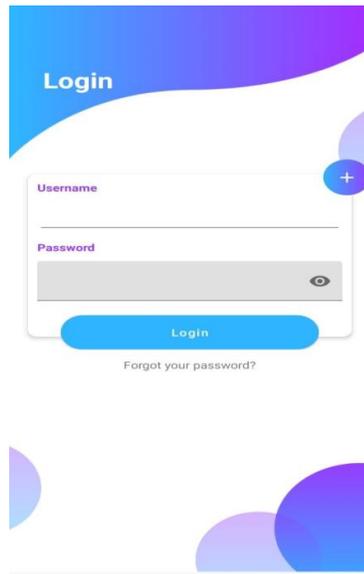


Fig. 3. Login Page

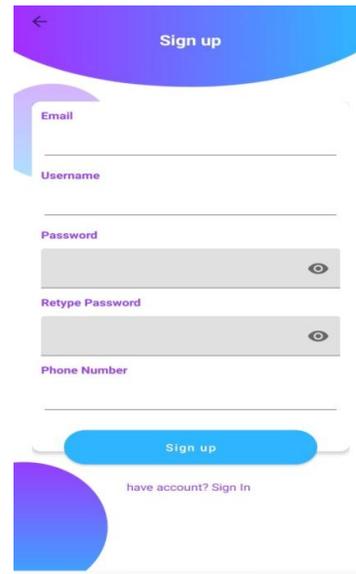


Fig. 4. Registration Page

#### 4.2 Creating Groups

The user builds groups in the second module. These categories are used to separate the occurrences. Each group represents an event or journey that took place at a different time or on the same day. This will be beneficial since users will be able to see exactly how much they have spent.

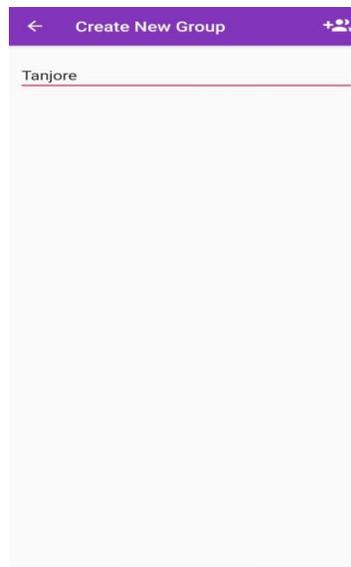


Fig. 5. Creating Group

#### 4.3 Viewing and Adding Members

This is the next module of our project. We have designed it in such a way that each time the user may view the groups, if the group is not created, then they will create a new group. This module is mainly implemented to show how many members went on the trip.

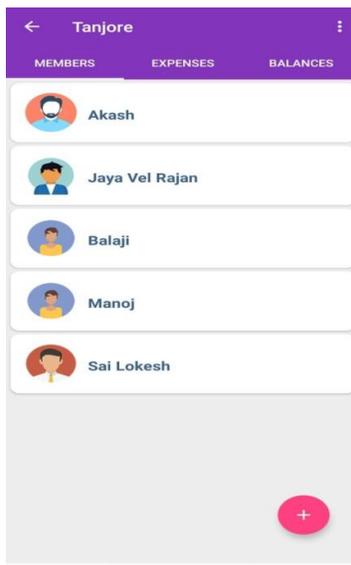


Fig. 6. Members Page

#### 4.4 Adding Expenses

This module is divided into 3 parts: purpose, quantity, and members. The purpose block is used to find out what they're spending the money on, such as food, gas, gifts, and so on. The amount block reflects the amount of money he spent on that item. The member block is used to indicate who paid for that product at that moment. In general, it is used to record an expense incurred by a certain member, as well as specifics about that expense.

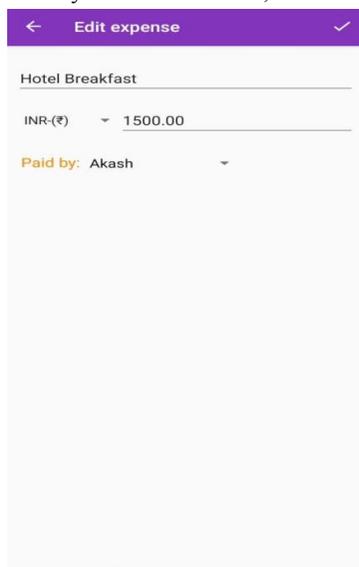


Fig. 7. Adding Expenses



Fig. 8. Viewing Expenses

#### 4.5 Checking the Balances

This is the final module created for this app. This module automatically calculates and displays the amount to be provided to whomever in order to balance the team's total spending. Finally, all members together and pay an equal share of the cost of each product, comparable to the share they paid separately.

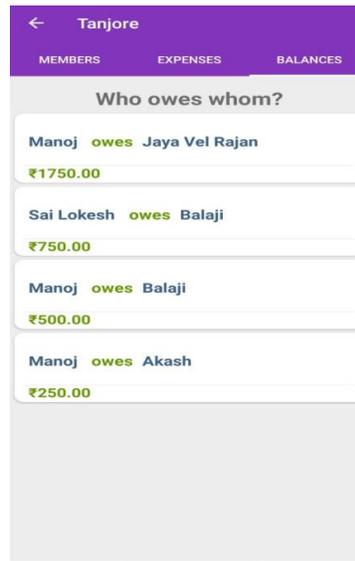


Fig. 9. Balance Page

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## V. CONCLUSION

The spreadsheet and paper-based expense reporting processes became old things nowadays. The ups and downs within the economy and price of living have forced companies to appear for alternative routes to manage expenses. Deploying an easy system can find you with inaccuracy and an absence of visibility. We are hereby concluding that the appliance we've got designed are going to be very useful for users to manage their expenditure spent individually or by a gaggle of members. It'll solve the budgetary problems that occur between friends while travelling and work a snug and peaceful journey. This application makes the splitting work easier and quicker, and also the users can get paid their balances immediately. This may be one in all the most important applications that may be employed in the near future.

## VI. FUTURE SCOPE

The next-generation travel and expense management apps mustn't only accelerate the expense management process but also include mobile and cloud integration capabilities that add tremendous value to the business bottom line. Within the future, management software should be able to provide greater visibility into spending and standardize critical procedures and new features like chat options between the members and cash options might happen. We are in our superior international have been we're the use of the computerized process. So, in close to future, it is probably a essential utility because it robotically calculates the prices and suggests the split-ups. It enables us in storing records. In the imminent years, this can have an up to date model which enables us to hold the day by day and month-to-month expenditure. This utility might be an visit utility for the human beings because it will display the locations to discover with right direction.

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**REFERENCES**

- [1]. Hrithik Gupta, Anant Prakash Singh - Expense Tracker : A Smart Approach to Track Everyday Expense - December 2020
- [2]. Angad Manchanda - Expense Tracker Mobile Application - December 2012
- [3]. J. Consumer Res., 23, C. HEATH AND J. B. SOLL - Mental budgeting and consumer decisions - 1996
- [4]. App on Google Play - Money Lover: Budget Planner, Expense Tracker
- [5]. Denis.E.Yurochkin, Anton.A.Horoshiy, Saveliy.A.karpukhin - Development of an application on expense accounting - 2021 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (ElConRus) – April 2021
- [6]. App on Google Play - Daily Expense 3