

# **Expense Tracker**

**Team Name: App Chronicle**

**By**

**Bhavishya Vudatha**

**Mahima Jain Kala**

# **1. Project Description:**

## **Introduction:**

In today's complex financial landscape, managing personal expenses efficiently is more crucial than ever. The Expense Tracker emerges as a modern solution to address this need by providing users with a user-friendly platform for tracking, categorizing, and analyzing expenditures in real-time. With the increasing demand for intuitive budgeting tools, this project aims to develop an innovative application that simplifies expense management, promotes financial awareness, and facilitates informed financial decision-making.

## **Objective:**

The primary objective of the Expense Tracker is to offer users a convenient and efficient platform for tracking their expenses. By incorporating features such as automated expense logging, customizable budgeting tools, and insightful reporting capabilities, the system aims to empower users to take control of their finances and work towards achieving their financial goals. Furthermore, the project aims to leverage advanced technology to enhance user experience while ensuring the security and reliability of financial data.

## **Description:**

The Expense Tracker System is a web-based application designed to provide users with real-time insights into their spending habits. With its intuitive interface, users can effortlessly input their expenses, categorize them based on predefined categories, and generate detailed reports to gain a deeper understanding of their financial behavior. Additionally, the system offers functionalities such as budget tracking, spending notifications, and goal setting to assist users in managing their finances effectively.

By offering a comprehensive suite of features and a user-centric design, the Expense Tracker System aims to revolutionize the way individuals manage their finances. Whether users are tracking daily expenses, monitoring their budget, or planning for the future, this application serves as a powerful tool for promoting financial stability and success.

## 2. Requirement Specification:

The Project encompasses ten distinct activities namely

- activity\_splash
- activity\_main
- activity\_today
- new\_expense
- activity\_expense\_list\_edit
- activity\_expense\_report
- activity\_category
- activity\_new\_category
- activity\_edit\_category
- activity\_settings

Below are the specifications for each activity:

### **activity\_splash**

- Activity consists of a centered lottie animation view in the layout to display a dynamic animation and a textview below it that displays the app name, "Expense Tracker".

### **activity\_main**

- Activity will have a Navigation Drawer.
- Upon clicking the navigation drawer, four options will be presented: Today, Expense Report, Categories, and Settings. Based on the requirement, an option will be chosen.

### **activity\_today**

- The activity will feature a text box labeled 'Today's Total' for displaying today's total expenses, below the total expense, a recycler view titled 'Today's Expenses' to showcase the expenses incurred on the current day, and an action item named 'New Expense'.
- Upon clicking the 'New Expense' action item, It will redirect to the new\_expense activity.

- Upon clicking the item in recyclerview, It will redirect to the activity\_expense\_list\_edit where we can update the expense as well as delete the expense.

### **new\_expense**

- The activity will feature a text box for inputting new expenses, accompanied by a dropdown menu containing categories which are retrieved from the database reflecting the areas where expenditures have been made and an action item named 'save' to save the expenses.
- Once a new expense is added, the activity\_today and activity\_expense\_report will be refreshed with a new total expense and an item in recyclerview, and the database will be updated accordingly.

### **activity\_expense\_list\_edit**

- Activity Contains an EditText pre-populated with the expense value and a dropdown menu that displays the currently selected category and three buttons are available: 'Exit', 'Delete', and 'Update'
- Upon clicking the 'exit' button, it will redirect back to 'activity\_today'.
- On selecting the 'delete' button, it will delete the expense in the recycler view of activity-today as well as the database.
- On clicking the 'update' button, it allows modifications to the expense amount, category, or both. Changes are reflected in both the RecyclerView of activity\_today and the database.

### **activity\_expenses\_report**

- The activity features a TextView displaying today's total expense, alongside a RecyclerView that showcases the amount spent in each category. Additionally, there is an action item named 'Filter' in the toolbar.
- Clicking on the 'Filter' action item will trigger a popup screen with options: 'By Date', 'By Week', and 'By Month'.
- Selecting 'By Date' opens a calendar dialog, allowing you to pick a specific date. Upon selection, the activity\_expense\_report will refresh to show the total expenses for that date along with a detailed list of expenses.

- Choosing 'By Week' updates the activity\_expense\_report to reflect the total expenses for the selected week and provides a detailed list of those expenses.
- Choosing 'By Month' similarly updates the activity\_expense\_report to display the total expenses for the chosen month, accompanied by a detailed list.

### **activity\_categories**

- The activity will feature the recycler view containing a list of categories currently stored in the database, along with an option to add new categories through the action item named "Add Category".
- Upon clicking the action item, it will redirect to the activity\_new\_category.
- Upon clicking the item in the recycler view, it will redirect to the activity\_edit\_category.

### **activity\_new\_category**

- The activity will have a text box labeled 'category name' along with an 'Add' button. When the add button is clicked, the category will be saved in the database, the list in activity\_categories and the dropdown in the new\_expenses will be refreshed/updated.

### **activity\_edit\_category**

- The activity will have a button named currency. The activity will have an edittext populated with a category along with three buttons: 'exit', 'delete', 'update'.
- Upon clicking 'exit', it will redirect back to the 'activity\_categories'.
- Upon clicking the 'delete' button the category will be deleted in the recycler view of activity\_category as well as in the database.
- Upon clicking the 'update' button the category will be updated in the recycler view of activity\_category as well as in the database.

### **activity\_settings**

- The activity will have a textview named currency which is clickable and another textview to display the currency which is selected in the dialog box.

- When the currency textview is clicked, a dialog box will appear, allowing the selection of various currencies. Within this dialog box, there is an additional button labeled 'cancel' which can be used to close the dialog box.

### **3. Technical Description:**

The Expense Tracker System is a comprehensive Android application developed using Android Studio, Java programming language, and Room Database to provide users with efficient expense tracking and management capabilities. Below is a detailed technical description of the project:

#### **Android Studio:**

- Android Studio served as the primary Integrated Development Environment (IDE) for building the Expense Tracker System.
- It provided a feature-rich environment for writing code, designing layouts, and testing the application on various Android devices and emulators.

#### **Java Programming Language:**

- Java was the programming language of choice for implementing the logic and functionality of the application.
- Utilized Java's object-oriented principles for creating modular and scalable code structures.
- Implemented various features such as expense logging, category management, and user settings using Java language constructs.

#### **Room Database:**

- Room Database, part of Android's Jetpack libraries, was employed for efficient storage and management of expense and category data.
- Leveraged Room's LiveData and ViewModel components to ensure seamless integration with the user interface and enable reactive data updates.

#### **User Interface (UI) Design:**

- Designed user-friendly layouts and interfaces using XML markup language within Android Studio's layout editor.
- Implemented Material Design guidelines to create visually appealing and consistent UI elements.
- Integrated various UI components such as TextViews, EditTexts, Spinners, RecyclerViews, and Buttons to facilitate user interactions and data presentation.

#### **Navigation Management:**

- Implemented navigation between different activities and fragments using Android's Navigation Component.
- Utilized navigation graphs and destinations to define navigation paths and transitions within the application.
- Incorporated navigation listeners and callbacks to handle user interactions and ensure a smooth navigation experience.

**Data Persistence and Management:**

- Implemented data persistence mechanisms using Room Database to store and retrieve expense and category data locally on the device.
- Implemented data validation and error handling to ensure data integrity and reliability.
- Utilized SharedPreferences for storing user preferences and settings, such as selected currency options.

In summary, the Expense Tracker System is a well-engineered Android application developed using modern development tools and techniques to deliver a seamless and efficient expense tracking solution for users.



## 4. Implementation:

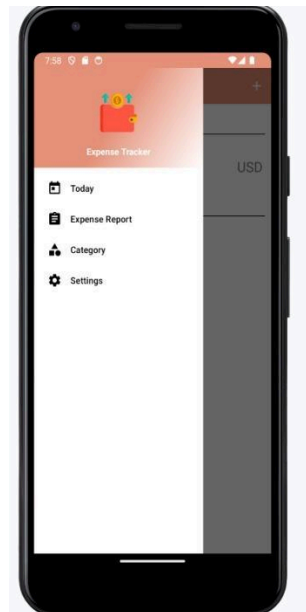
The application was implemented in the following manner:

### Navigation Drawer:

- Upon launching the Expense Tracker application, users are greeted with a splash screen providing a brief introduction to the app's functionality.
- The Expense Tracker app features a Navigation Drawer, offering easy access to the following sections:
  1. Today's Expenses: Allows users to input their expenses for the current day.
  2. Expense Report: Provides a comprehensive overview of past expenditures.
  3. Categories: Enables users to manage and organize expense categories.
  4. Settings: Allows users to customize app preferences and configurations.



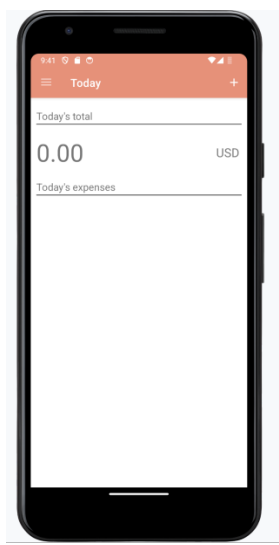
**Splash Screen**



**Navigation Drawer**

### 1. Today's Fragment:

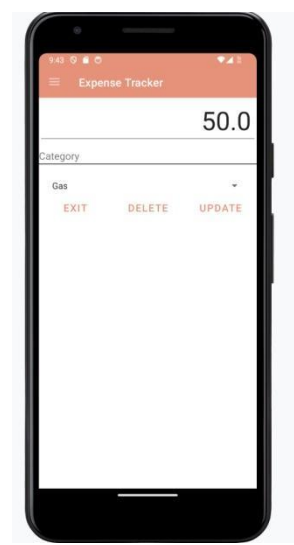
- When selecting "Today" from the navigation drawer, the application opens a dedicated page where users can add their expenses for the current day. A prominent feature on this page is the addition button located in the top-right corner, allowing users to add a new expense with a simple click.
- Clicking the addition button prompts the opening of a new expense page, providing users with options to input the expense amount and select a category from predefined options such as food, travel, shopping, and more.
- In addition to adding new expenses, users also have the flexibility to edit or delete or update existing expenses directly from the expense page, enabling them to manage their spending records efficiently.



**Today Page**



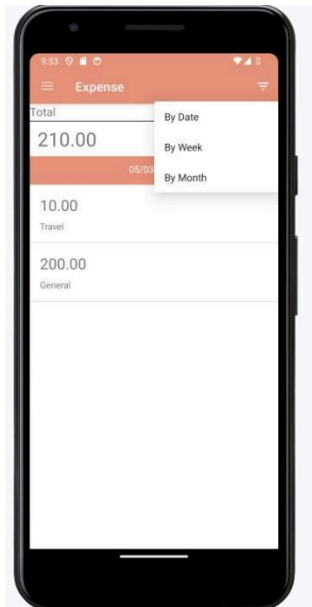
**Add Expense**



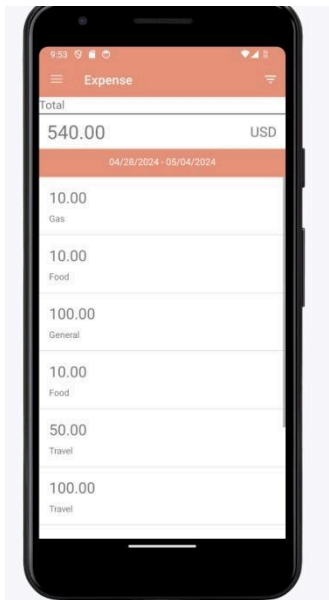
**Add or delete or update Expense**

## 2. Expense Report Fragment:

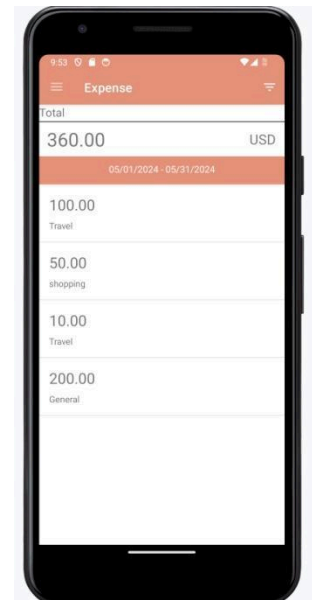
Users have the capability to generate detailed expense reports tailored to their preferences, offering filtering options by week, month, or specific date range. This feature enables users to gain insights into their spending habits over different time intervals, facilitating better financial planning and analysis.



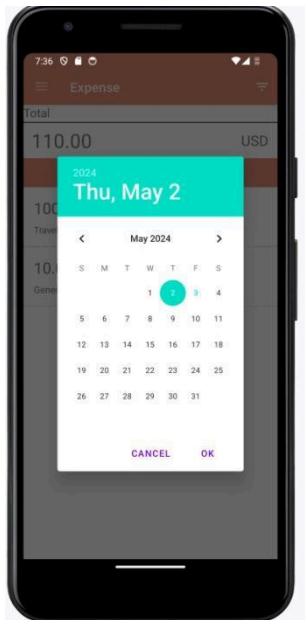
Expense Report Page



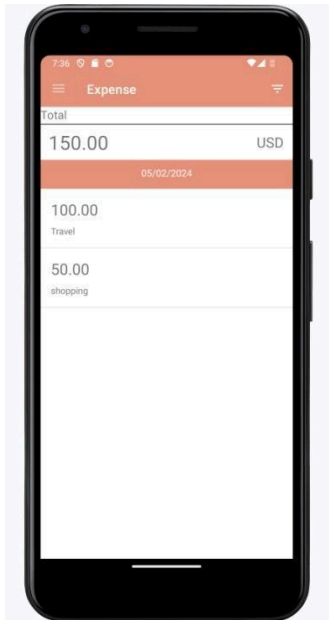
By Week



By Month



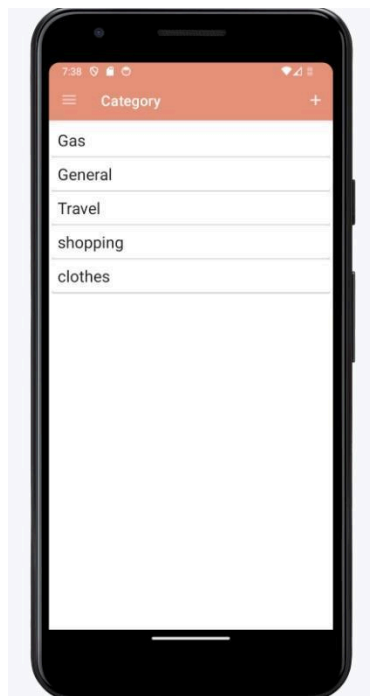
Specific Date Range



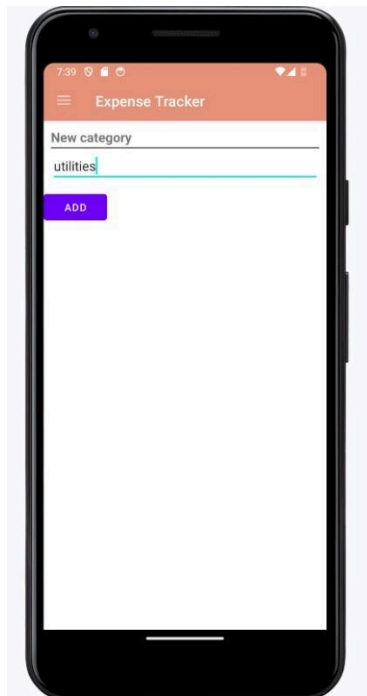
Result for date range

3. Category:

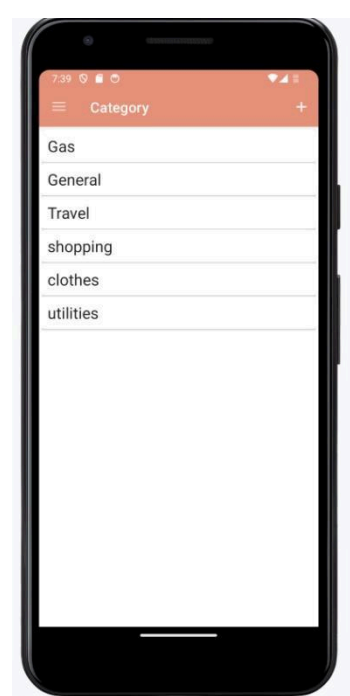
Within this section of the application, users have the ability to manage categories effectively. They can seamlessly add new categories, remove existing ones, or update category details as needed. Categories such as food, travel, and shopping, among others, can be customized to suit the user's preferences and spending patterns. This ensures a personalized and organized approach to expense tracking, allowing users to categorize their expenditures accurately and efficiently.



**Category Page**



**Adding New Category**



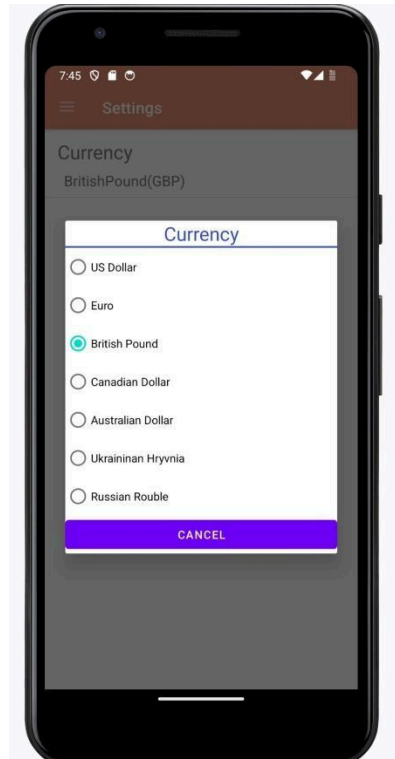
**Deleting New Category**

#### **4. Settings Fragment:**

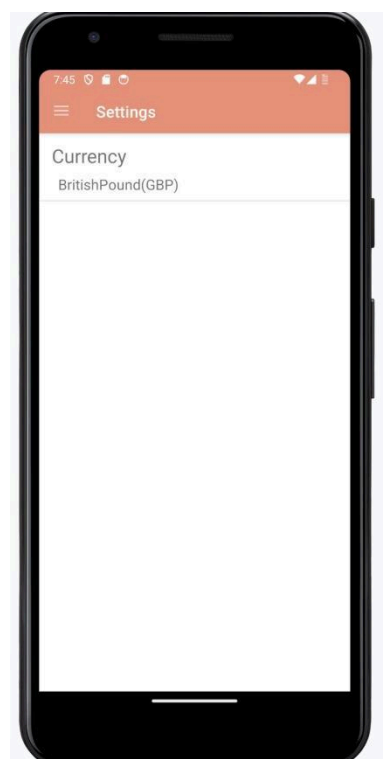
Within this section of the application, users are empowered to adjust the currency settings to suit their preferences. Whether they prefer dollars, euros, yen, or any other currency, they have the flexibility to select the one that best aligns with their financial needs and preferences. This feature enhances the user experience by providing personalized currency options, ensuring that the expense tracking process is tailored to each individual user's requirements.



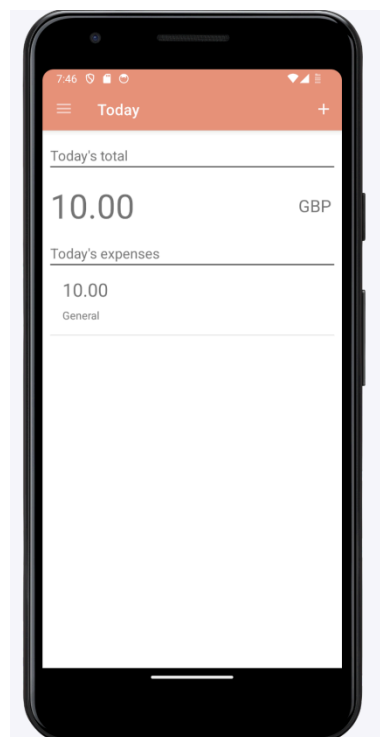
**Settings Page**



**After Clicking on Currency**



**After Choosing**



**Today's Page After Choosing the Currency**

In conclusion, the Expense Tracker System represents a comprehensive solution for individuals seeking to take control of their finances and achieve greater financial awareness. By leveraging modern technologies such as Android Studio, Java programming language, and Room Database, the application provides users with intuitive tools for tracking, categorizing, and analyzing their expenses in real-time.

Through the implementation of features such as a Navigation Drawer for easy access to key functionalities, the ability to add, edit, and delete expenses and categories, and the option to customize currency settings, the Expense Tracker System empowers users to manage their finances effectively and make informed financial decisions.

Overall, the Expense Tracker System serves as a valuable tool for individuals striving to achieve financial stability and success, offering a user-friendly platform to track expenses, set budgets, and ultimately, take control of their financial future.

## **5. Future Ideas:**

**Receipt Scanning:** Implement OCR (Optical Character Recognition) technology to allow users to scan and upload receipts directly into the app, automatically extracting expense details for easy logging.

**Budget Tracking and Alerts:** Introduce budgeting tools that enable users to set spending limits for different categories and receive notifications when approaching or exceeding these limits, aiding in better financial management.

**Expense Sharing:** Allow users to split expenses and share them with friends or family members, facilitating group budgeting and expense management for shared expenses like household bills or outings.