PERSONAL EXPENSE TRACKER APPLICATION

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1. INTRODUCTION

1.1 Project Overview

Personal Expense Tracker is a daily expense management system which is specially designed for non- salaried and salaried personnel for keeping track of their daily expenditure with easy and effective way through computerized system which tends to eliminate manual paper works. It will also manage records in systematic way and user can access the stored data conveniently. We have tried to design the project in such way that user may not have any difficulty in using this application without much effort. This software can be really used by end user who have Android running devices with them. The language that we use to develop this system is and MYSQL for database.

1.2 Purpose

The idea of developing this project for user convenience. Because whenever they make expenses immediately, they add in the application. Some of the concerns maintaining a personal expense is a BIG problem, in daily expenses many times we don’t know where the money goes. Some of the conventional methods used to tackle this problem in normal circumstances are like making use of a sticky notes by common users, Proficient people deals with this kind of problems by using spreadsheets to record expense and using a ledger to maintains the largeamounts data by especially by expert people. We believe a handy design and a handy mobile application which handles these troubles. Such that app is capable of recording the expenditure and giving broad view with easy to use the user interface and this application is intelligent enough to shows the history of expenses.

2. LITERATURE SURVEY

2.1 Existing Problem

a.Money View - Expense Manager App

Money View App reads all of the transactional SMS messages and provides you with real-time visibility into your finances. This app unearths the hidden financial data that sits idly in SMS logs and makes excellent use of it.

Key features of the App:

- **Check your bank account balances.**
- **See the most recent banking transactions.**
- **The Money View app automatically categorises your payments and displays major areas of spending.**
- **View weekly and monthly summaries to help you avoid overspending and improve the efficiency of your budget planning.**
- **It keeps track of your spending, sends personalised bill-paying reminders, finds relevant savings opportunities, and much more.**
- **Track your financial progress by looking at your spending trends over time.**

Goodbudget - Budget & Finance App

This personal finance manager app acts as a proactive budget planner, assisting you in staying on top of your budget, bills, and finances. The personal finance app was designed for simple, real-time budget and financial tracking, making it one of the best expense tracker apps in India.

Key Features of the App:

- **Data is backed up automatically and securely to Goodbudget's**

C. **RAJAPRABHA.M"FAMILYEXPENSE MANAGER APPLICATION"-2017:**

The user can make use of this application in his/her daily life. After being used it can be a part of daily life to update and view daily expense and family expenses.This helps to track expenses and manage it for the user as they are busy in their daily routine, they are not able to keep track of their incomes and expenses.

D. **MUSKAAN SHARMA ,AYUSH BANASAL,DR. RAJU RANJAN, SHIVAM SETHI " A NOVEL EXPENSE TRACKER USING SATISTICAL ANALYSIS"-JUNE 2021:**

Expense tracker is used to maintain and manage data of daily expenditure in a more precise way it can give profound knowledge of their expenses. User can choose the kind of spending they wanted to do, even the amount etc. and all these details is going to be saved by the internal database storage. In this system user can actually have the knowledge about their expenditure on their daily basis, weekly as well as monthly basis. This systematic way of sorting your information related to your expenses would help you to keep a track of Your expenditure and further you do not have to do the manual stuff. Some statistical analysis have to be done to be able to give users correct information on their expenses and help them spend better. This helps the society to prevent the issues like bankruptcy and save time from manual calculations. Usercan

provide his/her income to calculate the total expense per day and result will be sorted for each individual user. People when usually go for trips with friends, can use this tracker to maintain their expense.

2.2 References

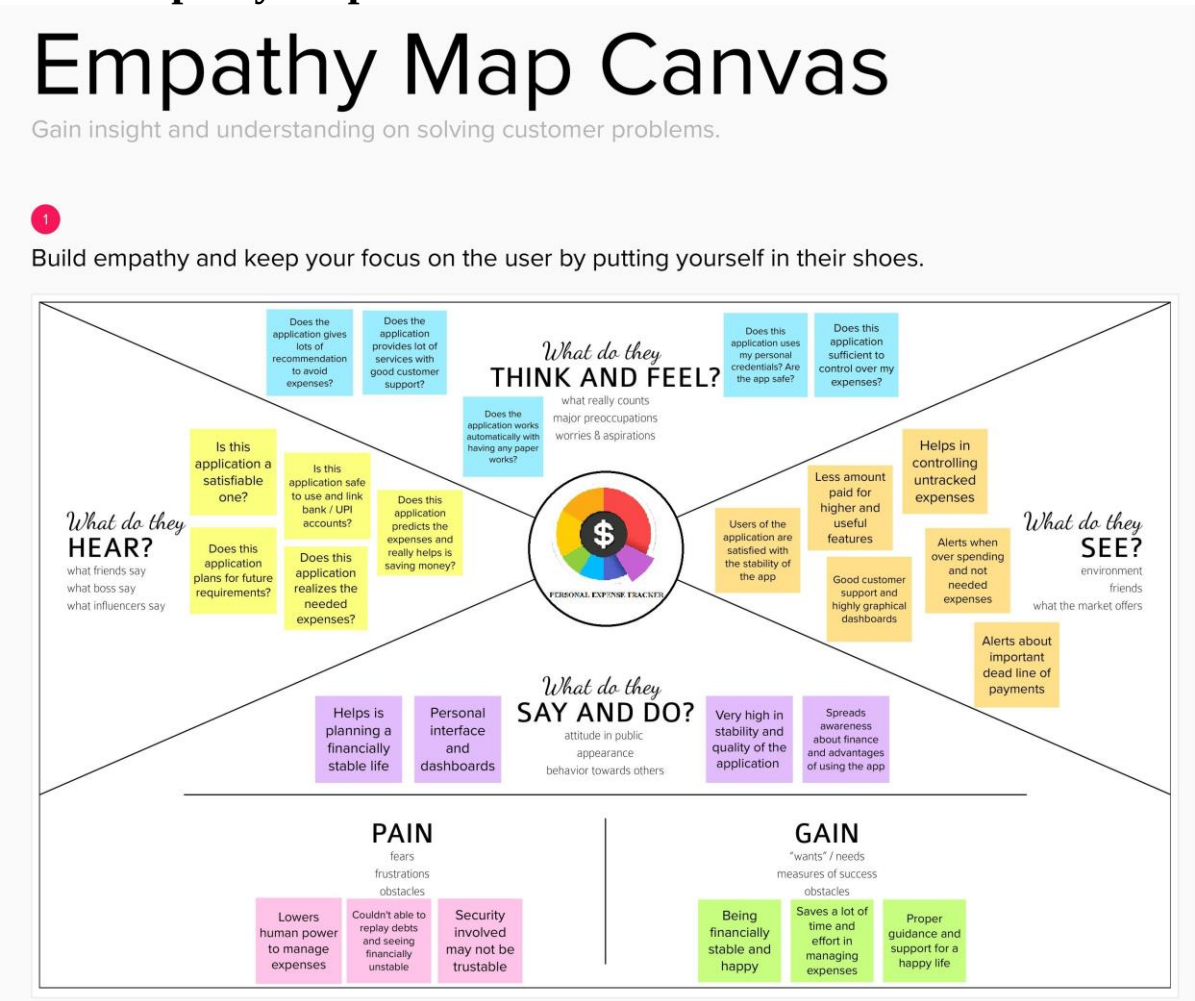
1. **https://ijirt.org/master/publishedpaper/IJIRT151474_PAPER.pdf**
2. **https://iopscience.iop.org/article/10.1088/1757-899X/263/4/042050**
3. **https://www.irjet.net/archives/V6/i3/IRJET-V6I31110.pdf**

2.3 Problem Statement Definition

Many organizations have their own system to record their income and expenses, which they feel is the main key point of their business progress. It is good habit for a person to record daily expenses and tracking the expenses throughout the month is essential because it provides insight about the way in which the money is spent and also helps to frame a better budgeting plan for the upcoming days. Thus, personal expense tracker application has made tracking and managing expenses a breeze.

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas



3.2 Ideation & Brainstorming

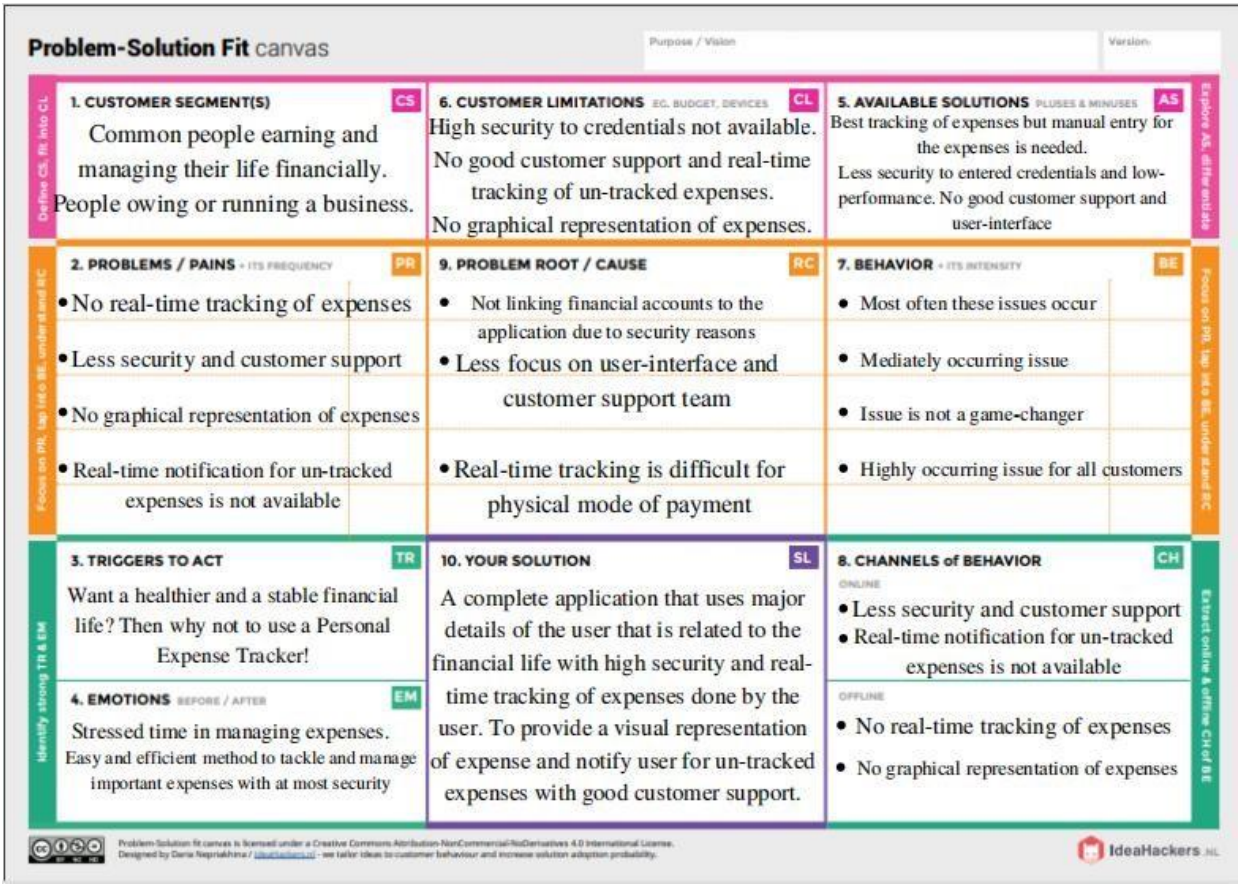
3.3 Proposed Solution

S.No	Parameter	Description
1.	Problem Statement	Many Organizations have their own system to record their income and expenses. It is good for a person to record daily expenses and tracking the expenses throughout the month is essential. Thus, personal expense tracker application has made tracking and managing expenses a breeze.
2.	Novelty	This app effectively works in providing financial management and helps in maintaining healthy and happier financial life fulfilling all needs and requirements as the user's comfort. This app provides a higher range of accuracy regarding real-time effectively and security.
3.	Feasibility of Idea	User can easily maintain their untracked expenses and the app helps the user to record their expenditure. This app can achieve economic feasibility and security feasibility with at most care and support to the user.
4.	Business Model	The application can be provided based on user required feature and the cost depends on the usage.

5.	Social Impact	This application can create awareness among common people about finance and stuffs. This application also helps user to be financially responsible.
6.	Scalabilty of the Solution	This application can handle large number of users and data with high performance and security at any given point of time.

3.4 Problem Solution fit

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why.



4. REQUIREMENT ANALYSIS

4.1 Functional requirements

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Financial Accounts	Account Details Verification of Details
FR-4	User Dashboard	Expense Data Data Records
FR-5	User Notifications	System Access Real time Alerting
FR-6	Security of User Data	Secured Database Data Security Algorithms

4.2 Non-Functional requirements

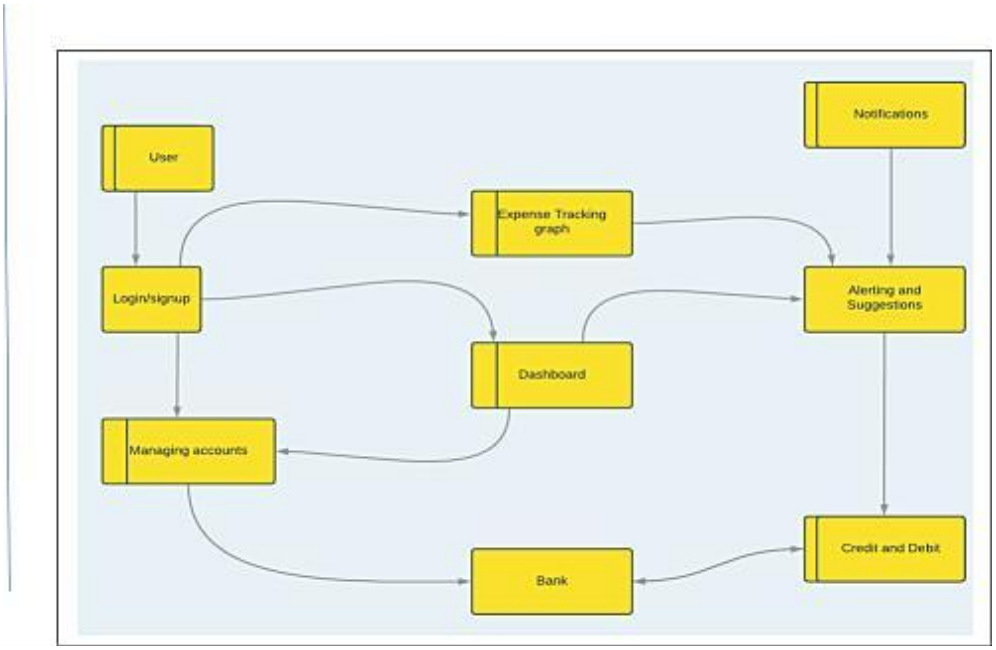
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	By using this application, the user can keep track of their expenses and can ensure that user's money is used wisely.
NFR-2	**Security**	Maintain user personal details in a encrypted manner by using data security algorithms .
NFR-3	**Reliability**	It will maintain a proper tracking of day-to-day expenses in an efficient manner.
NFR-4	**Performance**	By enter our incoming and departing cash, and the software can help you keep and monitor it with at-most quality and security with high performance.
NFR-5	**Availability**	Using charts and graphs may help you monitor your budgeting and assets.
NFR-6	**Scalability**	Rely on your budgeting app to track, streamline, and automate all the recurrent expenses and remind you on a timely basis.

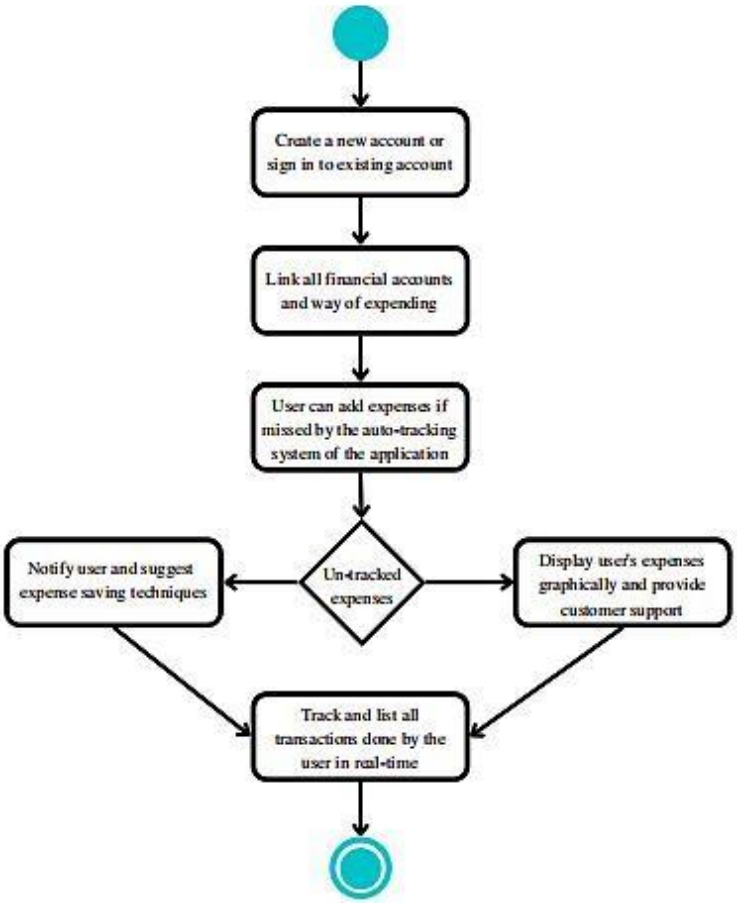
5. PROJECT DESIGN

5.1 Data Flow Diagrams

A Data flow diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



5.2 Solution & Technical Architecture



5.3 User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Social media accounts	I can register & access the dashboard with Social media Login	Low	Sprint-2
	Login	USN-4	As a user, I can log into the application by entering email & password	I can access my account / dashboard	High	Sprint-1
	Dashboard	USN-5	Once logged in , based on user's expenses and data records , graphical representation is achieved	I can view my updated dashboard	High	Sprint-2
	Financial account	USN-6	As a user, I can add and remove any financial accounts	I can manage financial accounts	High	Sprint-2
	Notifications	USN-7	As a user, I can receive alerting notifications on untracked expenses	Untracked expenses are alerted	High	Sprint-3
		USN-8	As a user, I can receive suggesting notifications for saving and earning money	Suggestions are notified	Low	Sprint-3

Project Planning Phase

Project Planning (Product Backlog, Sprint Planning, Stories, Story points)

Date	23 October 2022
Team ID	PNT2022TMID04269
Project Name	Project – Personal Expense Tracker
Maximum Marks	8 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint - 1	Registration	USN -1	As a user , I can register for the application by entering my email , new password and confirming the same password.	2	High	Jeyakrishna Amit
		USN -2	As a user , I will receive confirmation email once I have registered for the application.	1	Low	
	Login	USN -3	As a user , I can log into the application by entering email and password / Google OAuth.	2	High	Aslam Jassim
	Dashboard	USN -4	Logging in takes the user to their dashboard.	1	Low	
Sprint - 2	Workspace	USN -5	As a user ,I will update my salary at the start of each month.	1	Medium	Kishore
		USN -6	As a user , I will set a limit to keep track of my expenditure.	1	Medium	Jassim
		USN -7	Workplace for personal expense tracking	1	Medium	Aslam
	Charts	USN -8	Graphs to show weekly and everyday expenditure	2	High	Jeyakrishna

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint - 3	IBM DB2	USN -9	Linking database with dashboard	2	High	Amit
		USN -10	Making dashboard interactive with JS	2	High	Jassim
	Watson Assistant	USN -11	Embedding Chatbot to clarify user's queries.	1	Low	Kishore
	SendGrid	USN -12	Using SendGrid to send mail to the user. (To alert or remind)	1	Medium	Aslam
Sprint - 4	Integration	USN -13	Integrating frontend and backend.	2	High	Amit
	Docker	USN -14	Creating Docker image of web app.	2	High	Jeyakrishna
	Cloud Registry	USN -15	Uploading docker image to IBM cloud registry.	2	High	Kishore
	Kubernetes	USN -16	Creating container using docker and hosting the webapp.	2	High	Jassim
	Exposing Deployment	USN -17	Exposing IP/Ports for the site.	1	Medium	Aslam

6.2 SPRINT DELIVERY SCHEDULE:

Project Tracker, Velocity & Burndown Chart: (4 Marks)

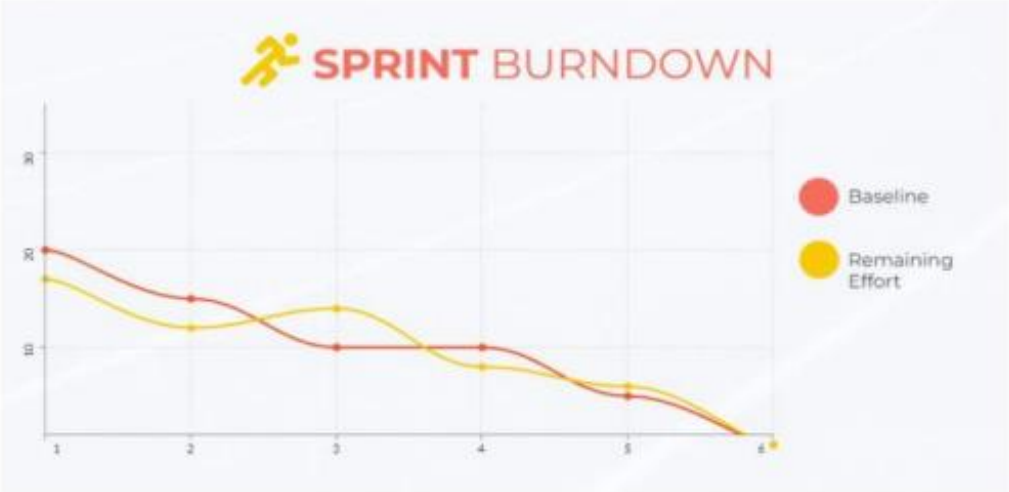
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	2 Nov 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	15	4 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	14 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	18 Nov 2022

Velocity:
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

Burndown Chart:

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.

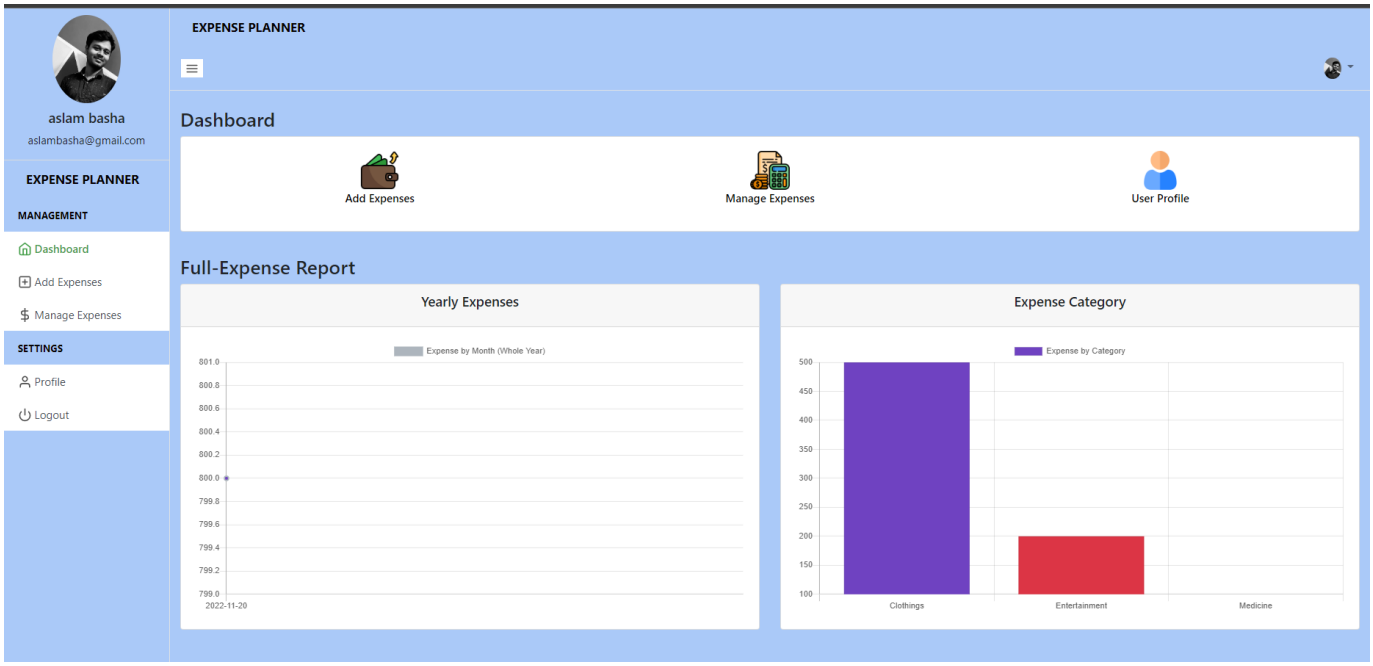


CHAPTER 7

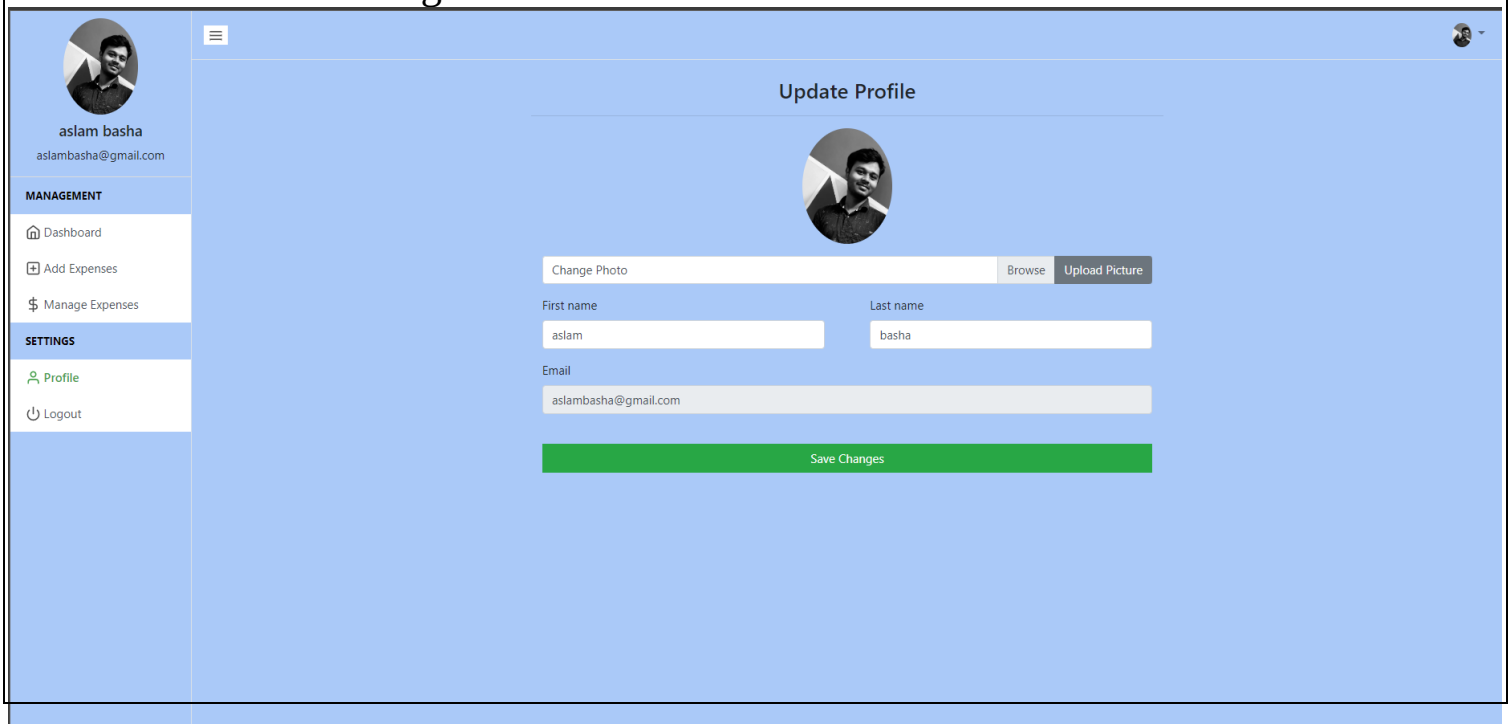
Coding And Solutioning

7.1. Features

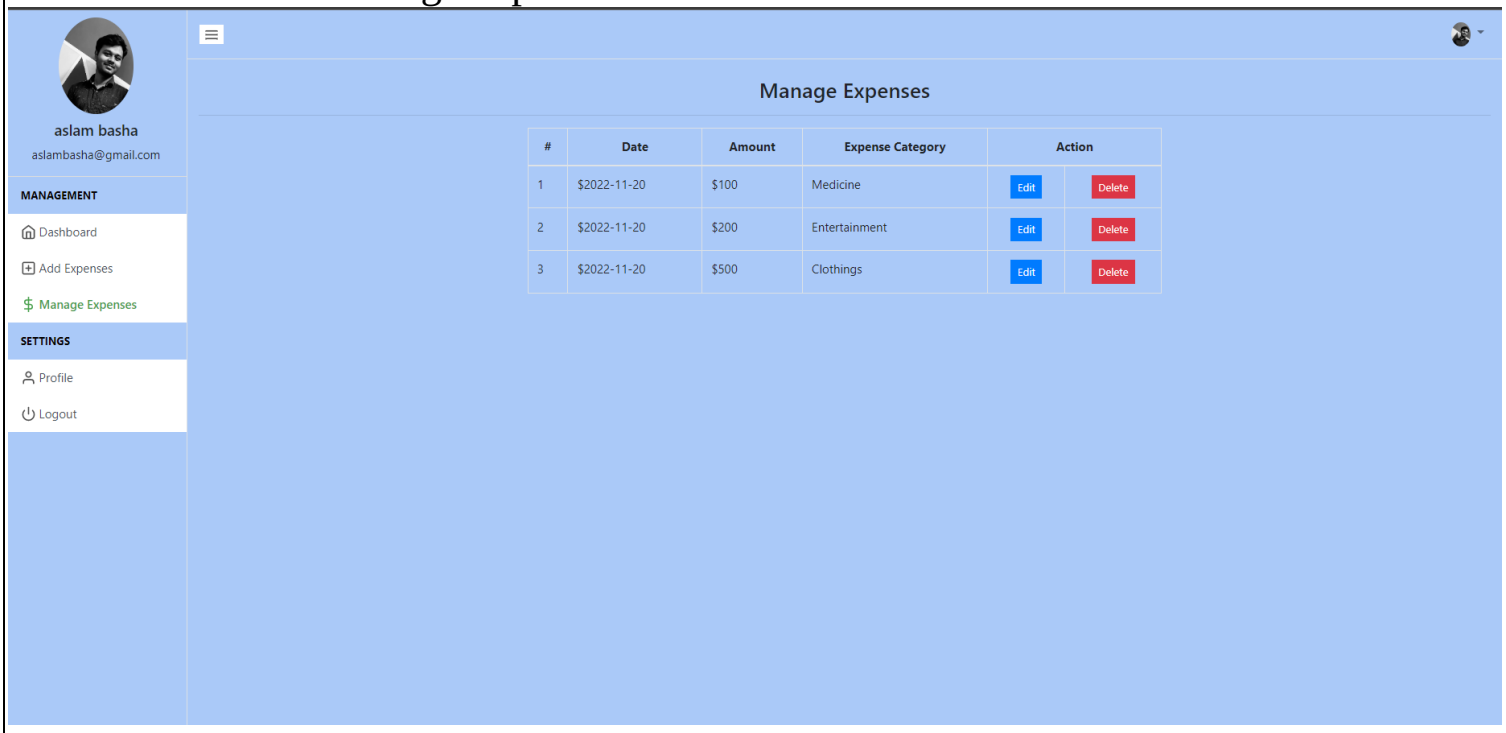
Feature 1 : Dashboard



Feature 2 : Manage account



Feature 3 : Manage expenses



7.2. Other Features:

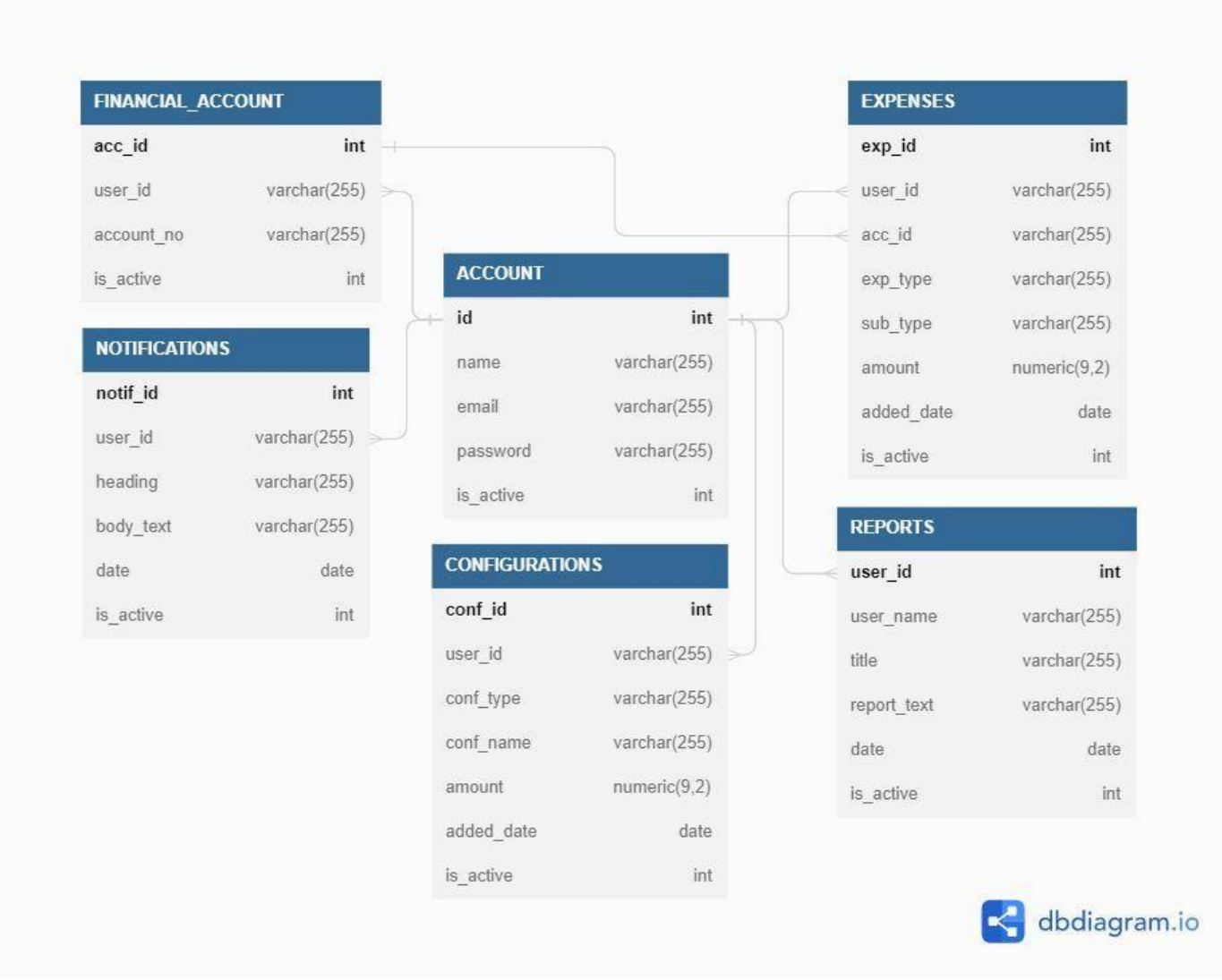
Track your expenses anywhere, anytime. Seamlessly manage your money and budget without any financial paperwork. Just click and submit your invoices and expenditures. Access, submit, and approve invoices irrespective of time and location. Avoid data loss by scanning your tickets and bills and saving in the app. Approval of bills and expenditures in real- time and get notified instantly. Quick settlement of claims and reduced human errors with an automated and streamlined billing process.

7.3. Codes:

The Code was in the following GitHub link Code.

Demo link : Demo Link

7.4. DB Schema:



CHAPTER 8

TESTING

8.1. TESTING:

1. Login Page (Funcional)
2. Login Page (UI)
3. Add Expense Page (Functional)

8.2. User Acceptance Testing:

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] project at the time of the release to User Acceptance Testing (UAT).

2. Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	5	3	2	5	15
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	0	0	0
Skipped	0	0	0	1	0
Won't Fix	0	5	2	1	7
Totals	19	13	11	25	69

3. Test Case Analysis

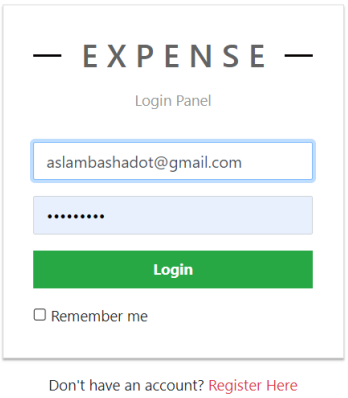
This report shows the number of test cases that have passed, failed, and untested

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	10	0	0	10
Client Application	51	0	0	51
Security	0	0	0	0

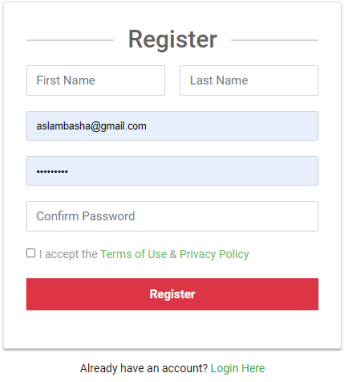
CHAPTER 9

RESULTS

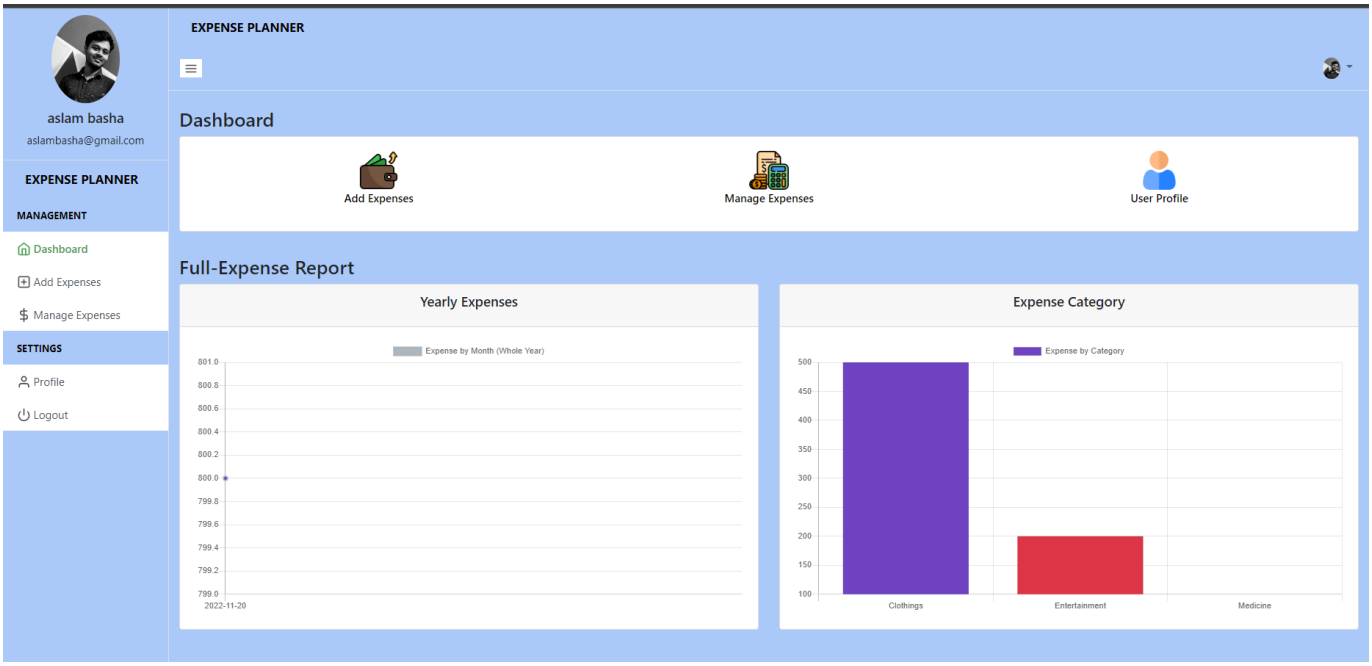
9.1 Login Page



9.2 Signup page

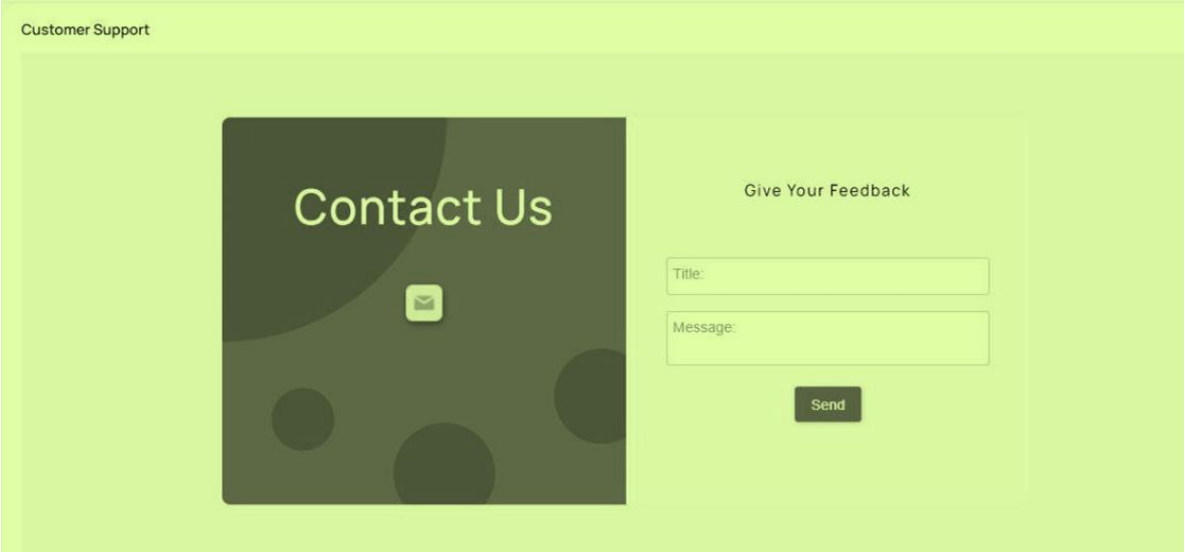


9.3 Dashboard



9.4 Manage Accounts

9.5 Customer Support



CHAPTER 10

ADVANTAGES AND DISADVANTAGES

10.1. ADVANTAGES:

Keeping accurate records of personal expenses is very important for many reasons,

- Create a monthly budget
- Know where you're spending more than you actually think youare
- Figure out ways to cut back on your spending
- Know how much extra payments you can make towards your debt
- Plan for future large purchases
- Create a savings plan for putting money away every month
- Plan for retirement
- Create an investment strategy with extra money

In short, knowing where each dollar is going to go before you spend it will help it spend more time in your bank account.

10.2. DISADVANTAGES:

A con with any system used to track spending is that one may start doing it then taper off until it's forgotten about all together. Yet, this is a risk for any new goal such as trying to lose weight or quit smoking. If a person first makes a budget plan, then places money in savings before spending any new pay period or month, the tracking goal can help. In this way, tracking spending and making sure all receipts are accounted for only needs to be done once or twice a month. Even with constant tracking of one's spending habits, there is no guarantee that financial goals will be met. Although this can be considered to be a con of tracking spending, it could be changed into a pro if one makes up his or her mind to keep trying to properly manage all finances. Another con that may occur when spending is being tracked is an error, but this may also be able to be changed into a pro if the person does regular tracking. Frequent tracking of cash spending can allow one to catch and correct errors so that the budget plan is still able to be adhered to despite the mistake.

CHAPTER 11

CONCLUSION

A comprehensive money management strategy requires clarity and conviction for decision making. You will need a defined goal and a clear vision for grasping the business and personal finances. That’s when an expense tracking app comes into the picture. An expense tracking app is an exclusive suite of services for people who seek to handle their earnings and plan their expenses and savings efficiently. It helps you track all transactions like bills, refunds, payrolls, receipts, taxes, etc., on a daily, weekly, and monthly basis.

CHAPTER 12

FUTURE SCOPE

1. Achieve your business goals with a tailored mobile app that perfectly fits your business.
2. Scale-up at the pace your business is growing.
3. Deliver an outstanding customer experience through additional control over the app.
4. Control the security of your business and customer data.
5. Open direct marketing channels with no extra costs with methods such as push notifications.
6. Boost the productivity of all the processes within the organization.
7. Increase efficiency and customer satisfaction with an app aligned to their needs.
8. Seamlessly integrate with existing infrastructure.
9. Ability to provide valuable insights.
10. Optimize sales processes to generate more revenue through enhanced data collection.
11. Robo Advisors: Get expert investment advice and solutions with the Robo-advisors
12. feature. This feature will analyze, monitor, optimize, and improve diversification in investments by turning data into actionable insights in real-time. Chats: Equip your expense tracking app with a bot that can understand and answer all user queries and address their needs such as account balance, credit score, etc.

13. Prediction: With the help of AI, your mobile app can predict your next purchase, according to your spending behavior. Moreover, it can recommend products and provide unique insights on saving money. It brings out the factors causing fluctuations in your expenses.

14. Employee Travel Budgeting: Most businesses save money with a travel budgeting app as It helps prepare a budget for an employee's entire business trip. The feature will predict the expenses and allocate resources according to the prediction.

CHAPTER 13

APPENDIX

The Code was in the following git hub link Code.
Demo link : https://youtu.be/yc-_CnL_2CA