# Personal Expense Tracker Application

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### PERSONAL EXPENSE TRACKER APPLICATION:

#### **Introduction:**

The web application "Personal Expense Tracker" is developed to manage the daily expenses in a more efficient and manageable way. By using this application, we can reduce the manual calculations of the daily expenses and keep track of the expenditure. In this application, user can provide his income to calculate his total expenses per day and these results will be stored for each user. Sometimes we can't remember where our money goes. And we can't handle our cash flow.

For this problem, we need a solution that everyone can manage their expenses. So, we decided to find an easier way to get rid of this problem. So, our application attempts to free the user with as much as possible the burden of manual calculation and to keep the track of the expenditure. Instead of keeping a diary or a log of the expenses, this application enables the user to not just keep the control on the expenses but also to generate reports and analysis.

With the help of this application, the user can manage their expenses on a daily, weekly, monthly, and yearly basis. Users can insert and delete transactions as well as can generate reports and analysis. The graphical representation of the application along with the reminders and loan tracking is the main part of the system as it makes a full-fledged application of managing all the tasks.

## **Purpose:**

The main purpose of this application is to provide the customers with all the abilities to manage their personal expenses. For an average individual, it is very difficult to track expenses as it takes a long time because there are way too many expenses to track. It is not feasible to manage personal transactions in various accounts as it is not trackable because there are various payment options to consider. This makes it hard to save money because of high unmanageable expenditures. It is also difficult to calculate the taxes because needs statistical thinking and management of various assets such as vehicles, properties, salary etc. Users try to analyze expenses, but they can't do it efficiently because it may involve a lot of data and graphical representations which makes it complicated. Users feel frustrated, confused, stressed etc. which makes them give up.

## LITERATURE SURVEY:

<b>Project Title</b>	Publisher	Advantages	Disadvantages
Expenditure	Journal Of	It provides	Lacks in providing
Management System	Engineering,	reminders	the
	Computing &	to assist user to track	savings analysis and
	Architecture	the project	records
Expense Tracker: A	EasyChair Preprint	It provides the user	The application is
Smart Approach to		to choose an expense	not user friendly and
Track		category and add	lacks in UI.
		additional info such	
		as a photo, a	
		location, expense	
		made.	
Expense Tracker	IJARSCT	The application they	Security provided by
		proposed allows	the application is
		users to keep up a	low.
		digital automated	
A1!	D	diary.	Th. 41-1 f
Application for Predictive	Darsh Shah, Sanay	They offer shortcut and indicators to the	The tracking of loans and reminders
Recommendation	Shah, Ritik Savani		
and Visualization of		consumer to go into the ordinary	is not provided
Personal Expenses		expenses from time	
Tersonal Expenses		to time	
Daily Expense	Muskaan Sharma1,	They used ReactJS	The analysis reports
Tracker	Ayush Bansal2	to make it feasible	the expenses and
Trucker	Try don Dansaiz	for builders to	savings is not
		broaden User	generated.
		Interfaces (UI)	generated:
		without difficulty	
		via way of means of	
		dividing it into	
		diverse additives and	
		additionally to	
		develop fast systems	
A Review on Budget	Namita Jagtap,	This utility is meant	No specific usage of
Estimator Android	Priyanka Joshi,	to run on android	Chabot in the cloud
Application	Aditya Kamble	tool specifically	or the usage of any
		clever phone.	helping service that
			would serve the
			expense customers

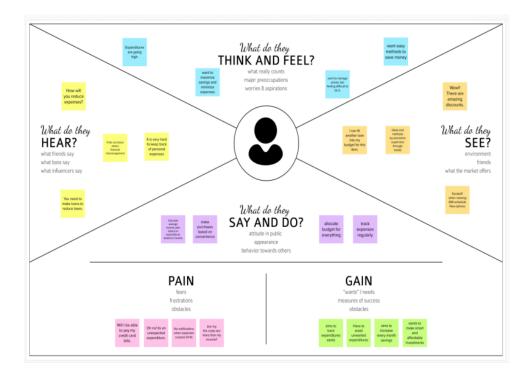
#### **Problem Statement Definition:**

In order to guide the customers to manage all the expenses in their everyday life, a personal expense tracker has to be introduced to provide people with the best solution possible. The users arethe customers who need to manage expenses, and guide them through the various features of the application. So, an enhanced and smarter way of interaction with the customers has to be built to ensure efficient way of managing the expenses. In order to overcome the user satisfaction issues associated with tracking services, a Chabot will provide personal and efficient communication between the users. It is built to be the managing system that can facilitate customers to track expenses, add savings, loan management and getting reminders for the same.

#### **IDEATION & PROPOSED SOLUTION:**

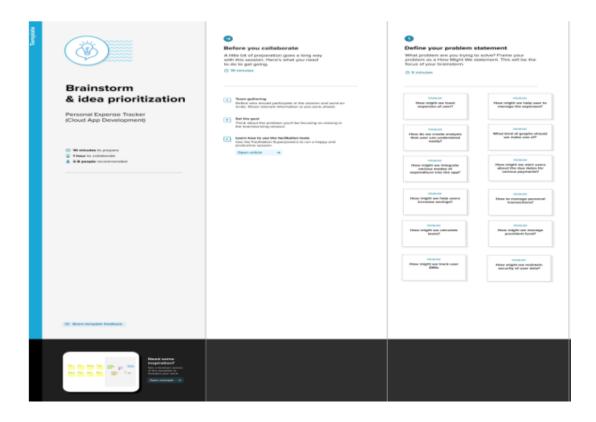
#### **Empathy Map Canvas:**

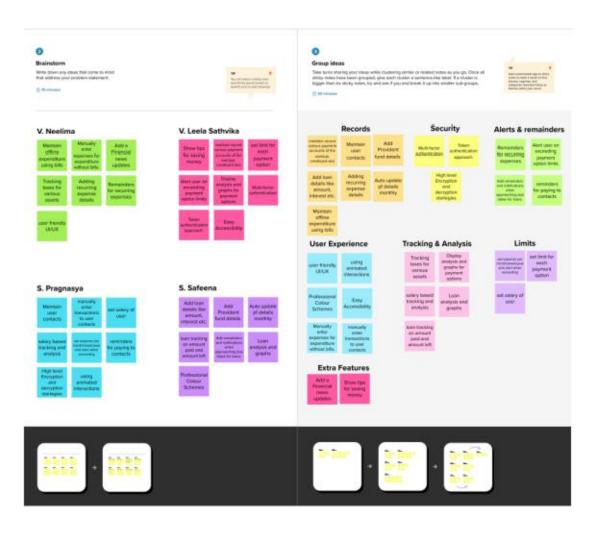
An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviors and attitudes. It is a useful tool to helps teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.

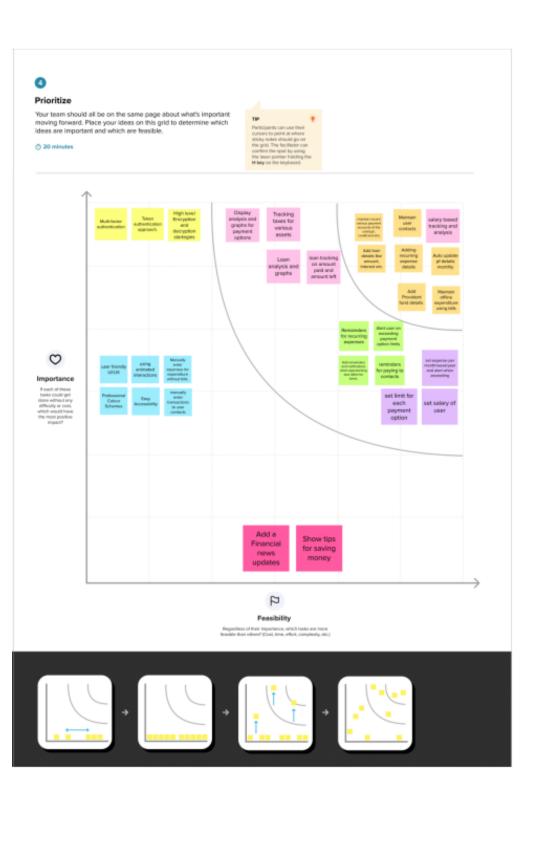


# **Ideation & BrainStroming**:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.



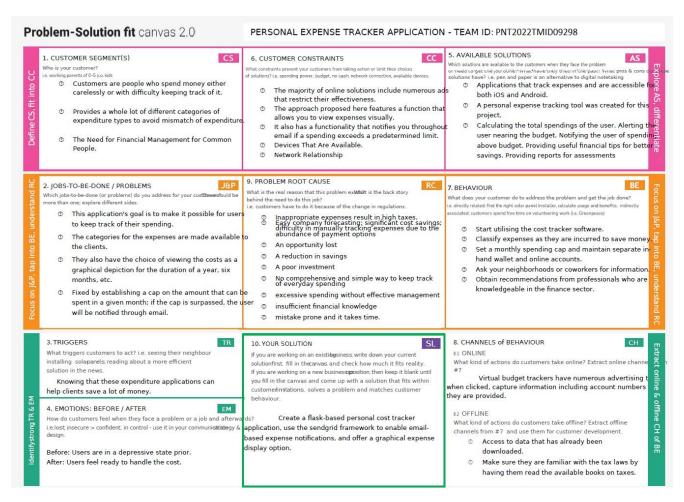




# **Proposed Solution:**

The solution to the problems described is a personal expense tracker application with capabilities for analysis and graphical implementations. Users can add their expenses, their payment options, contacts, loans, reminders, EMIs etc which are also tracked and manageable by the user. Detailed graphs are generated as per user convenience. Limits can be set for each payment option and salary. Alerts a provided when expenditure reaches the set limit. This application can also be used to calculate taxes, provident fund and deposits. The application also provides tips to save money and has a news section for financial updates. This application is user-friendly and has easy accessibility. Users can add recurring payments like rent, loans, etc, set due dates and be reminded from time to time. It is an allround application to track a user's expenses that makes life easier.

#### **Problem Solution Fit:**



# REQUIREMENT ANALYSIS

# **Functional requirement**

The 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 Gmail
FR-2	User Confirmation	Confirmation via Email
FR-3	User Login	Authentication
FR-4	Dashboard	Small graph previews, news updates, monthly savingsand expense previews.
FR-5	Navigation Side Menu	Nav buttons to all modules, Sign out, Settings andprofile module
FR-6	Expense Tracker Module	Add Expense, Delete Expense, Modify Expense, ViewExpenditure Graph,
FR-7	Remainders Module	Add Remainder, Add Recurring Expense PaymentRemainder, Add Loan Remainders
FR-8	Savings and Finance Module	Add Monthly income, Modify monthly income, AddOther sources of income, View Savings graph
FR-9	User Profile Module	Edit User Profile
FR-10	Settings Module	Edit settings

## **Non-Functional requirements**

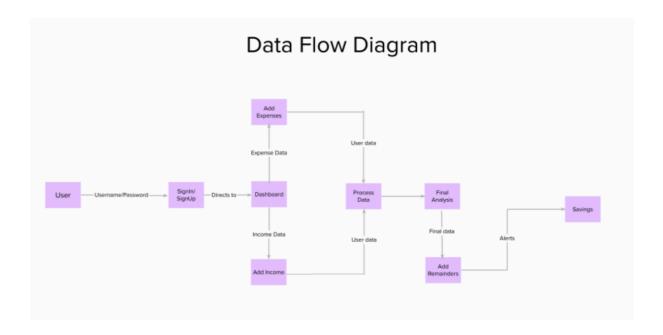
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description	
NFR-1	Usability	The solution is easy to use as the UI is made to be accessible and user-friendly. Easy navigation is provided through an integrated sidemenu and chatbot assistance.	
NFR-2	Security	Application is highly secure as all data is encrypted using a secure encryption algorithm and user data is accessible only on authentication.	
NFR-3	Reliability	Application is highly reliable as it is deployed with IBM cloud assistance.	
NFR-4	Performance	Performance is stable and smooth as it is very light weight application built with flask.	
NFR-5	Availability	It is available easily as it is deployed on the internet.	
NFR-6	Scalability	Application is scalable as it uses IBM cloud resources and microservices architecture. Extensions and modifications are done easily.	

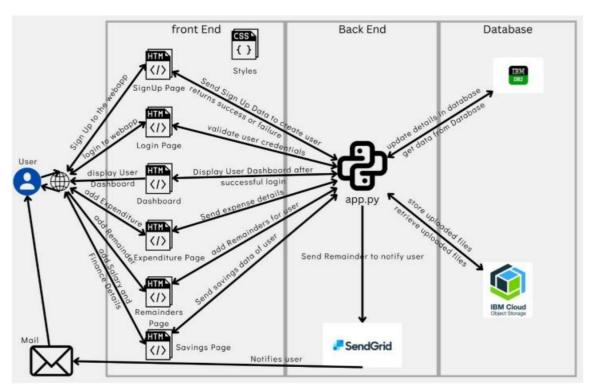
# **Project Design:**

# **Data Flow Diagrams**

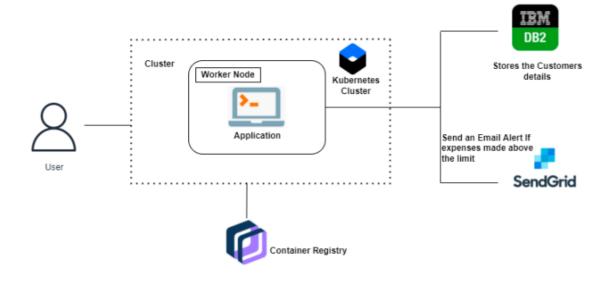
A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



# **Solution Architecture:**



# **Technical Architecture:**



# **Project Planning and Designing:**

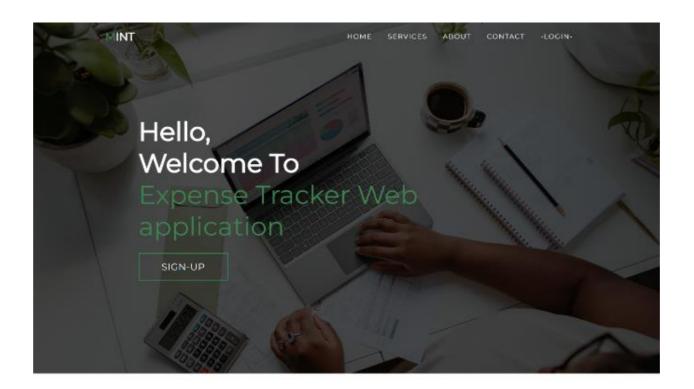
**Sprint Planning & Estimation:** 

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	High	Mohamed Rafi
Sprint-1		USN-2	As a user, I will receive confirmation email onceI have registered for the application	High	Praghadiesh
Sprint-1		USN-3	As a user, I can register for the applicationthrough Facebook	Low	Pritam
Sprint-1		USN-4	As a user, I can register for the applicationthrough Gmail	Medium	Rohit Krishna
Sprint-2	Login	USN-5	As a user, I can log into the application byentering email & password	High	Mohamed Rafi
Sprint-2	Dashboard	USN-6	As a user, I can create my user profile	High	Praghadiesh

Sprint-2		USN-7	As a user, I can add total income and total expenses	High	Pritam
Sprint-2		USN-8	As a user, I can visualize the expenses	Medium	Rohit Krishna
Sprint-3		USN-9	As a user, I will upload my monthly income inthe application	High	Rohit Krishna
Sprint-3	Account Sync	USN-10	As a user, I can sync my accounts and wallets	High	Mohamed Rafi
Sprint-3		USN-11	As a user, I can edit income and expenses	Low	Praghadiesh
Sprint-3		USN-12	As a user, I can set the targeted budget	High	Pritam
Sprint-4		USN-13	As a user, I can add reminder and get notified	Low	Mohamed Rafi
Sprint-4		USN-14	As a user, I can filter the expenses by graphsand periods	Medium	Praghadiesh
Sprint-4	Service Support	USN-15	As a user, I can chat with the inbuilt customercare chat bot	High	Pritam
Sprint-4		USN-16	As a user, I can export the raw data from theapp	Medium	Rohit Krishna

# **Project Screenshots:**

## Application Landing Page:



# SERVICES

Hint provides a many services to the customer and industries illnaridal solutions to mae: your needs whatever your indines coast, there is a Virtual Culon to herosop reach them.











# ABOUT US

#### Financial Solution

Mind financiar solution is one among baseing financial company from many years Mint provides a many services to the sustemer and industries. Financial solutions to meet your necessivistical your many postulaters is a Mint solution to help you reach them a can certain solve consider for further information and also follow our social media for update na pera solviers.

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# **CONTACT INFO**







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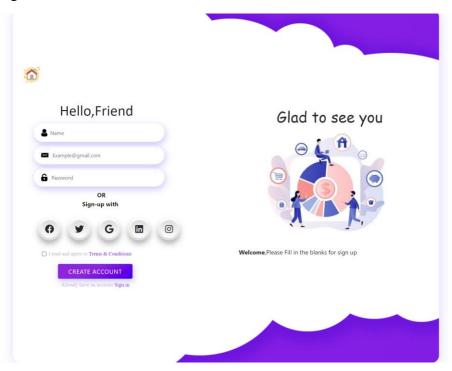
(i) (ii) (iii)



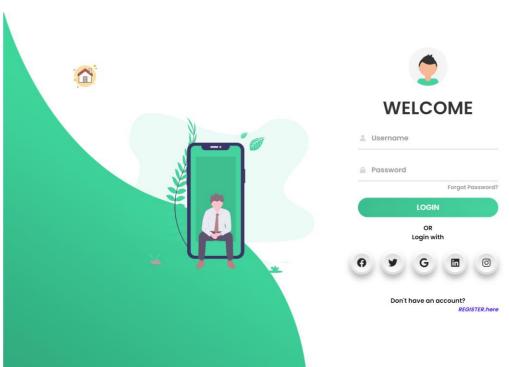




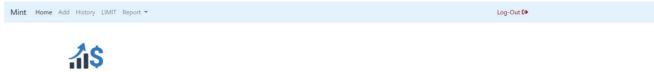
# Registration Page:



# Login Page:



## Home Page:



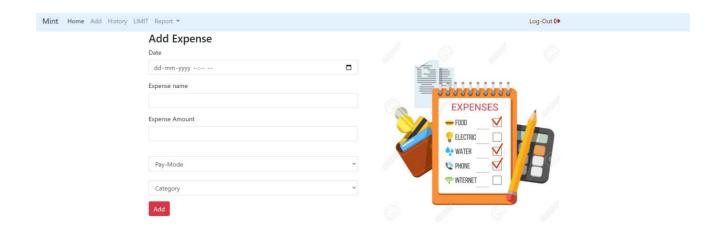


BUDGET TRACKING

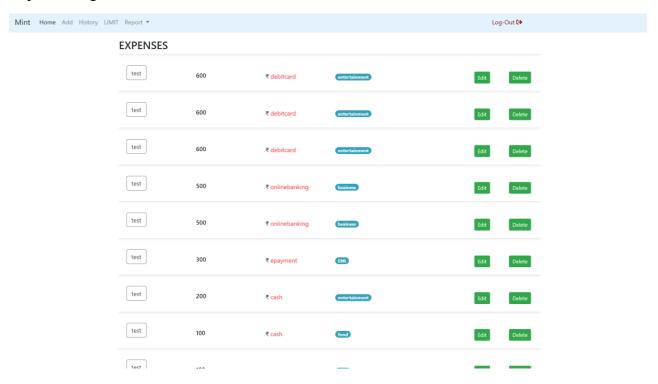
### **LET START JOURNEY**

Mint web application helps you to maintain budget and analyse the expense

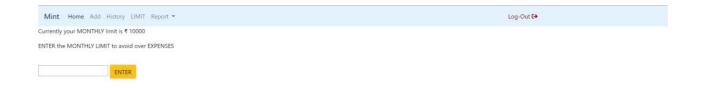
## Add Expense Page:



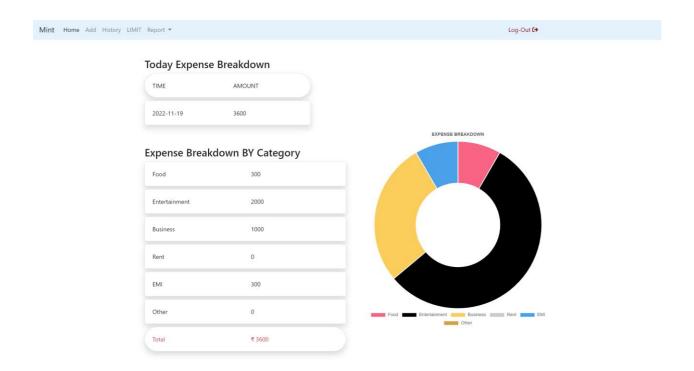
# Expenses Page:



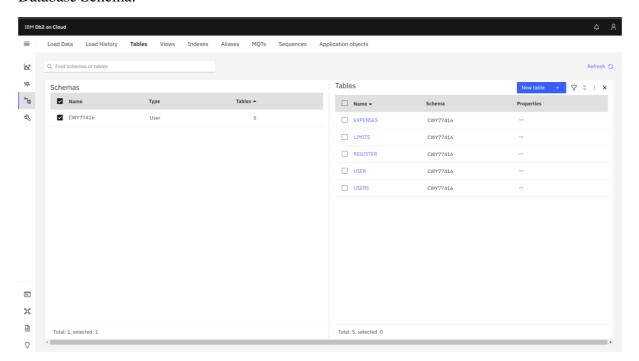
## Set Limit Page:



## Report Generation Page:



## Database Schema:



# **TESTING**

## **Test Cases**

S.No	Test Cases	Passed/ Failed
1.	Login and Logout	Passed
2.	Profile Creation and Editing	Passed
3.	Expenses – Add, Edit and Delete	Passed
4.	Expense Analysis Module	Passed
5.	Savings – Add, Edit and Delete	Passed
6.	Savings Analysis Module	Passed
7.	Reminders – Add, Edit and Delete	Passed
8.	Loan Tracker – Add, Edit and Delete	Failed to Deploy

# **User Acceptance Testing**

S.No	Test Cases	Yes/ No
1.	Keyword driven	Yes
2.	Responds in manually drafted rules	Yes
3.	Manages multiple users	Yes
4.	Conversational Paradigm	Yes
3.	Learns from real interactions	Yes
4.	Training via historical data	No
5.	Has decision-making skills	No

#### RESULTS

#### **Performance Metrics**

Cloud performance monitoring and testing tools help organizations gain visibility into their cloudenvironments, using specific metrics and techniques to assess performance. Efficient cloud performance is critical for maintaining business continuity and ensuring all relevant parties gain access to cloud services. This is true for basic cloud usage of public clouds and complex hybrid clouds and multi-cloud architectures. Cloud performance metrics enable you to effectively monitoryour cloud resources, to ensure all components communicate seamlessly. Typically, cloud performance metrics measure input/output operations per second (IOPS), filesystem performance, caching, and autoscaling.

S. No	Test Cases	Time
1.	Error rates	1 second
2.	Response times	3 seconds
3.	Request rates	1.14 seconds
4.	Customer experience	Good

### **ADVANTAGES & DISADVANTAGES**

## Advantages

- Available 24/7 across the globe
- Easy tracking of savings and expenses
- User friendly dashboards
- Understandable charts and graphs
- Updated to the latest details
- Easy to setup and communicate

## Disadvantages

- Direct connection with bank account could not be achieved
- Loan Tracker page could not be deployed
- Multiple profiles not available

#### **CONCLUSION**

This project focuses on tracking the personal finances of a user. It is implemented in a user-friendly and accessible manner to achieve all the financial asset maintenance goals of an individual. The new system has overcome most of the limitations of the existing system and works according to the design specification given. The project what we have developed is work more efficient than the other income and expense tracker. The project avoids the manual calculation for avoiding calculating the income and expense per month. The modules are developed with efficient and alsoin an attractive manner. The developed systems dispense the problem and meet the needs of by providing reliable and comprehensive information. All the requirements projected by the user havebeen met by the system.

The newly developed system consumes less processing time, and all the details are updated and processed immediately. Since the screen provides online help messages and is very user-friendly, any user will get familiarized with its usage. Module s are designed to be highly flexible so that any failure requirements can be easily added to the modules without facing many problems. The best organizations have a way of tracking and handling these reimbursements. This project also focuses on giving set reminders for users who wish to be up to date in their payments. This project gives aesthetic charts and analysis for the user's financial records.

#### **FUTURE SCOPE**

The future of project lies entirely on how the customers get benefitted from the interaction and theinterface. We would have to make improvements in the application to make it more user-friendly. The following areas could have a serious impact on our scope:

- i. Support for multiple accounts
- ii. Direct Connection with bank
- iii. Tips and Recommendations on where to save money.

Github repo link: <a href="https://github.com/IBM-EPBL/IBM-Project-31167-1660197120">https://github.com/IBM-EPBL/IBM-Project-31167-1660197120</a>

Demo Link: <a href="https://drive.google.com/file/d/1jo0D-lV-0awNdKjd0N2GrYAlb08HFVAD/view?usp=share\_link">https://drive.google.com/file/d/1jo0D-lV-0awNdKjd0N2GrYAlb08HFVAD/view?usp=share\_link</a>