

# **Personal Expense Tracker Application**

## **1. INTRODUCTION**

### **1.1. Project overview**

Personal expense tracker which keeps track on your income and expense and alerts the user if the limit exceeds. It is a one kind of digital diary that helps to keep on eye on all of our money related transition and also provides all financial activities report .In today's busy and expensive life we are in great rush to make money but at the end of the we broke off. Expense tracker is a refined system which allows user to efficiently manage his/her expenses with ease. Tracking expense daily can really help to us save lot of money. Where you are sending your money so you in control and achieve your goal .

### **1.2 Purpose**

It is essential that purpose needs to keep careful track of their expenses to make sure that they stay on budget . It is developed in such a way that it's now easier to track the expenses than ever before within seconds . Because money matters. The main aim of the project is to create a faster, easier and smooth system between the expense and the income. So, for the better expenses tracking we built. A personal tracker is the best way to record your financial data.

## **2. LITERARURE SURVEY**

### **2.1 Existing Problem**

In the busy world people don't have time to have a track on their expenses and income which results in an inappropriate transaction history

## 2.2 References

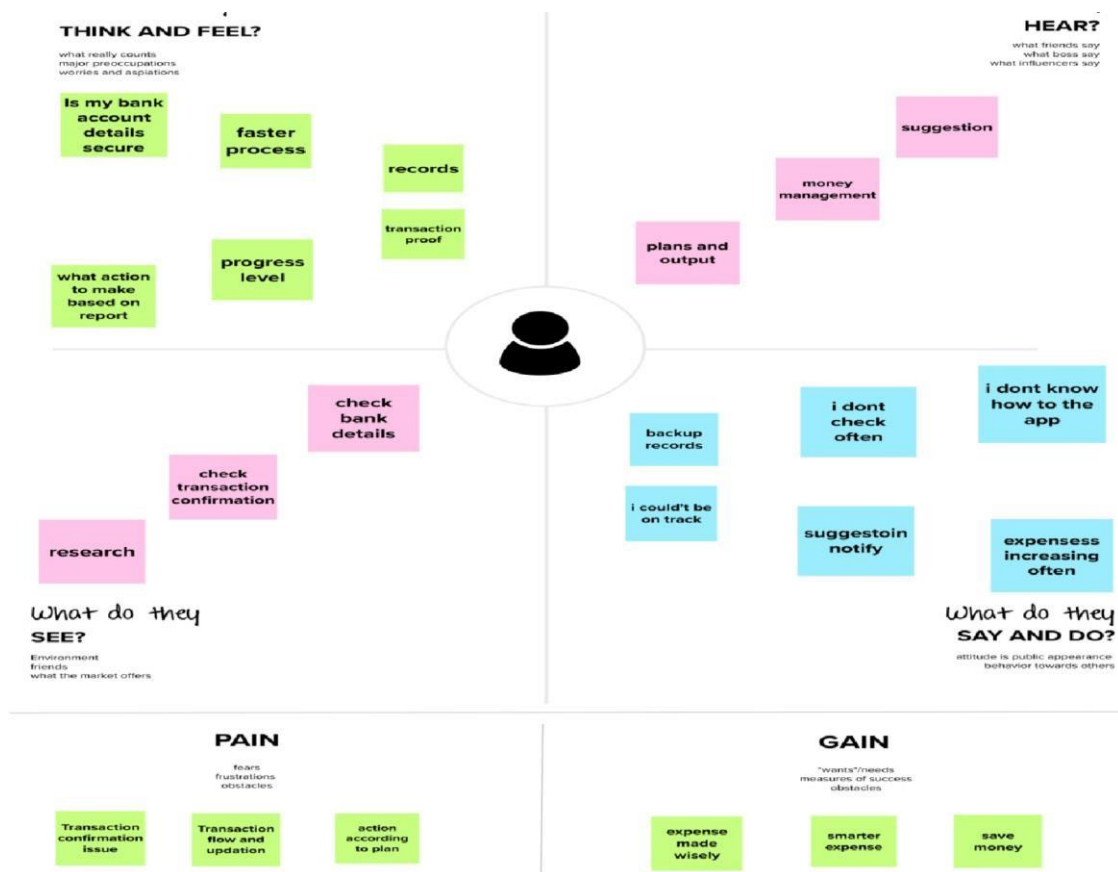
S.NO	AUTHOR	YEAR	TITLE	DESCRIPTION
1.	Angad Manchanda	2012	Expense Tracker Mobile Application	This mobile application is a full detailed expense tracker tool that will not only help users keep a check on their expenses, but also cut down the unrequired expenses, and thus will help provide a responsible lifestyle.
2.	Girish Bekaroo and Sameer Sunhaloo	16 June 2014.	Intelligent Online Budget Tracker	Intelligent Online Budget Tracker system will help to plan and track household-budget related issues where members of the system can securely access it anytime from anywhere via the Internet.
3.	Namita Jagtap, Priyanka Joshi and Aditya Kamble	Apr 2019	A Review on Budget Estimator Android Application	This project is about mobile application Expenses system with geo-location tracking,Based on the location of the user, it using Google Places to check the available store in the area, provides a notification for offers purpose. In term of security design, this system may implement aloginauthentication such as OTP message to your mobile device, this function may bring more security confidence to user.
4.	HrithikGupta, Anant Prakash Singh,Navneet Kumar and Ms.J.Angelin Blessy	Dec 25, 2020	Expense Tracker : A Smart Approach to Track Everyday Expense	Expense Tracker system is used by any person to control his income-expenditure from daily to annual basics. And to keep an eye on their spending. This app is very easy to use and mutli-language. The main feature of this app is that you can track by day and category. You can use it according to your category.
5.	Dr. V. Geetha, G. Nikhitha, H. Sri Lasya and Dr. C.K.Gomathy	16 May 2022.	Expenditure Management System	Expense Tracker is an everyday expense control application designed to track effortlessly and efficiently each day costs. This helps us to get rid of the need of paper responsibilities that systematically maintains information. This device can be utilized by any individual to govern their income expenditure from each day to annual basis and to hold an eye on their spending, Including the person to whom the payments were made and the purpose for the payment

## 2.3 Problem Statement Definition



## 3 . IDEATION & PROPOSED SOLUTION

### 3.1 Empathy Map Canvas



### 3.2 Ideation & Brainstorming

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## Brainstorm

Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

### Roshini.P

Easy to use	Notifies when exceeds expenditure	Reminder
Money management tips given to user	Set prioritization list	Track saving and expenditure

### Roja.K

Setting up goal	Assign goal reminder	Plan and set date and time
Clear image view	Fixed monthly expenditure on regular needs	Investment plans and status

### Maha Lakshmi.P

Track money income and expenditure	Managing transaction receipts and records	Collect user requirement apart from provided feature
Details of bank account linked	Data security	Monitor your credit

### Keerthi.V

Investment	Record of bills	Money savings
Budget Plan	Money management according to budget plan	Keep track of bank balance



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## Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

🕒 20 minutes

### User Details

Username

Password

User E-mail id

Security question

User Bank account details

### User Requirements

Secure

Easy to access

Steps to use

Fast and accurate

Records recoverable

### Main Task

Account Details security

User validation and verification

accuracy

updation

Faster processing

### Steps to arrive at solution

Clear definition of problem statement

Examine the pre-existing solutions

Provide tips and information

Verify the process

Look into research papers and effective solutions

### Reports

User changes

Update and categorise

Prioritization list

Data update

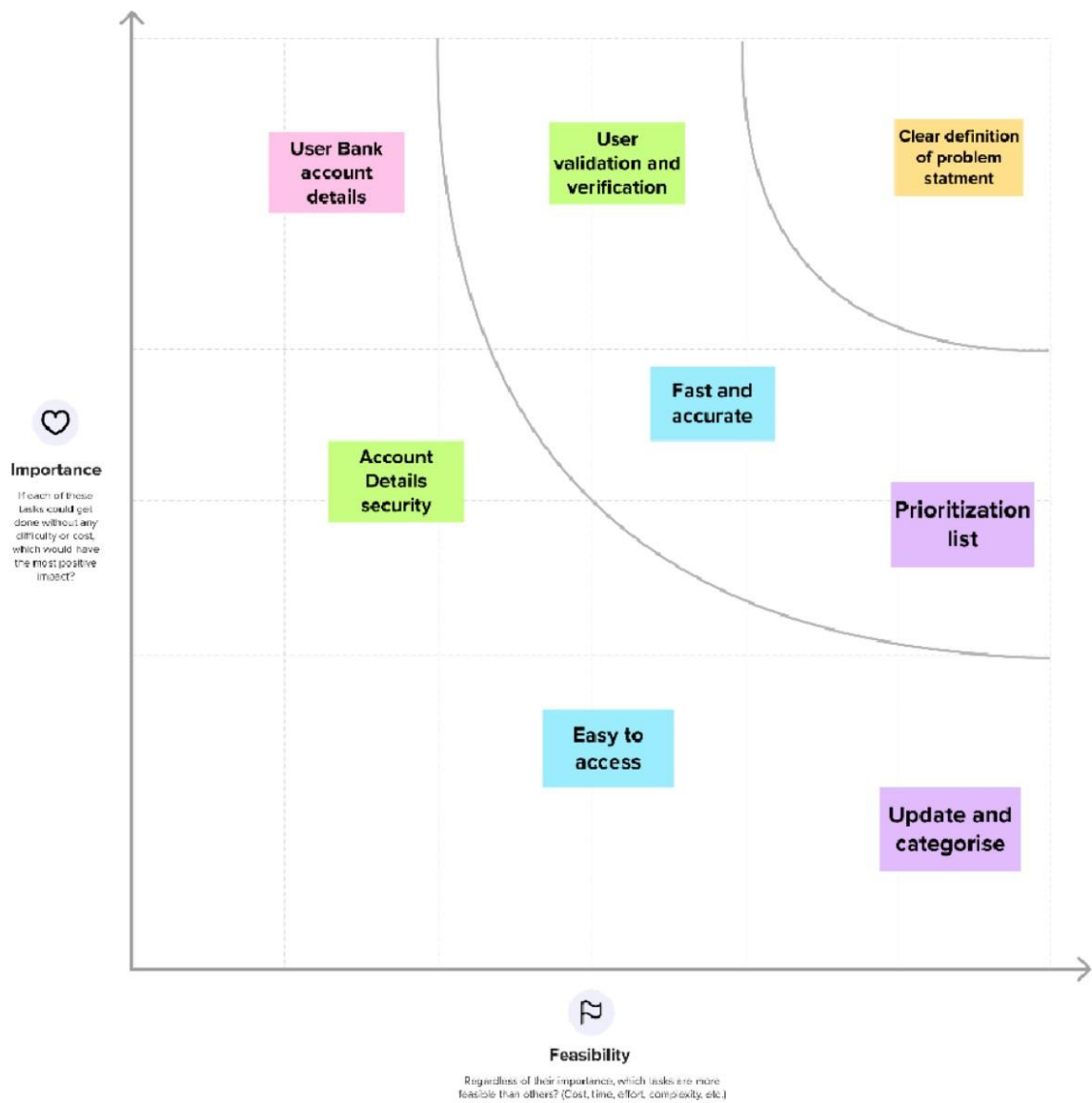
Personal Expense report

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## Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕒 20 minutes



## 3.3 Proposed Solution



S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	All the expense manger and budgeting applications that are available requires user to enter their expenditure data on daily basis and total estimations are generated at the end of the month. This process is time consuming and complex.
2.	Idea / Solution description	Personal Expense Tracker is a software application which could track your income or savings and expenditure . A user with zero money management skills could also be beneficiary from this application .
3.	Novelty / Uniqueness	Money transferred from user's account and received by user's account is tracked and recorded instead of depending on receipt papers . This application keeps track of the money the user is spending.
4.	Social Impact / Customer Satisfaction	For better construction of financial plan , the application provides an analysis on expenditure in graphical form of representation to the user. The user is also notified in case of exceeding the expense limit.
5.	Business Model (Revenue Model)	This application tracks your money inflow and outflow , organizes and sets it easy for the user to access . It also provides excellent money management tips and guidelines.
6.	Scalability of the Solution	IBM CLOUD allocates storage for users.

### 3.4 Problem Solution Fit

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT (S)</b> <span>CS</span> Customers who saves receipts and makes use of small tools for calculations of expenses.	<b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span> <small>What constraints prevent your customers from taking action or limit their choice of solutions? i.e. spending power, budget, no cash, network connection, available devices.</small> Customer needs a save management of bank details, transaction details and report generation along with accessibility security.	<b>5. AVAILABLE SOLUTIONS</b> <span>AS</span> <small>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros &amp; cons?</small> If expense exceeds the limit , an alert is sent via E-mail for customer.	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span> <small>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</small> Personal contact details of customer . Bank details of customer. These two details are required for expense tracking and alerting.	<b>9. PROBLEM ROOT CAUSE</b> <span>RC</span> Inefficient time and busy schedule of customer makes them to skip the tracking of expense .	<b>7. BEHAVIOUR</b> <span>BE</span> <small>What does your customer do to address the problem and get the job done? (i.e. directly related: find the right solar panel installer, calculate usage and benefits, etc.)</small> Based on report generated on expense analysis , customer can make plans.	
Identify strong TR & EM	<b>3. TRIGGERS</b> <span>TR</span> Customers fall for fake offers and Ad traps and spend money in unprofitable manner.	<b>10. YOUR SOLUTION</b> <span>SL</span> Personal Expense Tracker application makes it very easy for customer to track their expenses by saving time and efforts. Unlike manual calculation every thing is done with much accuracy. The application is accessible anytime and anywhere and it prevent data loss and secure to use.	<b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span> <b>8.1 ONLINE</b> Usual expense tracking and budgeting applications are use by customers in many number of channels  <b>8.2 OFFLINE</b> Customer can develop self control and experience much benefit using the personal expense tracker application	Identify strong TR & EM
	<b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span> Customers gets upset of saving the paper receipts and making manual calucations . This steps can lead to human error. Customer saves time and feels happy about easy way of tracking expenses after using the application.			

## 4.REQUIREMENT ANALYSIS

### 4.1 Functional Requirement

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration form should be filled by the user. Details like User Name , Password and Email Id must be filled.
FR-2	User Login	User can now log in using the login credentials username and password.
FR-3	Dashboard	Dashboard consists of credit, debit and check balance buttons . It is the main page. User can return back to this page and make their updates at any time.
FR-4	Income and Expenses Daily Update	User can upload their daily expense information that are spent on books, travel ,food etc.
FR-5	Alert	When the customer's expenses exceeds the limit, then alert will be automatically sent to the user's mail id
FR-6	Credit and Debit	User can make transaction in the saving account and the page has href link which is provided to come back to the dashboard.

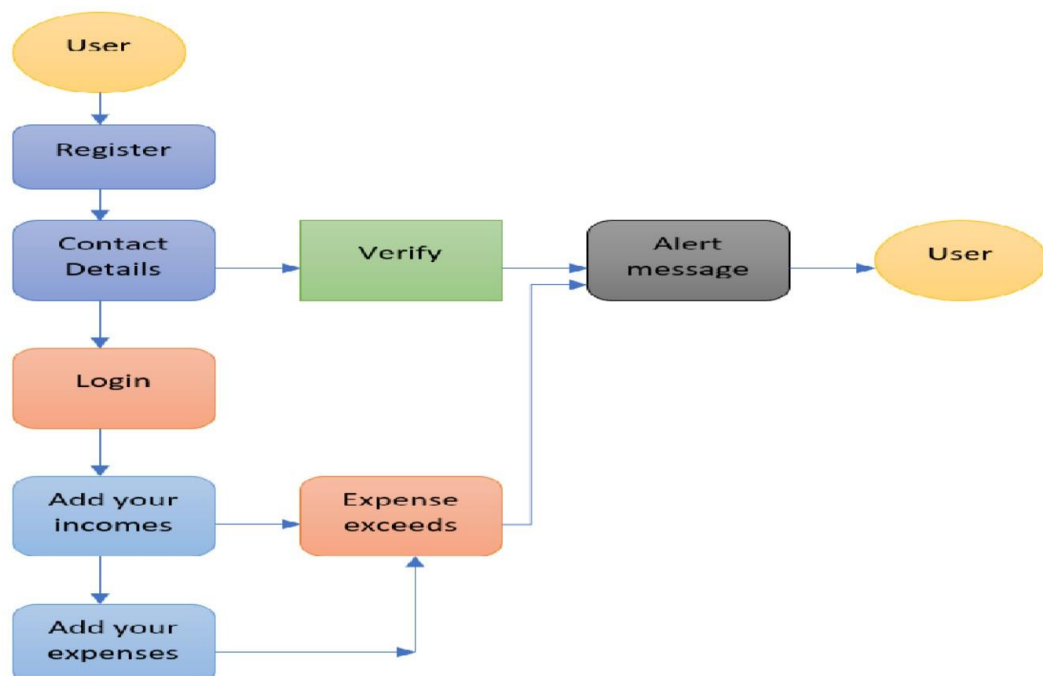
### 4.2 Non-Functional Requirements



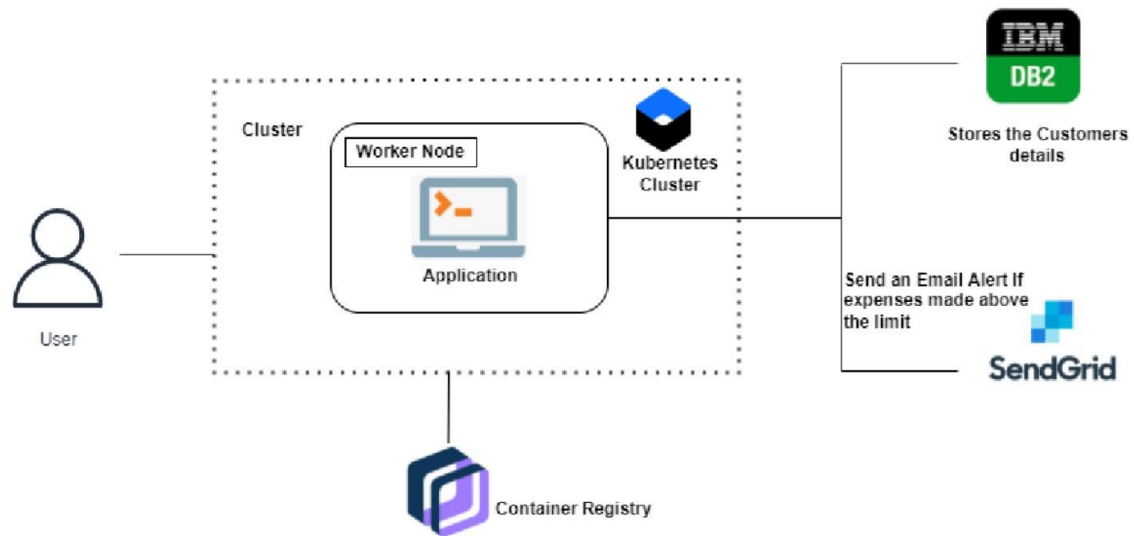
FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	It is an user friendly application. Makes the process simpler for user.
NFR-2	<b>Security</b>	System has security properties and features in application.
NFR-3	<b>Reliability</b>	The system is reliable in all features and accessible at any time.
NFR-4	<b>Performance</b>	The system process data and performs update every second. Takes a bit time when processing large data.
NFR-5	<b>Availability</b>	The system is available anytime and anywhere . workable 24/7 for all 365 days in a year.
NFR-6	<b>Scalability</b>	The application includes scalability and storage of information through IBM cloud storage.

## 5.PROJECT DESIGN

### 5.1 Data Flow Diagram



### 5.2 Solution & Technical Architecture



## 5.3 User Stories

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 Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail	I can access my account	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can access my account / dashboard	High	Sprint-1
	Dashboard	USN-6	As a user, I can add income and expenses and update mail id	I can manage expense	High	Sprint-1
	Contact details	USN-5	As a user, I can enter my contact details like email id	I can access account	High	Sprint-1
Customer (Web user)	Verify	USN-6	As a user, I can be verified through mail id	I can access account and receive messages	High	Sprint-1
		USN-7	As a user, I can set a limit on my expenses	I can receive alert message when my expense exceeds the limit	High	Sprint-1
	Add your income/Add your expenses	USN-10	As a user, I can add my incomes and expenses	I can add income and expenses	High	Sprint-1
	Alert	USN-11	As a customer care executive, I can solve any issues faced by user	I can solve login and updating related issues	Medium	Sprint-1
		USN-12	As a admin, I can make any update in application	I can update the changes	Medium	Sprint-1

## 6. PROJECT PLANNING & SCHEDULING

### 6.1 Sprint Planning & Estimation

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, password, and confirming my password.	5	High	Roja.K
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	5	High	Keerthi.V
Sprint-1	Login	USN-3	As a user , I can log in using email and password	5	High	Maha Lakshmi.P
Sprint-1	Dashboard	USN-4	As a user , I am directed to dashboard after logging in	5	High	Roshini.P
Sprint-2	Charts	USN-5	Creating graphs and statistics of customer data	10	Medium	Keerthi.V, Roja.K
Sprint-2	Connecting to IBM DB2	USN-6	Connecting to the database	10	High	Roshini.P, Maha Lakshmi.P
Sprint-3	Watson Assistant	USN-7	Chat Bot for personal expense tracker	10	High	Keerthi.V
Sprint-3	SendGrid	USN-8	Creating SendGrid account for sending mail about their expense to customers.	5	High	Maha Lakshmi.P
Sprint-3		USN-9	Integrate Front end and Back End	5	High	Roshini.P , Roja.K

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-4	Docker	USN-10	Creating image of website using docker	5	High	Roshini.P
Sprint-4	Cloud Registry	USN-11	Uploading docker image to IBM Cloud registry	5	High	Maha Lakshmi.P
Sprint-4	Kubernetes	USN-12	Container creation using the docker image and hosting the site	10	High	Roja.K, Keerthi.V

## 6.2 Sprint Delivery Schedule

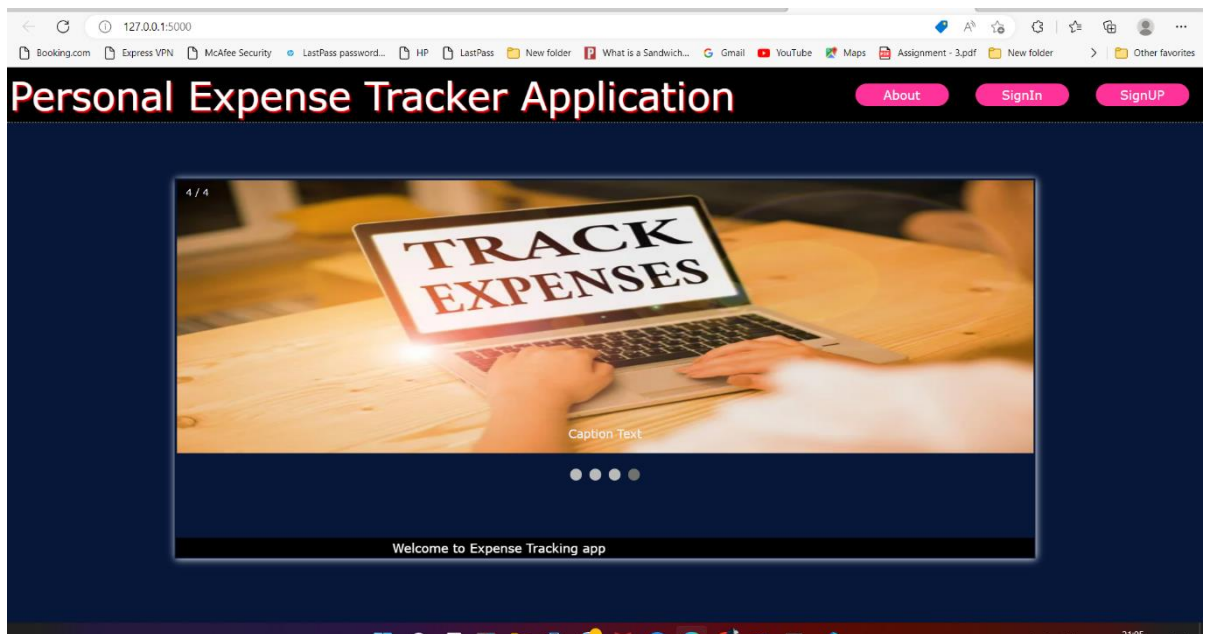
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Oct 2022
Sprint-3	20	6 Days	07 Nov 2022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

## 7. CODING & SOLUTIONING

### 7.1 Feature 1

#### DASHBOARD

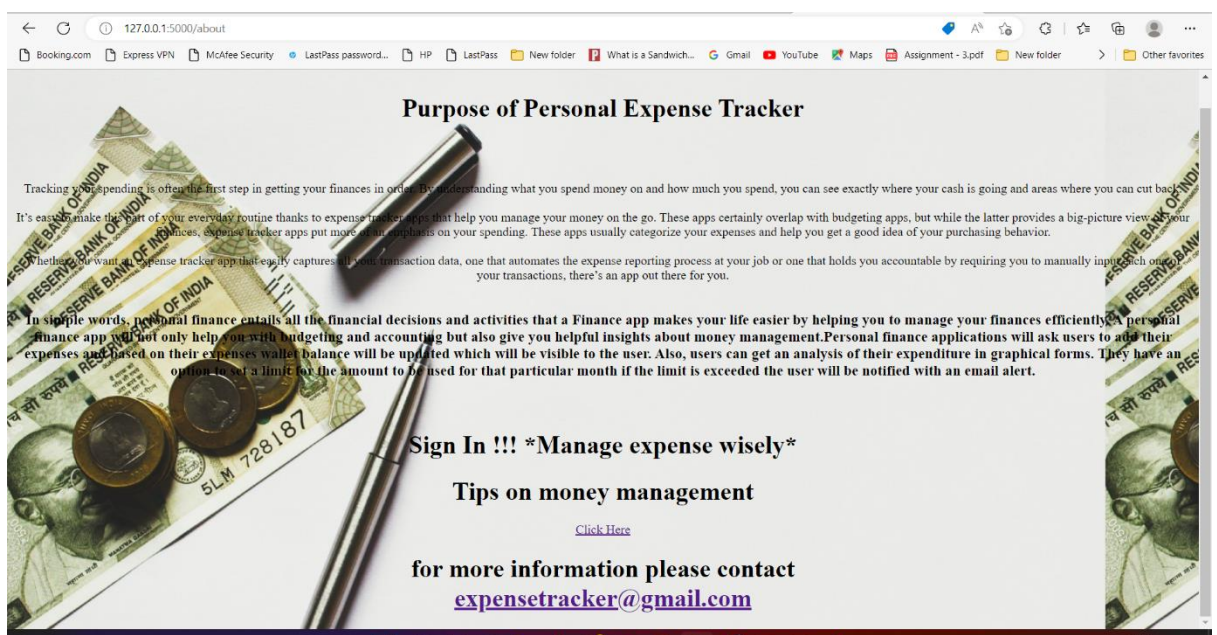
The dashboard is the home page of our application. It consists of about page, Sign/Login page and Signup/Register page



### 7.2 Feature 2

#### About page

The About page provides insights and tips about money management. It also describes the purpose of using this personal expense tracker application.



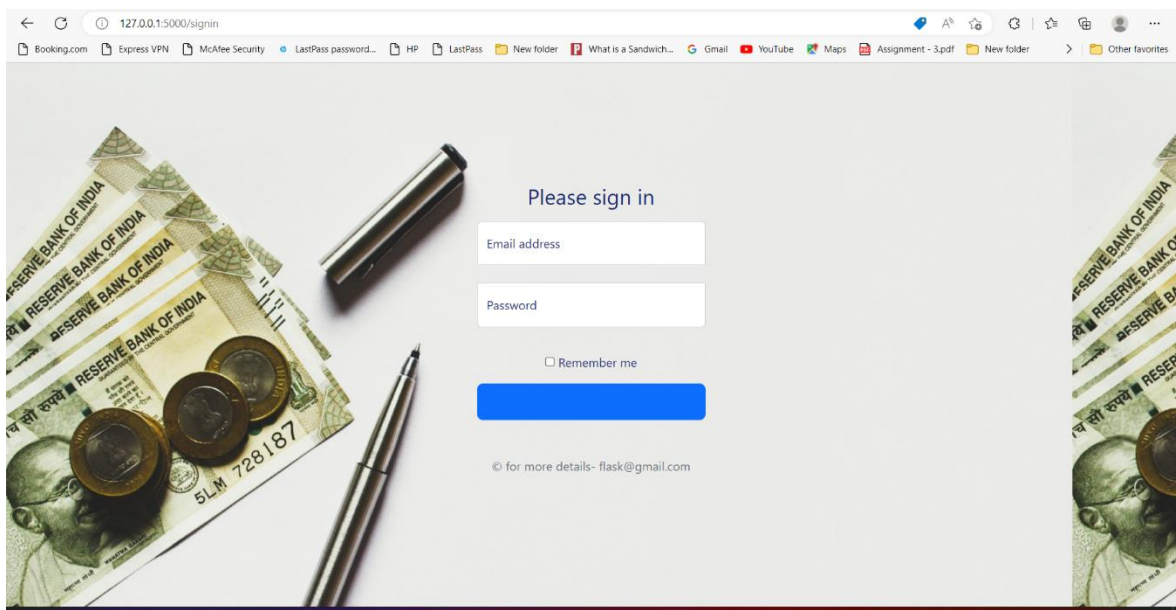
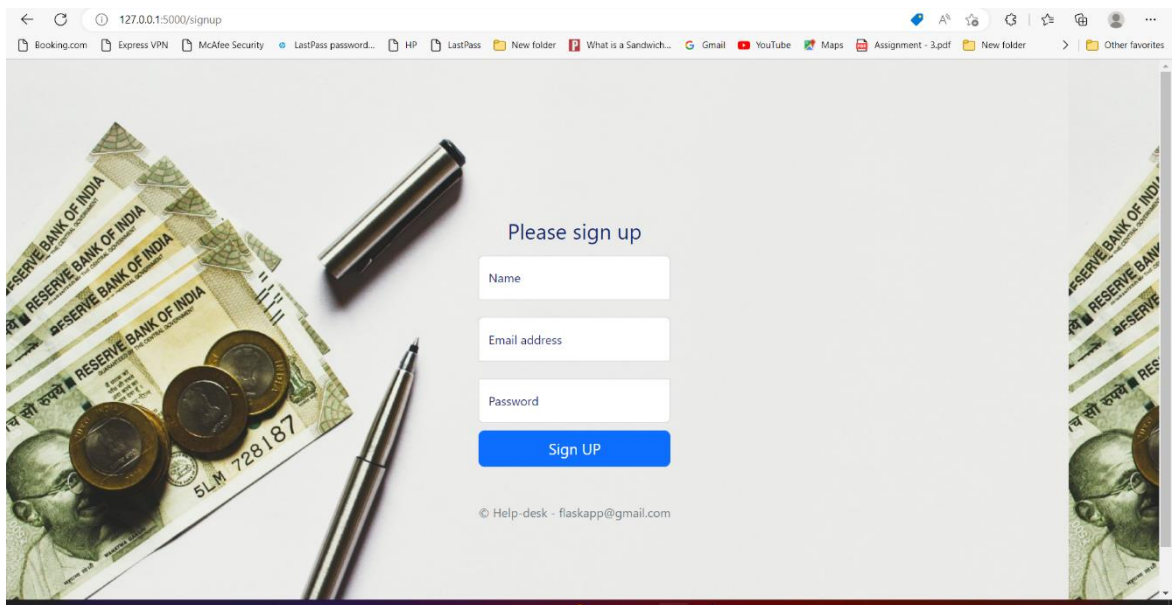
## 8. TESTING

### 8.1 Test Cases

- Register and login using username , email id and password
- Add your Expenses
- Limit exceeds alert message

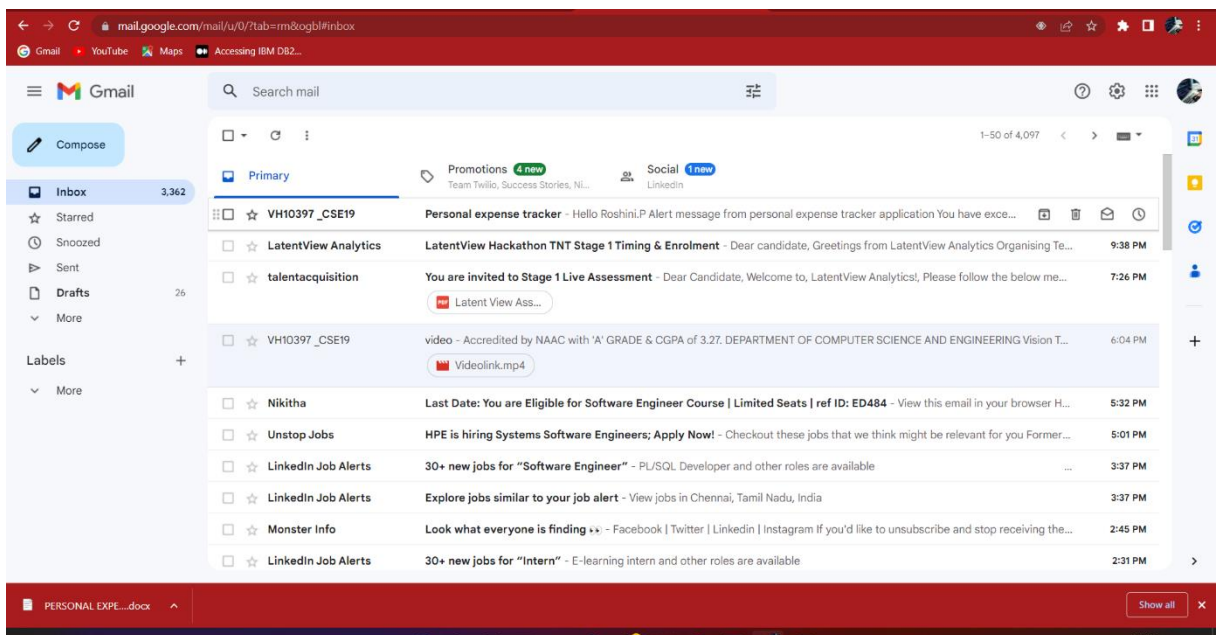
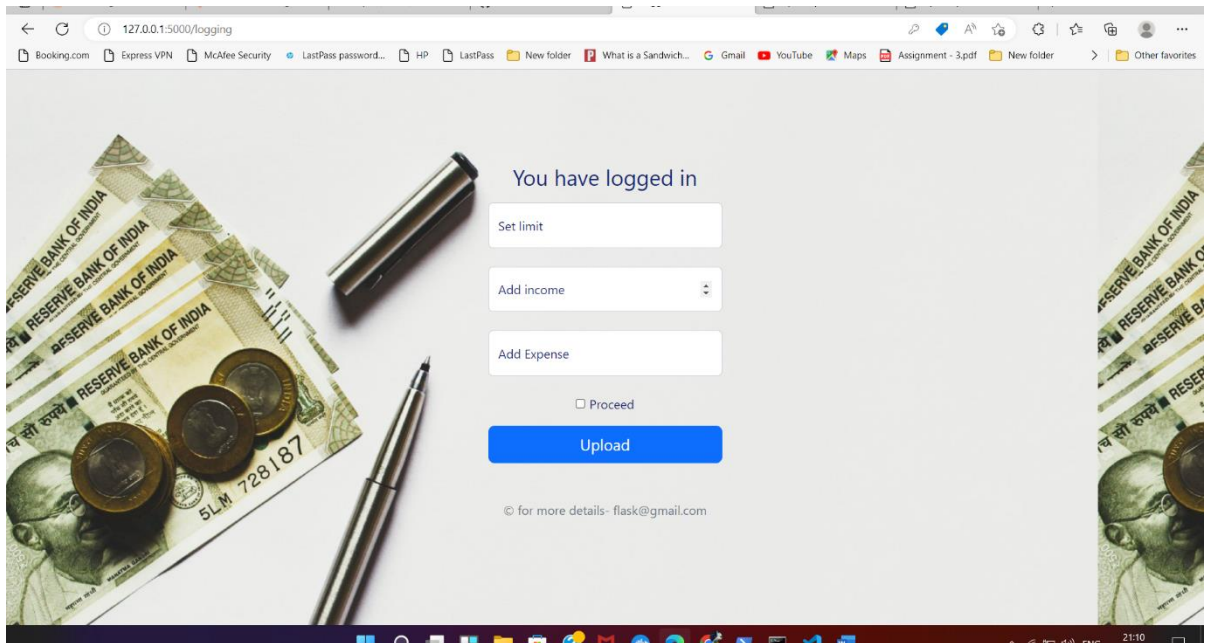
### 8.2 User Acceptance Testing

- Register and login using name, email id and password





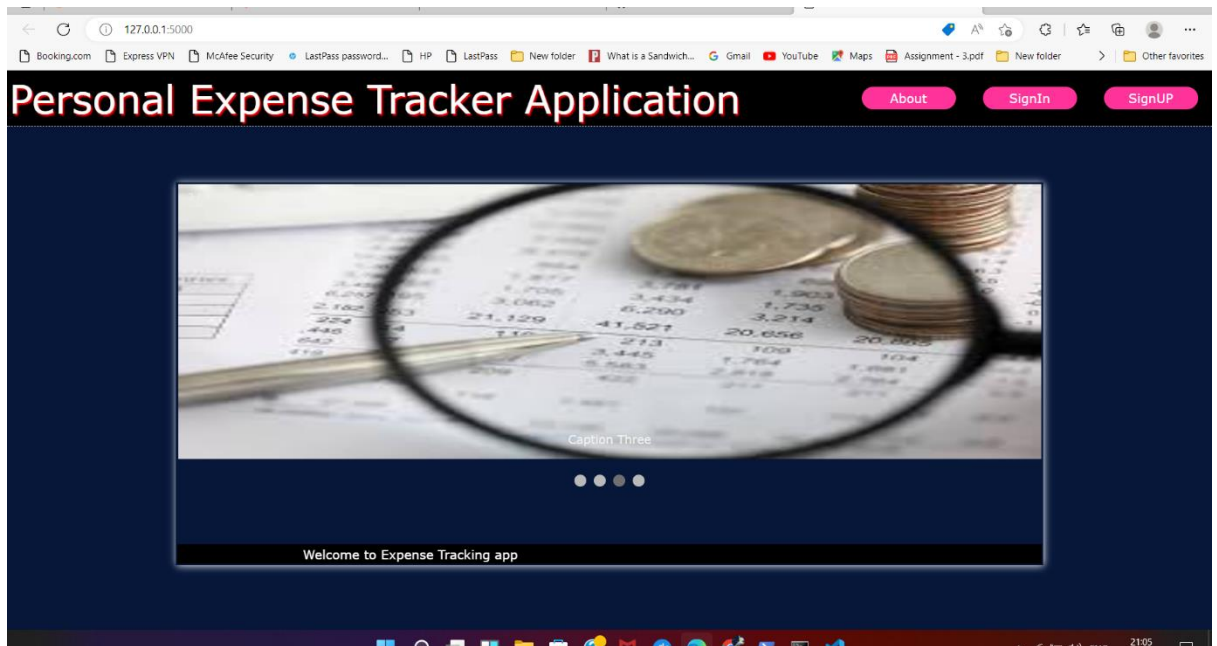
## ➤ Add your Limit, Income, Expenses



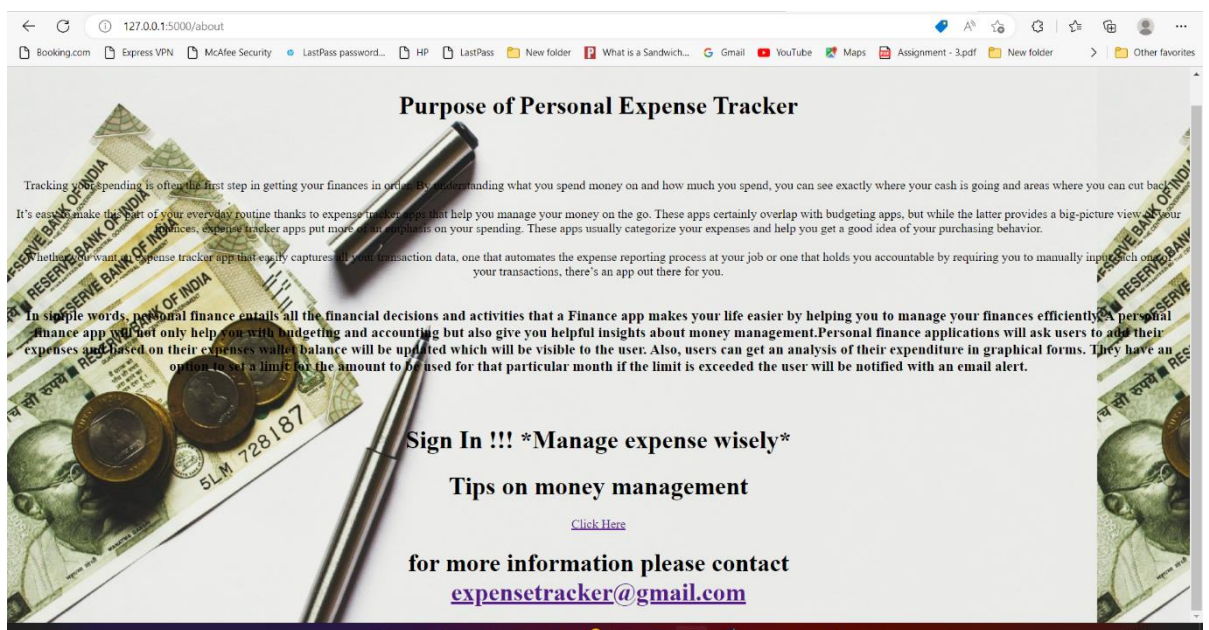
## 9. RESULTS

Web Page

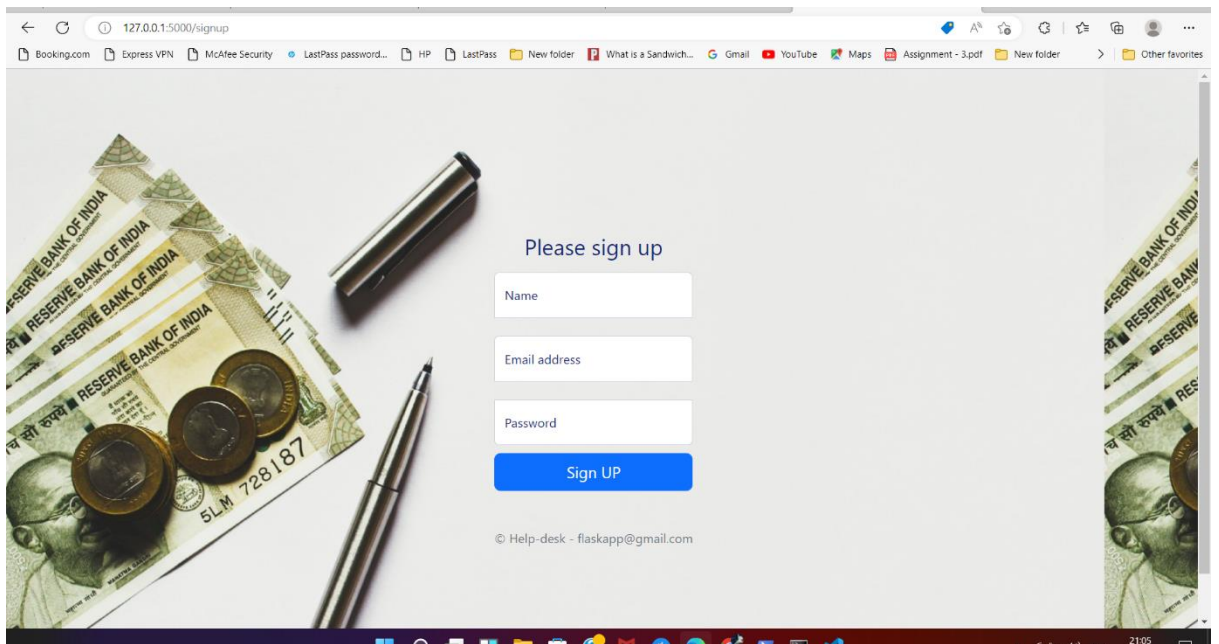
### ➤ Dashboard



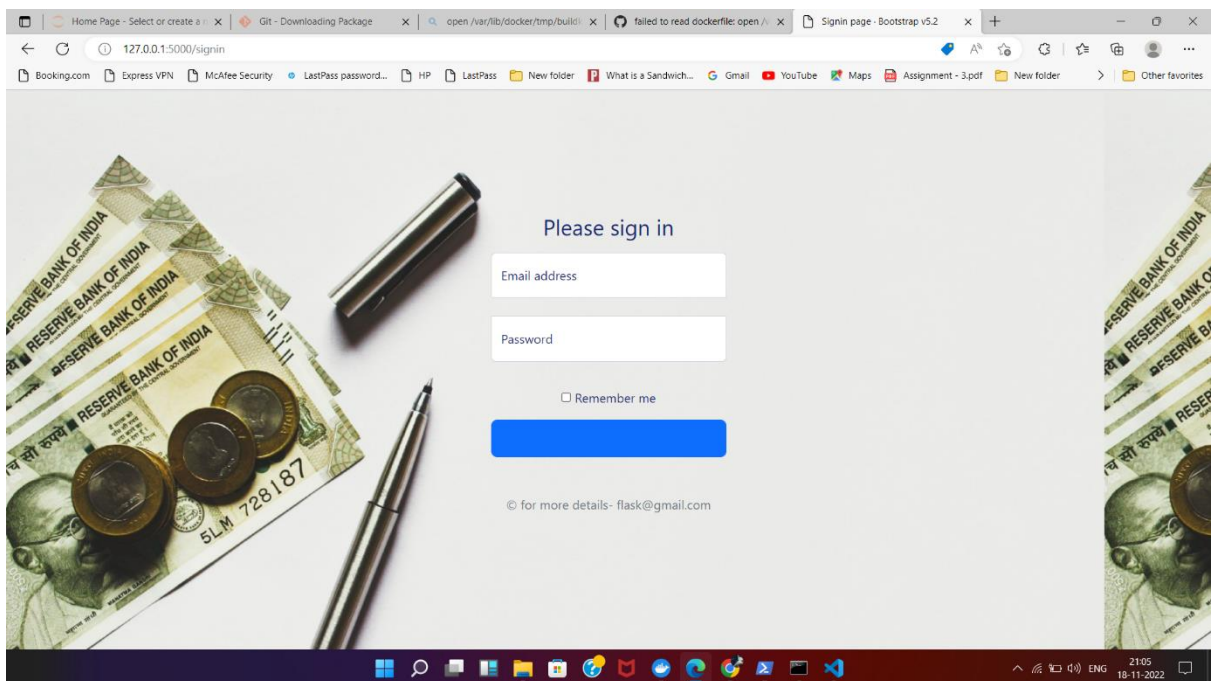
## ➤ About Page



## ➤ Register page

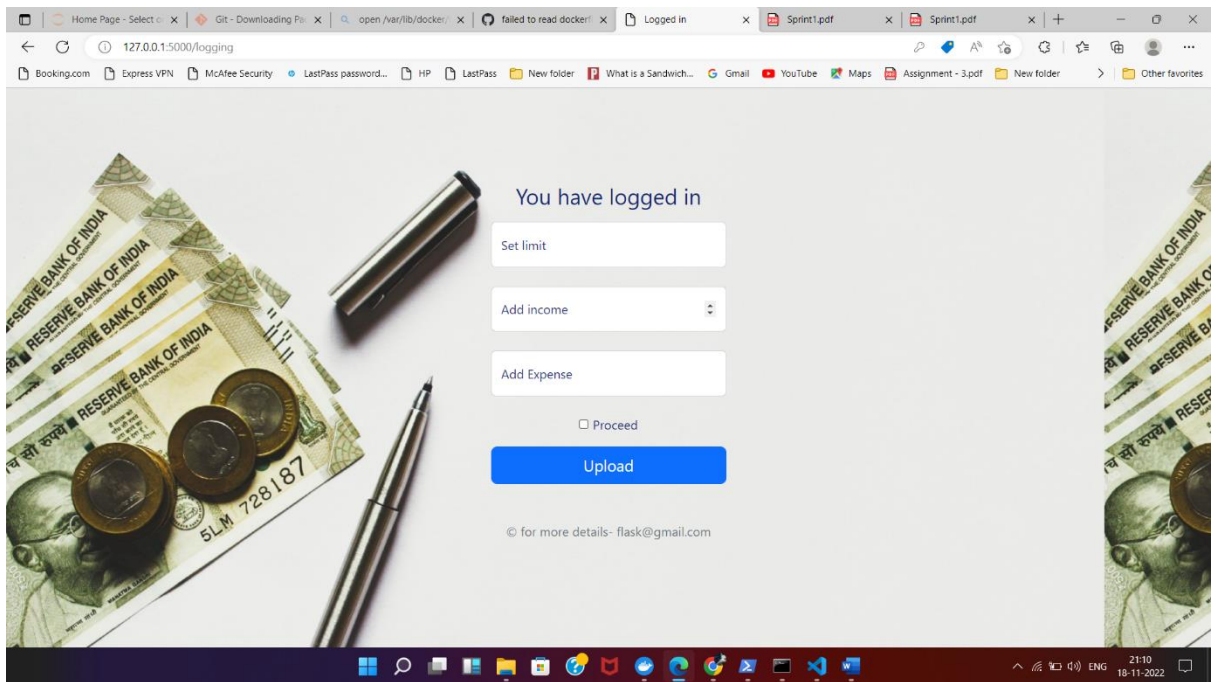


## ➤ Login Page

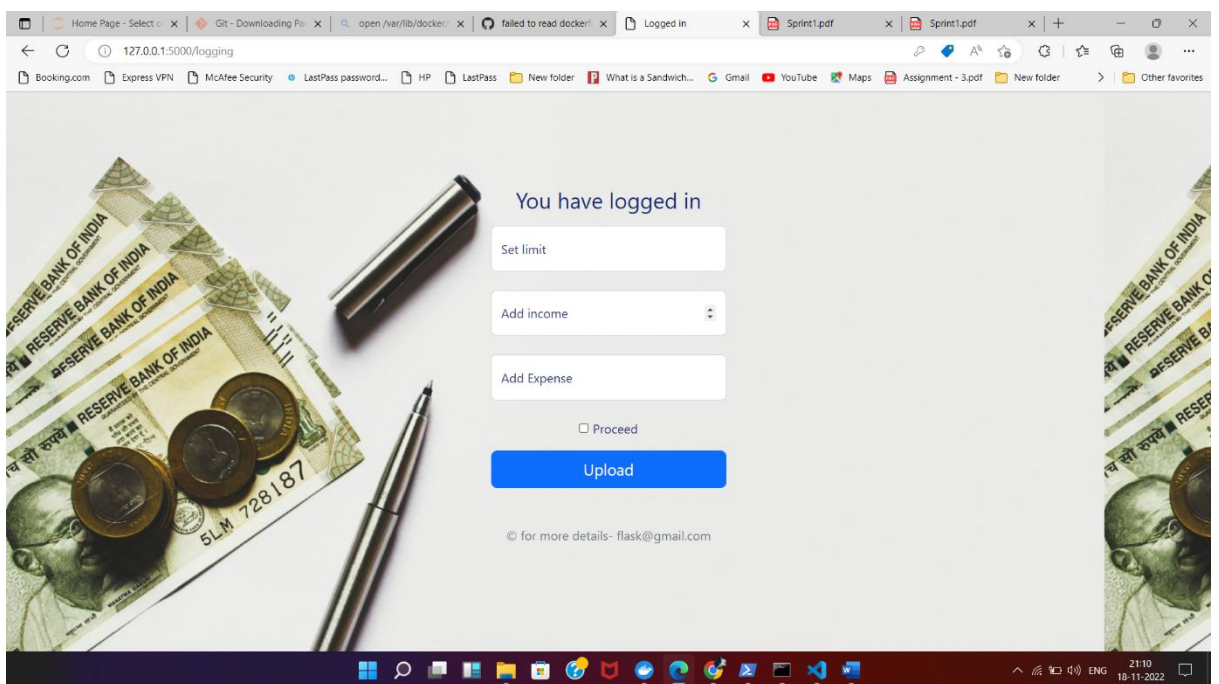


## ➤ Set your limit

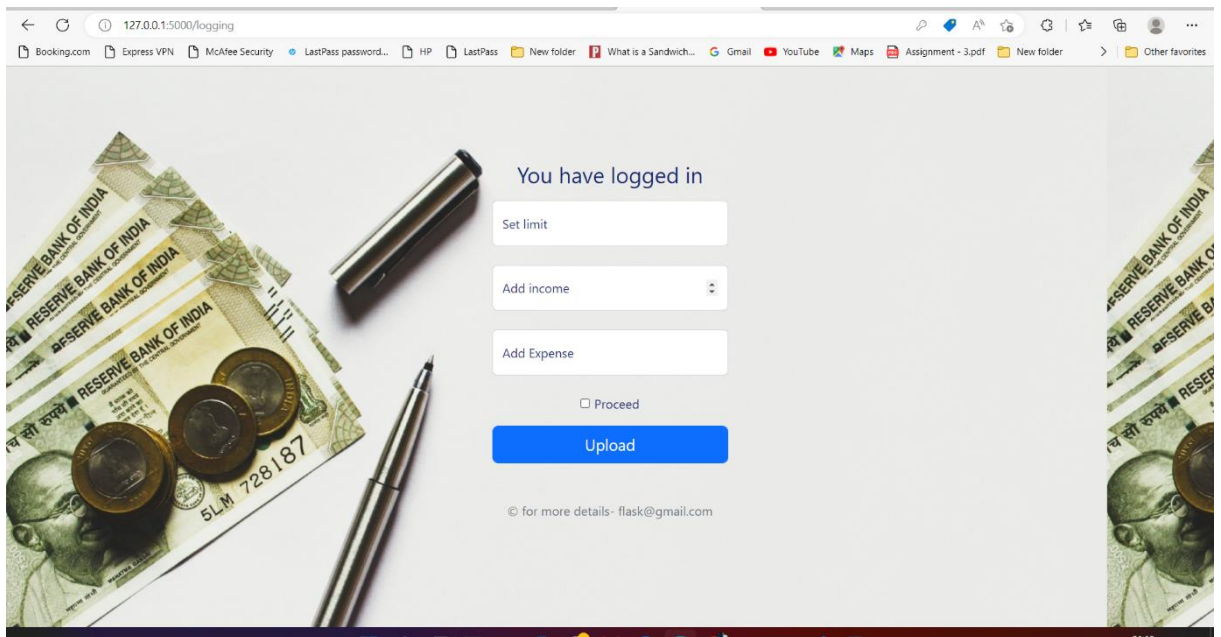




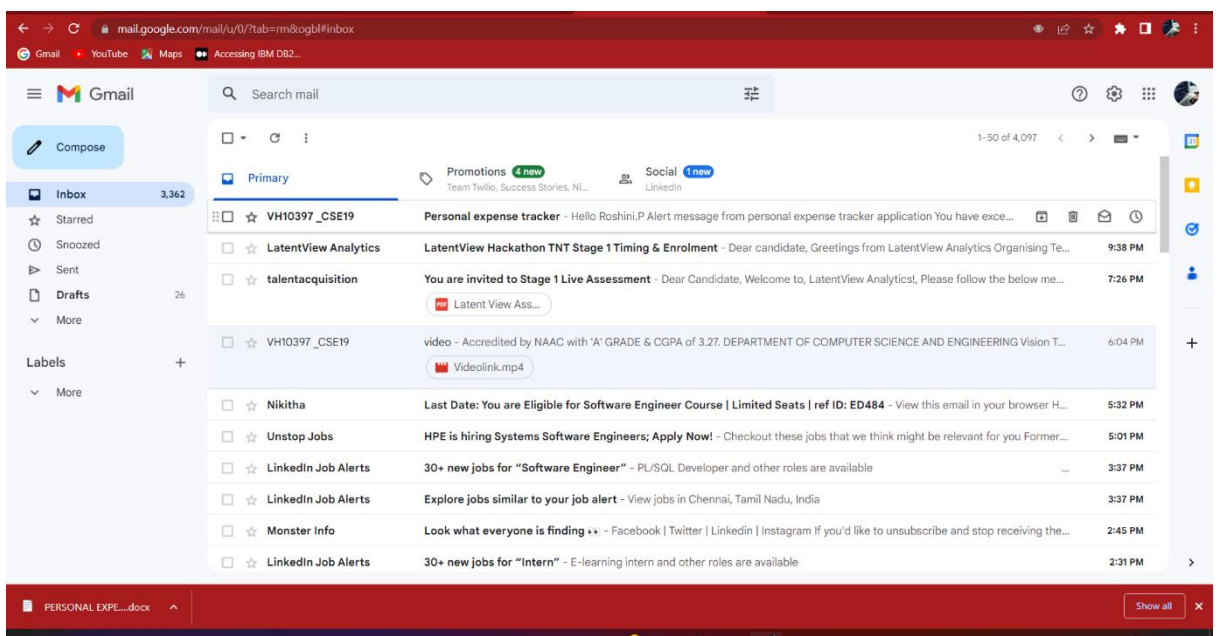
## ➤ Add your income



## ➤ Add Expense



## ➤ Alert Message



## 10. ADVANTAGES & DISADVANTAGES

### Advantages

- Userfriendly
- Efficient money management
- Enhancement in self control
- Very Efficient



### Disadvantage

- Not used for Complex data analytics
- Only used for simple daily expenses

## 11. CONCLUSION

Thus, the proposed personal expense tracker helps customers to track their expenses there by saving time and energy and reduces complexity in maintaining a budget. Just a few second, you can save your money in better way .

## 12. FUTURE SCOPE

. The results of analysis can be improved by optimizing the algorithm selection procedure and by using large inventory datasets. Creating visualization charts takes numerous steps and procedures. As a future work to do done the results to analyse the attribute can be done by reducing the number of procedure steps.

## 13. APPENDIX

GitHub Link: Source Code

<https://github.com/IBM-EPBL/IBM-Project-17626-1659674248/tree/main/Final%20Deliverables>

GitHub :

<https://github.com/IBM-EPBL/IBM-Project-17626-1659674248>

Project Demo Link

<https://www.youtube.com/watch?v=CxGoZqVud2k>