



RMK ENGINEERING COLLEGE

(An Autonomous Institution)

**R.S.M. Nagar, Kavaraipettai-601 206, Gummidipoondi Taluk,
Thiruvallur District.**

PROJECT

**PERSONAL EXPENSE TRACKER
APPLICATION**

DONE BY

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Project Report Format

1. INTRODUCTION

1.1 Project Overview

Personal Expense Tracker is a web application that allows you to track the daily expenses of the user and help them to keep track of their expenses on a daily ,monthly ,weekly and yearly basis. It will also create digital records for the user's income and various expenses spent by the user. It also gets the input from the user as how much income earned and the date of the income earned and further creates a transaction entry and sums up all the total income. Further we can give voice commands and it is responsive . It will be very helpful for the users to manage their needs and they can spend in a better way by keeping track of the application daily basis. The data that has been collected for the analysis of the expenses for tracking will be represented in a graphical way which gives a more accurate way of tracking compared to the manual way the project had been implemented. The data will include the income along with the other expenditures that are required for tracking will be taken together to give a better way to manage expenses within the budget and help to save money.

1.2 Purpose

The main purpose of personal expense tracker application is used to keep track of expenses based on the users income and how much they spent and also they can keep track of their expenses on a daily,monthly,weekly and yearly basis. All the financial decisions and activities that you make are unable to keep a track of it. This application makes your life easier by helping you to manage your finances efficiently. A personal finance application will not only help you with budgeting and accounting but also give you helpful insights about financial management.

2. LITERATURE SURVEY

Paper 1 – Expense Tracker

Publisher: International Journal for Research in Applied Science & Engineering Technology (IJRASET)

The Expense Tracker is a Web application that facilitates the users to keep track of their expenses.

This application records all the expenses of the users and the user can view them anytime. The

application provides monthly and year-wise expenditures which will let the user know where he is spending the most. It also provides graphical visualizations which helps the user to perform detailed analysis on the expenditure.

Pros

- Using paper is not easy to manage. This application eliminates the usage of paper and excel sheets to keep track of the user's expenses.
- It saves time and requires less human effort.
- The user just needs to enter the income and the expenses, everything will be taken care of by the application.

Cons

- There is not limit on the amount that can be used by the user
- The application does not send any notification regarding the usage of the amount by the user

Paper 2 - eExpense: A Smart Approach to Track Everyday Expense

Publisher: IEEE

eExpense is a mobile application that runs on Android smartphones. Using this application, users can save their expense by scanning the bills and the receipt copies. Optical Character Recognition (OCR) is used to extract the information from the bills or receipts. It is also capable of tracking savings from user's saving accounts by reading the SMS automatically from the message application of the android device.

The application consists of four sections such as debit, credit, balance and history. Debit section records the expenses of the user. The input can be given either manually by the user or the system will take it automatically by scanning. When users open the credit interface, the system reads all the messages from the user's messaging inbox. The input can be given manually or it can be taken by the system automatically.

This application allows users to set the budget for a month or year. When the limit exceeds, it sends a notification to the user. Balance section shows the monthly and yearly balance. History section contains a calendar. By selecting a particular date, it shows the expenses on that day.

Pros

- It is an automated system to store the expense of the user and the expenses are stored in the database category wise.
- This application extracts the textual information from the receipts and saves the amount and description for further processing..
- It eliminates the usage of paper and excel sheets to keep track of the user's expenses. It saves time and requires less human effort.
- By calculating income and expenses it produces the user's balance on a monthly and yearly basis
- It also monitors user's income by tracking the received SMS's from the user's saving accounts.

Cons

- This application is useful only for Android users.
- It does not provide graphical visualizations which could be helpful for detailed analysis of the expenditure.

Paper 3 – Expense Tracker

Publisher: International Research Journal of Modernization in Engineering Technology and Science (IRJMETS) The Expense Tracker is a mobile application that allows the users to download in their mobile phones and can be used to track and update their daily costs. So that they can keep track of their earnings. The user can know easily on how much the amount they have spent on the various things for household, clothing and house rentals and we can easily depict the cost to the user using pie charts. Based on this we can keep track of daily expenses that we spent in a single day. Moreover, this is an automated solution for tracking the expenses.

Pros

- The application does not require a large number of users and only requires them to enter the expense amount, date, category, merchant, and other optional parameters
- It helps the android users in any situation by keeping track of their expenses every day.
- App also sends customized tips in the form of push notifications which helps users to manage expenses.

Cons

- This application is made only for android users.
- There is no limit for the amount that is been used by the user

Paper 4 - **Daily Expense Tracker**

Publisher: International Journal of Research in Engineering and Science (IJRES)

Daily Expense Tracker is a web application that allows you to track the daily expenses of the user and help them to keep track of their expenses on a daily ,monthly ,weekly and yearly basis. It will also create a digital record for the user's income and various expenses spent by the user are calculated. It also gets the input from the user as how much income earned and the date of the income earned and further creates a transaction entry and sums up all the total income. Further we can give voice commands and it is responsive .It will be very helpful for the users to manage their needs and they can spend in a better way by keeping track of the application daily basis.

Daily Expense Tracker application can be accessed from any browsers like Google chrome, Mozilla Firefox and it allows for a portable work environment. We can also digitally maintain the records with visual representation and also graphically view them using bar graphs and pie charts on how much amount is being spent and can also eliminate the physical entries by using voice commands.

Daily expense Tracker is an AI powered engine providing voice recognition which is very helpful for the users to do the work in the easiest way. The application is divided into three major components that is income, expense and create transaction section. Creating a transaction component allows users to choose from two categories whether it is an Expense or an Income and also choose from a list of types of income or expense enter the amount and date and create an entry. After the creation of transaction pie charts are created in the income or expense section based on type of transaction. All of these features can also be updated or deleted using users voice commands.

Pros

- It is an AI powered engine so that it is easy to store all the expenses of the user in a database.
- It eliminates the user by typing manually instead it is very helpful using voice recognition.
- It saves time and is user friendly and also requires less human effort.

- It is a platform independent web application. Users can use this application either in their mobile phones or desktops. Both Income and Expenses pie chart will be created when we add any item and distribute according to the user's needs.
- If any user doesn't know how to add or delete then we can simply give voice commands.

Cons

- There is no option to scan the barcode on the price tag which may decrease the efforts of entering the data.
- There is no notification system when the user expenses exceed the income to warn the situation.

Problem Statement:

All the financial decisions and activities that you make are unable to keep a track of it. This application makes your life easier by helping you to manage your finances efficiently. A personal finance application will not only help you with budgeting and accounting but also give you helpful insights about financial management.

In simple words, personal finance entails all the financial decisions and activities that a Finance app makes your life easier by helping you to manage your finances efficiently. A personal finance app will not only help you with budgeting and accounting but also give you helpful insights about money management.

Personal finance applications will ask users to add their expenses and based on their expenses wallet balance will be updated which will be visible to the user. Also, users can get an analysis of their expenditure in graphical forms. They have an option to set a limit for the amount to be used for that particular month if the limit is exceeded the user will be notified with an email alert.

1. Who does the problem affect?

The user who does not know how to manage their daily expenses manually. Does not have enough knowledge in budget handling. To the person who does not have a limit on spending money. The group that is facing the problem are the users currently facing issues in saving money. Most of the people would not have made up their mind about how to save money.

2. What are the boundaries of the problem?

Person who is above 16, starts spending money for their needs, because below 16 people do not need much money to be spent. Illiterates or people who are not educated much find it difficult to track their expenses. The boundaries will be based on the individual's ratio and also the available applications that are available to choose from and continue for the next few years. The person should set some boundary values based on the income for each of the expenditures. This way the boundaries extend to effectively manage the expenses.

3. What is the issue?

The people who are struggling to find a better way to manage their expenses is the major issue and the problem that requires a better solution that should include the issues that are left out by the most available solutions in day to day life. The project should find the user's ability to admit to the desired money management for their savings that they have earned.

The impact that the issue makes on current days is that there is a huge confusion for getting the good applications applications that are available. The failure to get a suitable expense tracker makes the users lose hope and unwillingly buy products in EMI rather than the one they had wished to carry. This impact makes them lose their mental stability and puts them under a lot of pressure of being unable to find a better way to save money. This has been in a state of not being able to fully recover from the problem that has been there for more than a decade. There are solutions to overcome this issue but, every solution that has been developed towards this has a flaw in any one of the things that are present in their ideas.

This issue needs a complete fix that is by analyzing the expenses to that of the income expenditure that is been spent by the users. This way the issue gets slowly fixed and the users will not have any issues in setting their limits for spending the money daily or monthly or sometimes losing them based on the unwanted expenditure.

The issue will continue to persist even if the project has been implemented. But still the users will be even more cautious in selecting the right Personal expense

application. The users if the issue is not solved then they will be suffering to find the expense tracker as it was before. So the issue needs to be maintained at the earliest so that the users can concentrate on their day to day expenses and savings instead of searching for other ways.

4. When does the issue occur?

An issue occurs in expense tracking when there is lack of control over the day to day expenses. The absence of clearly defined spending limits is one of the biggest frustrations when overseeing a person's expense management process.

There are the expenses you cannot avoid. If you use the 50/30/20 budget, these should account for 50% of your spending. Necessities often include the following:

- Healthcare: Health insurance; out-of-pocket medical costs.
- Life insurance
- Child care
- Student loan payment

5. Where is the issue occurring?

The issue occurs when the user does not keep track of their expenses and day to day expenditures. For instance, if the user does not have enough money in his/her account or wallet, but tend to buy products beyond the budget list (buying unnecessary products/materials/things unknowingly), he might end up in trouble and disappointment.

So in this situation, this personal expense tracker application will help the users by s sending notifications on a timely basis.

Some of the necessities that cannot avoid:

- Housing: Mortgage or rent
- Transportation: Car payment, gas, maintenance and auto insurance.
- Utilities: Electricity, water, cell phone bills.

6. Why is it important that we fix the problem?

When you track your spending, you know where your money goes and you can ensure that your money is used wisely. Tracking your expenditures also allows you to understand why you're in debt and how you got there. This will then help you design a befitting strategy of getting out of debt.

The main reason you should track your expenses is to identify and eliminate wasteful spending habits in your financial life. Moreover, consistently tracking your expenses will

help you maintain control of your finances, and promote better financial habits like saving and investing.

When you start tracking expenses, you can separate your spending into three categories: needs, wants and saving. Tracking your spending on a regular basis can give you an accurate picture of where your money is going – and where you should like it to go instead.

2.1 References

1. <https://www.ijraset.com/files/serve.php?FID=33797>
2. <https://ieeexplore.ieee.org/document/8628070>
3. https://www.ijrmets.com/uploadedfiles/paper/issue_4_april_2022/21604/final/fin_ijrmets1651132467.pdf
4. <https://www.ijres.org/papers/Volume-9/Issue-12/Ser-4/L09127073.pdf>

2.2 Problem Statement Definition

The Expense Tracker is a mobile application that allows the users to download in their mobile phones and can be used to track and update their daily costs. So that they can keep track of their earnings. The user can know easily how much the amount they have spent on the various things for household, clothing and house rentals and we can easily depict the cost to the user using pie charts. Based on this we can keep track of daily expenses that we spent in a single day. Moreover, this is an automated solution for tracking the expenses

All the financial decisions and activities that you make are unable to keep a track of it. This application makes your life easier by helping you to manage your finances efficiently. A personal finance application will not only help you with budgeting and accounting but also give you helpful insights about financial management.

In simple words, personal finance entails all the financial decisions and activities that a Finance app makes your life easier by helping you to manage your finances efficiently. A personal finance app will not only help you with budgeting and accounting but also give you helpful insights about money management.

Personal finance applications will ask users to add their expenses and based on their expenses wallet balance will be updated which will be visible to the user. Also, users can get an analysis of their expenditure in graphical forms. They have an option to set a limit for the amount to be used for that particular month if the limit is exceeded the user will be notified with an email alert.

3 IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

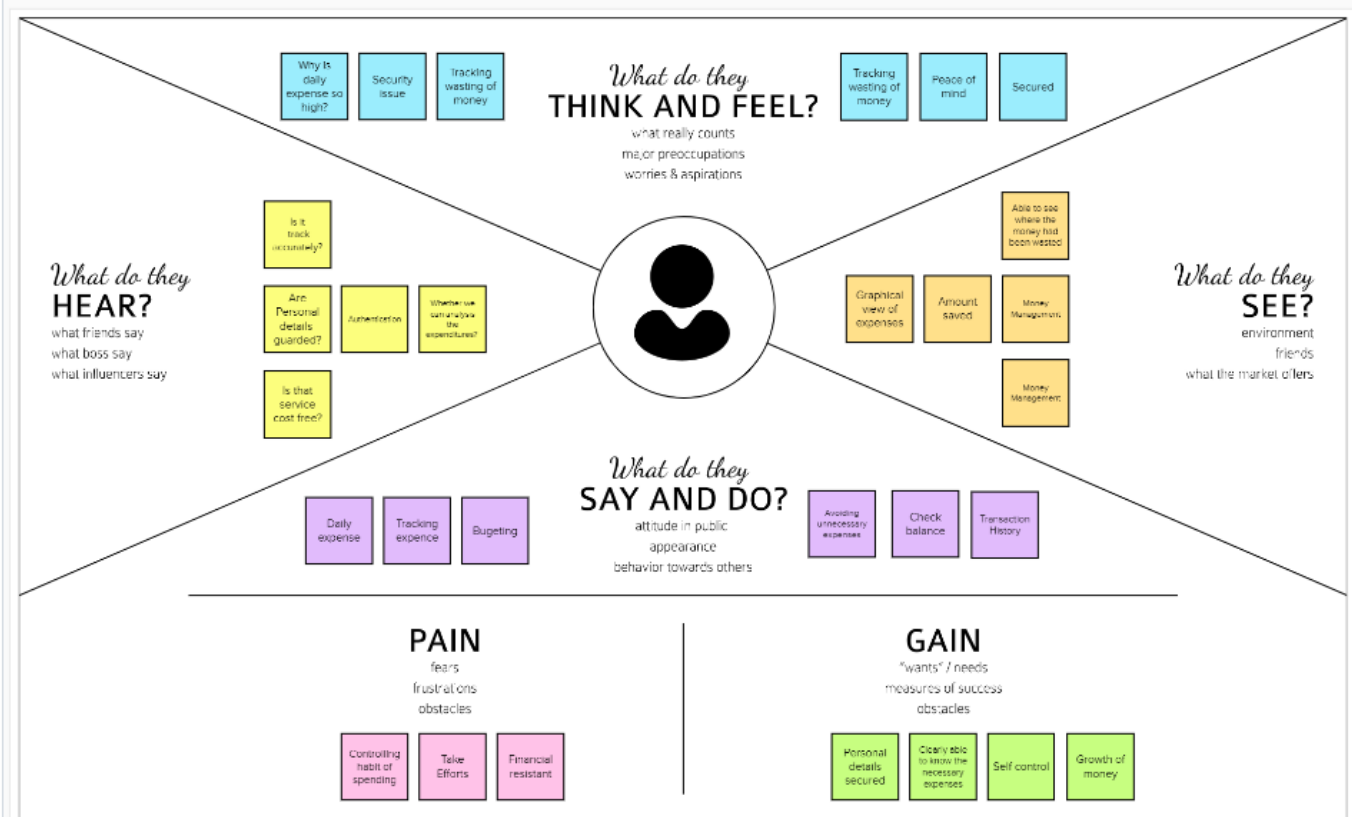
An empathy map is used to gain deeper insights on the customer's interaction with the system. It gives an idea on what the user feels and experiences while using the system, what fears the user has respective to the system, etc. It also specifies how supportive the system environment is and what the users are likely to hear from the people around them regarding the usage of the system.

Empathy Map Canvas

Gain insight and understanding on solving customer problems.

1

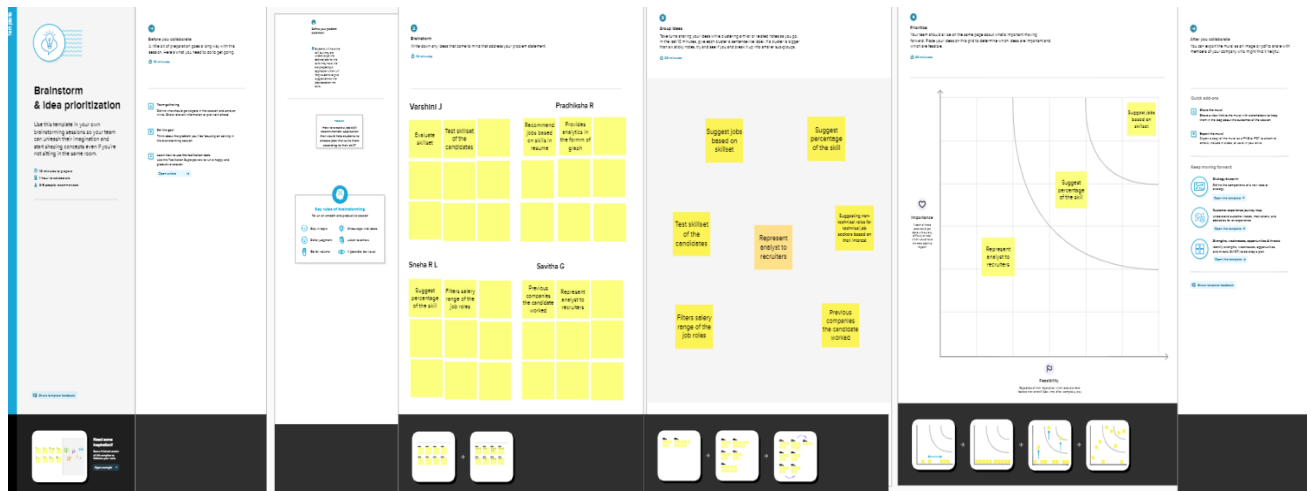
Build empathy and keep your focus on the user by putting yourself in their shoes.



Share your feedback

3.2 Ideation & Brainstorming

Ideation and Brainstorming are performed to generate ideas and solutions. Brainstorming is a group activity unlike ideation.



Ideation essentially refers to the whole creative process of coming up with and communicating new ideas. Ideation is innovative thinking, typically aimed at solving a problem or providing a more efficient means of doing or accomplishing something. It encompasses thinking up new ideas, developing existing ideas, and figuring out means or methods for putting new ideas into practice.

3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	All the financial decisions and activities that you make are unable to keep a track of it. This application makes your life easier by helping you to manage your finances efficiently. A personal finance application will not only help you with budgeting and accounting but also give you helpful insights about financial management.
2.	Idea / Solution description	The project will provide a way to track the expenses spent by the individuals and will help them to manage their daily expenses and keep track of their savings. To develop a personal finance application which allows users to add their expenses and based on their expense wallet balance will be updated and displayed. Also, users can get an analysis of their expenditure in graphical forms. They have an option to set a limit for the amount to be used for that particular month and if the limit is exceeded the users will be notified with an email alert.
3.	Novelty / Uniqueness	The data that has been collected for the analysis of the expenses for tracking will be represented in a graphical way which gives a more accurate way of tracking compared to the manual way the project had been implemented. The data will include the income along with the other expenditures that are required for tracking will be taken together to give a better way to manage expenses within the budget and help to save money.

4.	Social Impact / Customer Satisfaction	The impact will be that the customers will be able to track the expenses. The cost of living and the standard of an individual's image increases when they save money for the future wellness. The users will be satisfied with getting a better living and will be free of any mental st
5.	Business Model (Revenue Model)	See below
6.	Scalability of the Solution	The project will be having the Python Flask ,IBM DB2 for the development of the backend, which makes it easy to run on any web browsers and it will affect the collection of data from the user side and the sending of prediction analysis from the IBM Watson. The server IBM Cloud, DOCKER-developing, shipping, and running applications, Kubernetes will be used for making it work without any slow loading or delay of the prediction of the website

Business Model :

The business model describes how a company generates value. It mainly focuses on how to make a profit for the organization. It identifies the products or services the business plans to sell, its identified target market and any anticipated expenses. It is very essential for the current project since it is going to be a new business in the market. It needs financial support and they have been framed in the revenue model to make a successful place in the market.

The Revenue model describes how a company generates from the value it has generated for customers. It identifies which revenue source to pursue based on some of the questions that need to be asked for the amount of money that needs to be spent on each of the products. The major things focused on this are, what value to offer? How to price the value? and Who pays for the value?

For the project, Personal Expenses Tracker, the following questions under the guidance of the revenue model are framed to have an understanding of the money that is going to be used on various factors of development of the deployment and maintenance of the product.

1. Who pays? – Is it always the client? (Advertiser, Sponsor, Insurer)

The Insurer will be paying for the product because the product will be given insurance by any organization for the development and implementation and maintenance of the product.

2. How much is paid? – Is it always fixed? (Auction, Volume Discount, Dynamic Pricing)

It depends on the number of customers going to use the product. That includes the users visiting the website per day so that the server maintenance will be allotted the money that needs to be paid on that basis, as we use cloud computing for the scalability and elasticity of the application based on the usage of the application the price will be charged. The amount paid is never fixed; it is based on dynamic pricing.

3. What is paid? – Is it always money? (Data, Activities, Shares)

It is entirely money that is being paid in this project. The data that has been received from the users and the incoming information is given by the users. It also includes the graphs and statistical methods to actively analyze the expenditures in the application and the users can check their expense activities at any time and anywhere.

4. How is it paid? – Is it always directly? (Subscription, Credit, Lease)

It varies according to the maintenance of the product if it is going to be maintained on a large scale with the help of cloud providers that are GCP, AWS or servers. This case includes a subscription to be maintained either for a year or month wise. The premium subscription can be paid using credit cards, debit cards, UPI payments and wallet payments online.

5. For what is paid? – Is it always the product? (Per Add-On, Per Result, Per Use)

The money is being paid mostly only for the product alone, this is because it is only the product that needs money to be running the funds for the project. It requires special funding for the product that is being used based on the customers using the website. It varies from month to month; this is due to the usage of the website everyday in order to keep track of the day to day expenditures spent by the users. The money is paid by the customers based on the customization of the application and premium features.

3.4 Problem Solution fit

The Problem-Solution Fit means that the solution that is realized can actually solve the problem that the customer faces.

Problem-Solution fit canvas 2.0		Purpose / Vision : Personal expense tracker	
Define CS, fit into CC	1. CUSTOMER SEGMENT(S) Who is your customer? i.e. working parents of 0-5 y.o. kids <ul style="list-style-type: none">The primary level of customers, targeted are those who are earning the source of income to lead a better life. To be more specific customers who are struggling to save money are the target customers.The next level of customers will be the individuals who are unable to manage their monthly credit card bills, EMI bills, loan debts and monthly expenses.	6. CUSTOMER CONSTRAINTS What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices. <ul style="list-style-type: none">The major constraint for the "primary customer" is that to find a suitable application, they need to make an analysis of each of the expenses they spent.In simple words, the number of applications are available in app store or extensions and it is complicated for the users to choose the best one and decide on which application to select and use, it takes a lot of time to choose the right application.	5. AVAILABLE SOLUTIONS Which solutions are available to the customers when they face a problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking Websites and Applications for personal expense tracker is available, but the problem is that they are not available in most of the country currencies.. Even if some are available, they are not that effective in predicting the expenditure.
	2. JOBS-TO-BE-DONE / PROBLEMS Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides. The main problem is to find the best application to track the customer's daily expenses easy save money, the application should contain graphs, statistics, analysis etc	9. PROBLEM ROOT CAUSE What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations. <ul style="list-style-type: none">The right way to set budget by the users is not known by them explicitly. As a reason, the users are confused about which application will be suitable for them based on their income and expenditure.The users assume that the income obtained by him/her, are enough for a short period of time but time is uncertain as economy rises day to day. This is done by the users based on the analysis of the previous years of economy and typical advice from the elders to save money. Due to this, the users are ended in disappointment in not managing the money when prices raised. The users fall into this cause because of the fact that some of the applications for the expenses tracking are based on the income obtained by them. But when they face the shortage of the money it makes them to realize to find the better way to save money. This makes the users in the position that, the user is unable to handle the situation.	7. BEHAVIOUR 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; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace) <ul style="list-style-type: none">The primary reason of address is the problem by going to each application/website and checking the result on saving money obtained by them to that the budget that are been set by the users in that application for saving money.The secondary customers will not be involved in this issue, since they just provide their income details and the unavoidable (rent/loan/grocery/electricity and fuel bills etc..) of the users based on the income obtained by them.
Focus on J&P, tap into BE, understand RC	3. TRIGGERS What triggers customers to act? i.e. seeing their neighbor installing solar panels, reading about a more efficient solution in the news. The benefits got by other users is triggering the individuals to make them try the application that are used by the other user. This allows them to make an effort to save the money for leading a standard way of living.	10. YOUR SOLUTION If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behavior. <ul style="list-style-type: none">The project focuses on getting the data from the users and comparing them with the expenditure and preparing an analysis which results in the overall prediction of the daily expenses for the users.The project will provide a way to analyze the income obtained by the users and will compare them with the previous monthly or daily expenses and will provide the overall prediction of the expenses list that is suitable for the users.The organization developers will be updating their application features and with that, the prediction can be done to know the users availability of the better user experience.	8. CHANNELS OF BEHAVIOUR 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 The actions taken by the customer in the ways of online is that search for the application and their requirements but visiting each of them takes a lot of time for the users. There are many chances of missing the better feature to save or manage money. 8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. The offline way of tracking expenditure is not similar to that of the online one as manual way is time consuming not much effective in saving money. This will lead to a lot of stress among the users and their family as it takes a lot of time and effort.
	4. EMOTIONS: BEFORE / AFTER How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure, confident, in control - use it in your communication strategy & design. <ul style="list-style-type: none">The users are very much worried about losing their valuable money in unwanted expenses, before getting used to know this website.After the issue has been solved with the help of the website, the users are confident in selecting the right way to save and track the money and to save the money for the better future.		

4 REQUIREMENT ANALYSIS

4.1 Functional requirements

The suggested solution's functional requirements are listed below.

FR No.	Functional Requirement	Sub Requirement
FR-1	User Registration	This is a form that collects information from the user.
FR-2	Login	Users need to enter their username and password here.
FR-3	Expenses	The user must be able to add their expenses and set a limit of their expenses in the application.
FR-4	Expense Tracker	The expenses should be represented graphically.
FR-5	Email Alert	The application sends an email if the expense exceeds the limit

4.2 Non-Functional requirements

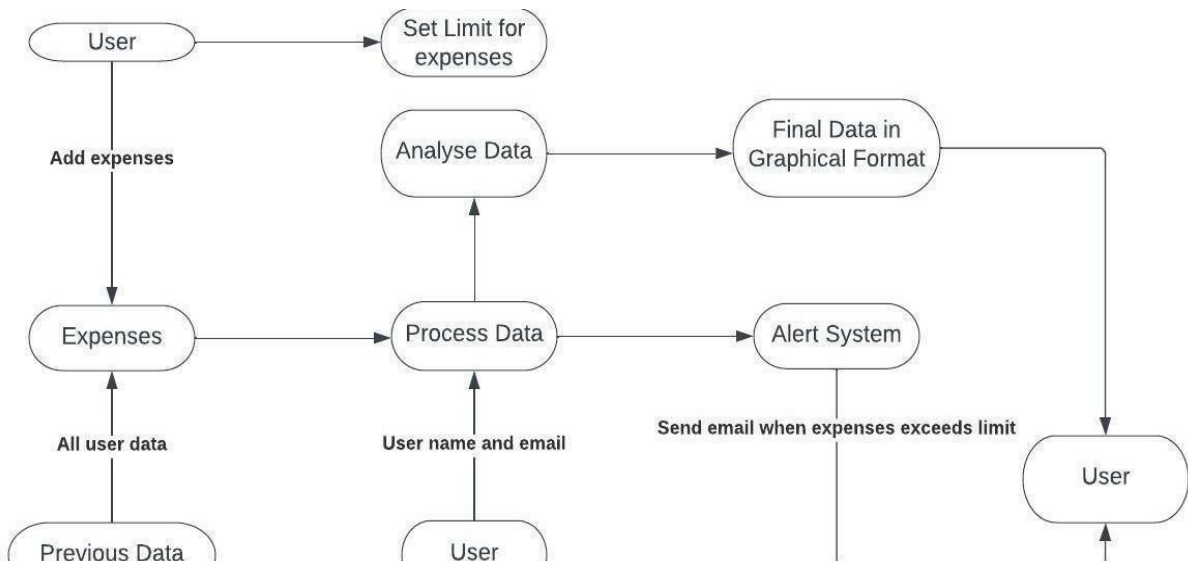
The non-functional requirements of the proposed solution are as follows.

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	The Application keeps an accurate record of the user's income and expenses.
NFR-2	Security	A detailed accounting of the user's income and expenses.
NFR-3	Performance	Because of lightweight database support, the system's throughput is increased.
NFR-4	Availability	The application must be completely operational at all times.
NFR-5	Scalability	The application must always function in its entirety.

5 PROJECT DESIGN

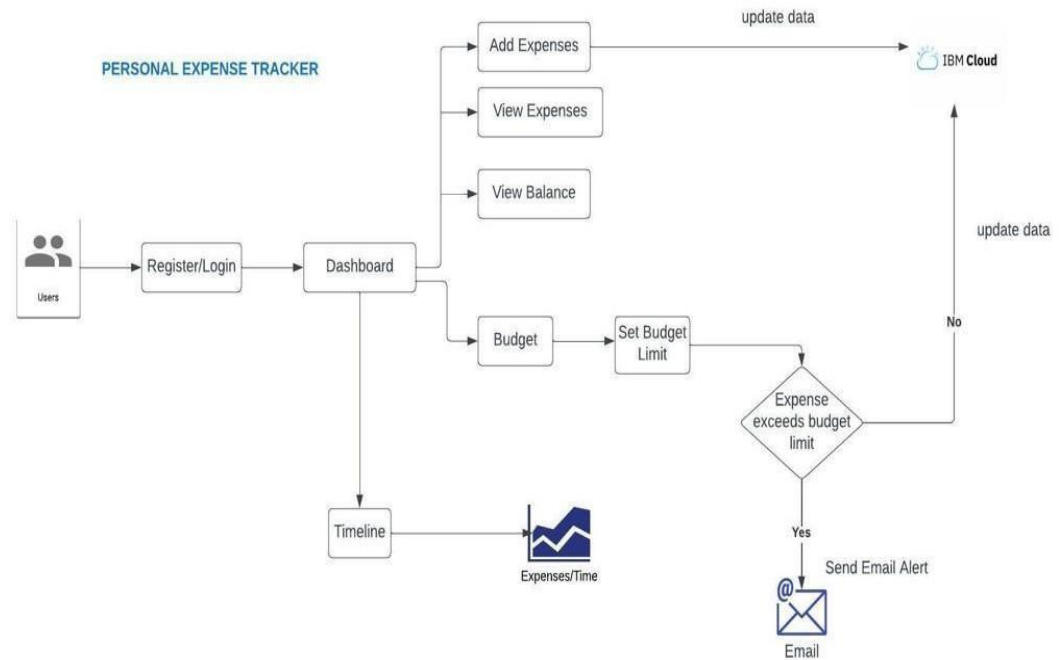
5.1 Data Flow Diagrams

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.



Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2



5.2 User Stories

An informal, generic explanation of a software feature written from the viewpoint of the end user is known as a user story. Its objective is to explain how a software feature will benefit the user.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance
Customer (Mobile user & web <u>user</u>)	Registration	USN-1	As a user, I can register for the application by entering my email, and password, and confirming my password.	I can access my account/dashboard
		USN-2	As a user, I will receive a confirmation email once I have registered for the application	I can receive confirmation mail
		USN-3	As a user, I can register for the application through Facebook	I can register & the dashboard Facebook Login
		USN-4	As a user, I can register for the application through a Google account.	I can register & the dashboard Google Account

	Login	USN-5	As a user, I can log into the application by entering my email & password	I can access the application.
	Dashboard	USN-6	As a user, I can see the expenditure details and the daily expense.	I can view the expenses and <u>a</u> expense details
Customer Care Executive		USN-7	As a customer care executive, I can solve the problem that customers face.	I can provide s customers at a 24*7.
Administrator	Application	USN-8	As an administrator, I can upgrade or update the application.	I can fix any bug by customer upgrade the app

6 PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

The purpose of sprint planning is to define what can be delivered in the sprint and how that work will be achieved. Sprint planning is done in collaboration with the whole team.

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story P
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1
Sprint-3	Dashboard	USN-6	As a user, I can view the expenditure details and can add new expenses on the dashboard	3
Sprint-3	Limits	USN-7	As a user, I can set my monthly expense limit and I will receive an email when the expense exceeds limit	4
Sprint-4	Reports	USN-8	As a user, I can view the expenditure details in the graphical form	5

6.2 Sprint Delivery Schedule

Agile sprints typically last from one week to one month. The goal of sprints is to put pressure on teams to innovate and deliver more quickly, hence the shorter the sprint, the better.

Sprint	Total points	Duration	Sprint start date	Sprint end date	Story points completed
Sprint-1	20	6 days	24 Oct 2022	29 Oct 2022	20
Sprint-2	20	6 days	31 Oct 2022	31 Oct 2022	20
Sprint-3	20	6 days	07 Nov 2022	07 Nov 2022	20
Sprint-4	20	6 days	14 Nov 2022	14 Nov 2022	20

6.3 Reports from JIRA

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance cr
Customer (Mobile user & web user)	Registration	USN-1	As a user, I can register for the application by entering my email, and password, and confirming my password.	I can access m account/dashbo
		USN-2	As a user, I will receive a confirmation email once I have registered for the application	I can recei confirmation e click confirm
		USN-3	As a user, I can register for the application through Facebook	I can register & the dashboard Facebook Logi
		USN-4	As a user, I can register for the application through a Google account.	I can register & the dashboard Google Accou
	Login	USN-5	As a user, I can log into the application by entering my email & password	I can access the application.
	Dashboard	USN-6	As a user, I can see the expenditure details and the daily expense.	I can view the expenses and a expense details
Customer Care Executive		USN-7	As a customer care executive, I can solve the problem that customers face.	I can provide s customers at a 24*7.

Administrator	Application	USN-8	As an administrator , I can upgrade or update the application.	I can fix any bu by custome upgrade the app
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1
Sprint-3	Dashboard	USN-6	As a user, I can view the expenditure details and can add new expenses on the dashboard	3
Sprint-3	Limits	USN-7	As a user, I can set my monthly expense limit and I will receive an email when the expense exceeds limit	4
Sprint-4	Reports	USN-8	As a user, I can view the expenditure details in the graphical form	5

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IBM | ASS-4 - sudh19218.it@rmkec.ac... | Meet - dhp-ecoi-hzi | Personal_Expense_Tracker - Roadmap

← | → | Refresh | sudh19218.atlassian.net/jira/software/projects/PER/boards/2/roadmap | Share | Star | Add | B

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Jira Software | Your work | Projects | Filters | Dashboards | People | Apps | Create

Search | ? | Settings | Profile

Projects / Personal_Expense_Tracker

Roadmap

Give feedback | Share | Export | ...

Search | [User Avatars] | Status category | Epic | View settings

	T	NOV	DEC	JAN '23	FEB '23
Sprints		PER... PER... PER S...			
PER-1 Sprint - 1					
PER-2 Sprint - 2					
PER-3 Sprint - 3					
PER-4 Sprint - 4					
+ Create Epic					

Today | Weeks | Months | Quarters | ↗

Type here to search

Taskbar icons: File Explorer, Edge, Spotify, etc.

20°C Clear | 22:38 | 18-11-2022

Browser tabs: IBM, ASS-4 - sudh19218.it@rmkec.ac..., Meet - dhp-ecol-hzi, PER board - Agile board - Jira

Address bar: sudh19218.atlassian.net/jira/software/projects/PER/boards/2

Navigation: Jira Software, Your work, Projects, Filters, Dashboards, People, Apps, Create

Search: Search

Projects / Personal_Expense_Tracker

All sprints

0 days remaining [Complete sprint](#)

GROUP BY: None [Insights](#)

TO DO	IN PROGRESS 15 ISSUES	DONE 3 ISSUES ✓
	<div>Import Packages python SPRINT - 1 PER-8 3</div>	<div>Create IBM Cloud account SPRINT - 1 PER-7 ✓ 5 5</div>
	<div>Setup Flask SPRINT - 1 PER-9 4</div>	<div>Kubernetes SPRINT - 4 PER-21 ✓ 5 5</div>
	<div>Create Dashboard SPRINT - 2 PER-10 3</div>	
	<div>Create Workspace</div>	

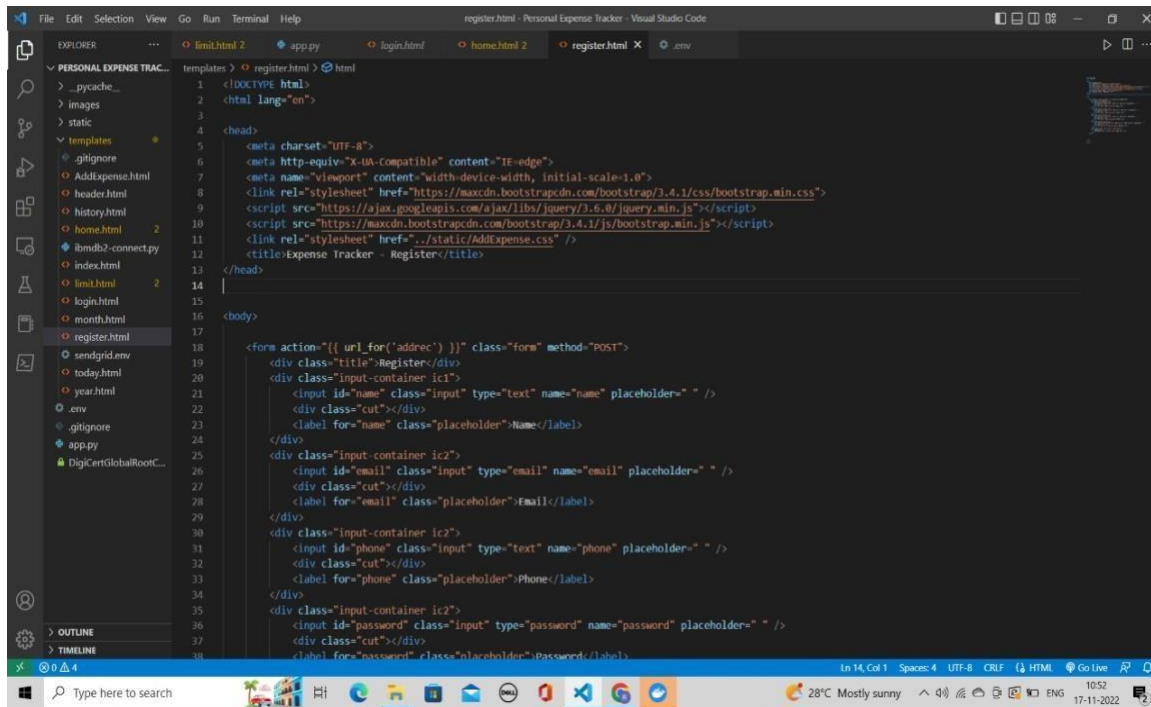
Windows taskbar: Type here to search, 20°C Clear, 22:39, 18-11-2022

/

//

7 CODING & SOLUTIONING (Explain the features added in the project along with code)

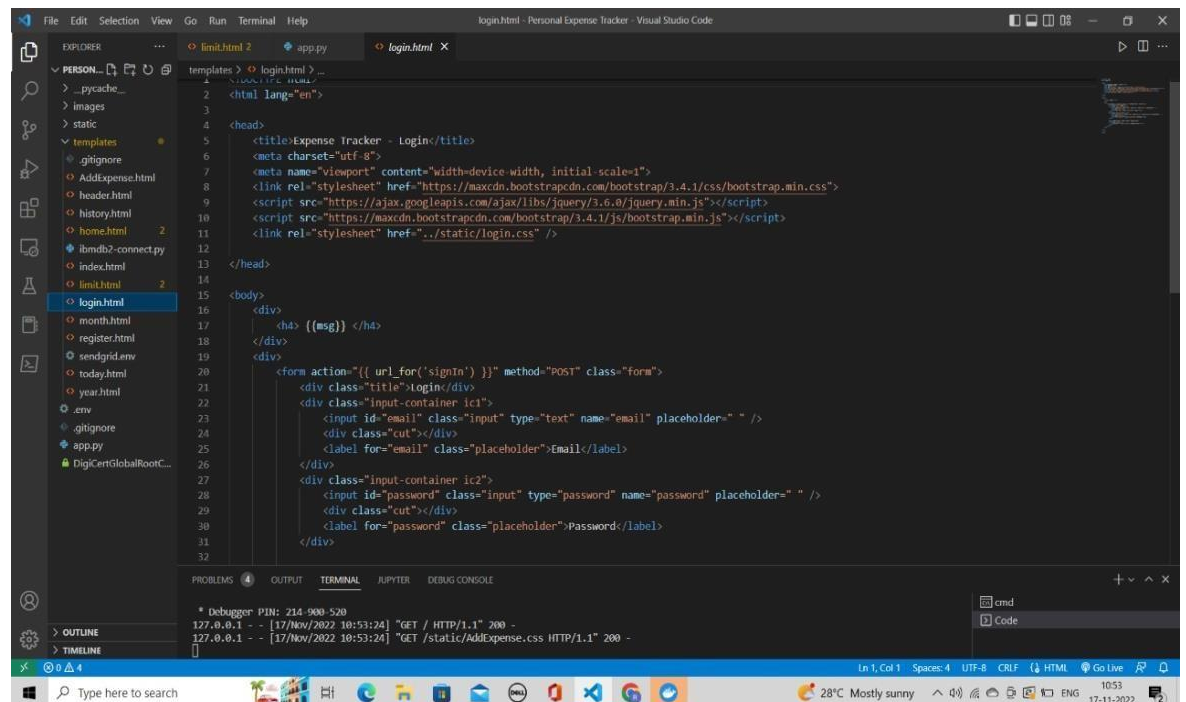
7.1 REGISTER PAGE



The screenshot shows the Visual Studio Code editor with the 'register.html' file open. The file is part of a project named 'Personal Expense Tracker'. The Explorer sidebar on the left shows the project structure, including files like 'register.html', 'login.html', 'home.html', and 'index.html'. The main editor area displays the HTML code for the register page. The code includes a DOCTYPE declaration, a charset of 'utf-8', and a viewport meta tag. It also includes links to Bootstrap CSS and jQuery. The main content is a form with three input fields: 'name', 'email', and 'password'. Each input field is enclosed in a 'div' with a 'class' attribute. The form is submitted to the URL 'register' using the POST method. The form is styled with Bootstrap classes like 'form', 'input', and 'label'.

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="utf-8">
6   <meta http-equiv="X-UA-Compatible" content="IE=edge">
7   <meta name="viewport" content="width=device-width, initial-scale=1.0">
8   <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
9   <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
10  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
11  <link rel="stylesheet" href="static/AddExpense.css" />
12  <title>Expense Tracker - Register</title>
13 </head>
14
15 <body>
16
17   <form action="{{ url_for('addrec') }}" class="form" method="POST">
18     <div class="title">Register</div>
19     <div class="input-container ic1">
20       <input id="name" class="input" type="text" name="name" placeholder=" " />
21       <div class="cut"></div>
22       <label for="name" class="placeholder">Name</label>
23     </div>
24     <div class="input-container ic2">
25       <input id="email" class="input" type="email" name="email" placeholder=" " />
26       <div class="cut"></div>
27       <label for="email" class="placeholder">Email</label>
28     </div>
29     <div class="input-container ic2">
30       <input id="password" class="input" type="password" name="password" placeholder=" " />
31       <div class="cut"></div>
32       <label for="password" class="placeholder">Password</label>
33     </div>
34   </form>
35 </body>
```

LOGIN PAGE



The screenshot shows the Visual Studio Code editor with the 'login.html' file open. The file is part of a project named 'Personal Expense Tracker'. The Explorer sidebar on the left shows the project structure, including files like 'login.html', 'register.html', 'home.html', and 'index.html'. The main editor area displays the HTML code for the login page. The code includes a DOCTYPE declaration, a charset of 'utf-8', and a viewport meta tag. It also includes links to Bootstrap CSS and jQuery. The main content is a form with two input fields: 'email' and 'password'. Each input field is enclosed in a 'div' with a 'class' attribute. The form is submitted to the URL 'login' using the POST method. The form is styled with Bootstrap classes like 'form', 'input', and 'label'. The code also includes a message placeholder for feedback.

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <title>Expense Tracker - Login</title>
6   <meta charset="utf-8">
7   <meta name="viewport" content="width=device-width, initial-scale=1">
8   <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
9   <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
10  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
11  <link rel="stylesheet" href="static/login.css" />
12 </head>
13
14 <body>
15   <div>
16     <h1>{{ msg }}</h1>
17   </div>
18   <div>
19     <form action="{{ url_for('signin') }}" method="POST" class="form">
20       <div class="title">Login</div>
21       <div class="input-container ic1">
22         <input id="email" class="input" type="text" name="email" placeholder=" " />
23         <div class="cut"></div>
24         <label for="email" class="placeholder">Email</label>
25       </div>
26       <div class="input-container ic2">
27         <input id="password" class="input" type="password" name="password" placeholder=" " />
28         <div class="cut"></div>
29         <label for="password" class="placeholder">Password</label>
30       </div>
31     </form>
32   </div>
33 </body>
```



Login

Email

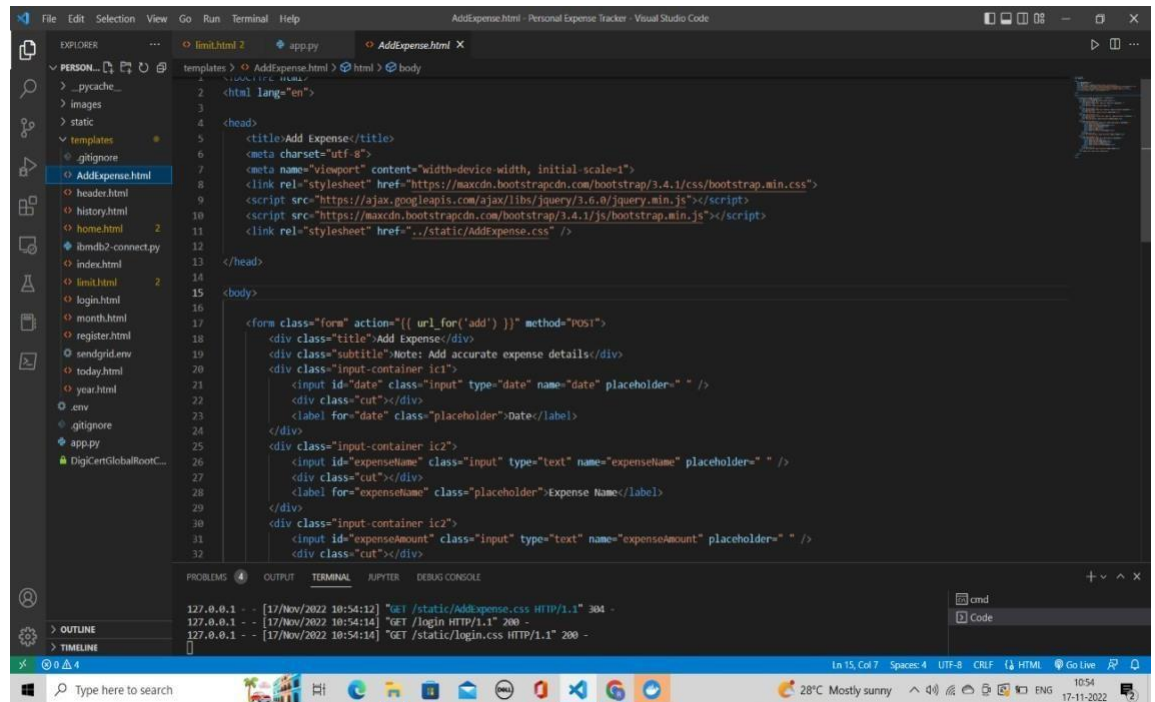
Password

Login

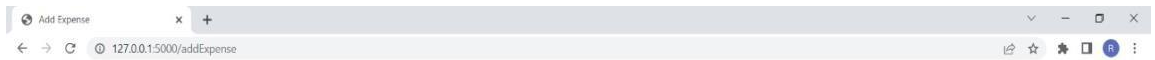
[New User? Register Here](#)



ADD EXPENSE PAGE



```
1 <!-- AddExpense.html -->
2 <html lang="en">
3
4 <head>
5   <title>Add Expense</title>
6   <meta charset="utf-8">
7   <meta name="viewport" content="width=device width, initial-scale=1">
8   <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
9   <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
10   <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
11   <link rel="stylesheet" href="static/AddExpense.css" />
12 </head>
13
14 <body>
15
16   <form class="form" action="{ url for('add') }}" method="POST">
17     <div class="title">Add Expense</div>
18     <div class="subtitle">Note: Add accurate expense details</div>
19     <div class="input-container ic1">
20       <input id="date" class="input" type="date" name="date" placeholder=" " />
21       <div class="cut"></div>
22       <label for="date" class="placeholder">Date</label>
23     </div>
24     <div class="input-container ic2">
25       <input id="expenseName" class="input" type="text" name="expenseName" placeholder=" " />
26       <div class="cut"></div>
27       <label for="expenseName" class="placeholder">Expense Name</label>
28     </div>
29     <div class="input-container ic2">
30       <input id="expenseAmount" class="input" type="text" name="expenseAmount" placeholder=" " />
31       <div class="cut"></div>
32     </div>
```



Add Expense

Note: Add accurate expense details

Date

dd-mm-yyyy

Expense Name

Expense Amount

Expense Category

Food

Payment Method

Cash

Submit

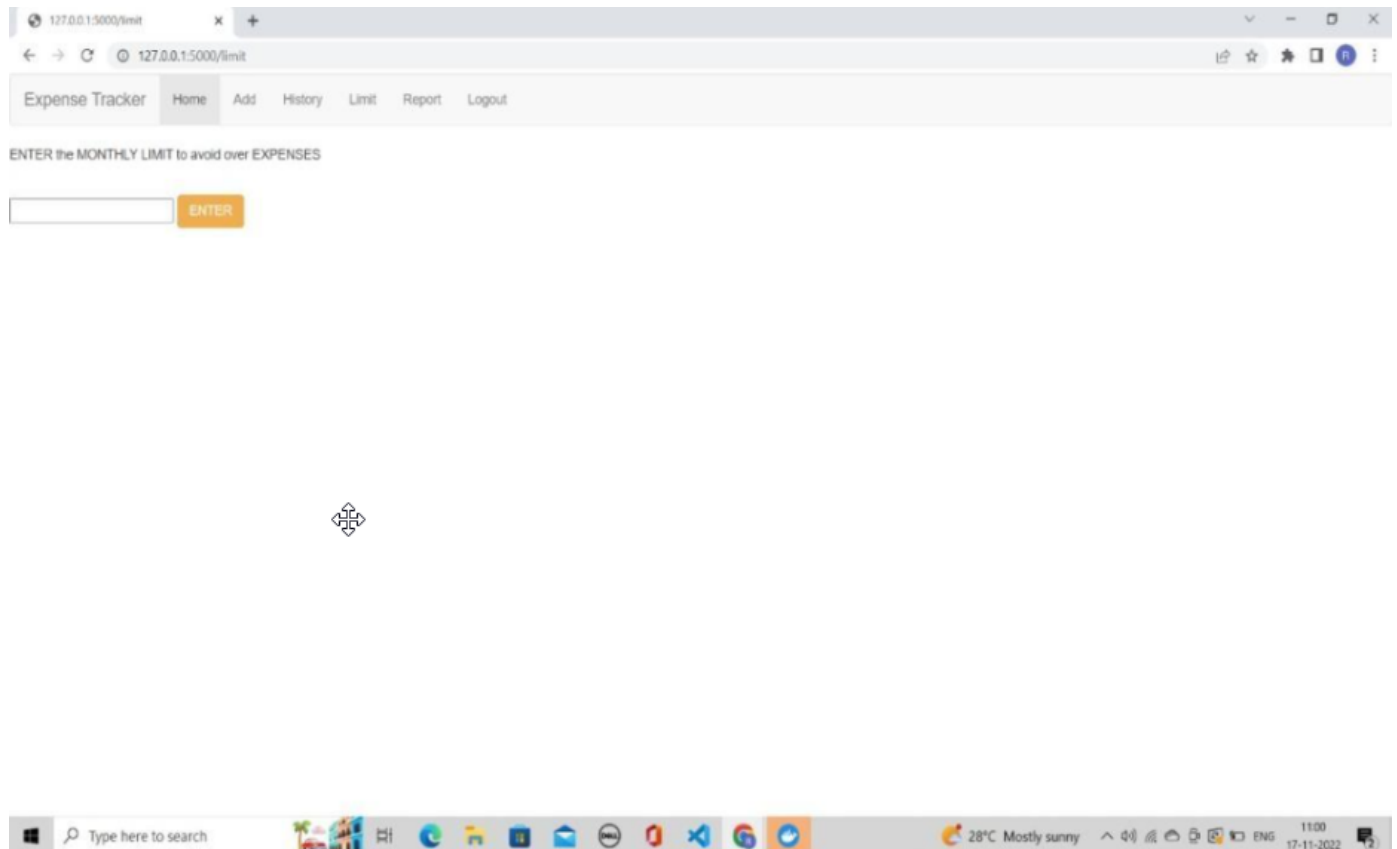
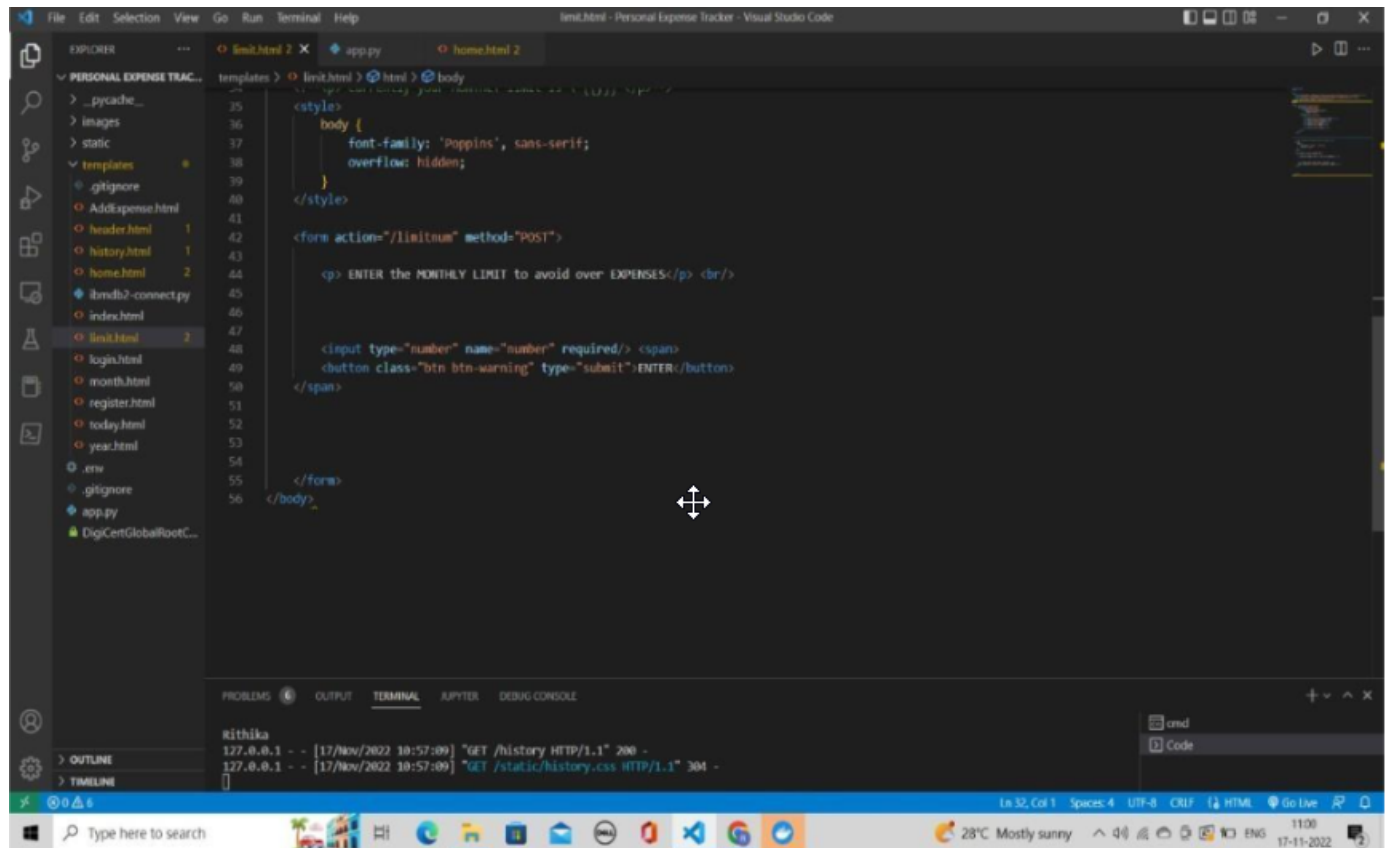


HISTORY

```
21 <li><a href="/addExpense">Add</a></li>
22 <li><a href="/history">History</a></li>
23 <li><a href="/limit">Limit</a></li>
24 <li><a href="/today">Report</a></li>
25
26 <li><a href="/logout">Logout</a></li>
27 </ul>
28 </div>
29 </nav>
30
31 <div class="container">
32 <table class="table table-dark">
33 <thead>
34 <tr>
35 <td scope="col">Date</td>
36 <td scope="col">Expense Name</td>
37 <td scope="col">Expense Amount</td>
38 <td scope="col">Expense Category</td>
39 <td scope="col">Payment Method</td>
40 </thead>
41 <tbody>
42 <tr>
43 <td scope="row">{{row["DATE"]}}</td>
44 <td>{{row["NAME"]}}</td>
45 <td>{{row["AMOUNT"]}}</td>
46 <td>{{row["CATEGORY"]}}</td>
47 <td>{{row["PAYMENTMETHOD"]}}</td>
48 <td><a href="/delete/{{row["NAME"]}}">Delete</a></td>
49 </tr>
50 <tr>
51 <td colspan="5">{{endfor}}</td>
52 </tbody>
53 </table>
54 </div>
55 </div>
56 </div>
57 </div>
58 </div>
59 </div>
60 </div>
61 </div>
62 </div>
63 </div>
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99 </div>
100 </div>
```

Date	Expense Name	Expense Amount	Expense Category	Payment Method
2022-11-15	pizza	400	Food	Cash
2022-11-15	biryani	200	food	cash
2022-11-15	book	500	entertainment	cash
2022-11-14	House Rent	10000	rent	cash
2022-10-15	Bike	40000	emi	debitCard
2022-11-15	chocolate	200	food	cash
2022-11-16	biryani	200	food	cash
2022-11-16	chocolate	200	food	cash
2022-11-16	chocolate	200	food	cash
2022-11-16	biryani	200	food	cash
2022-11-16	book	200	entertainment	cash
2022-11-17	chocolate	500	food	cash

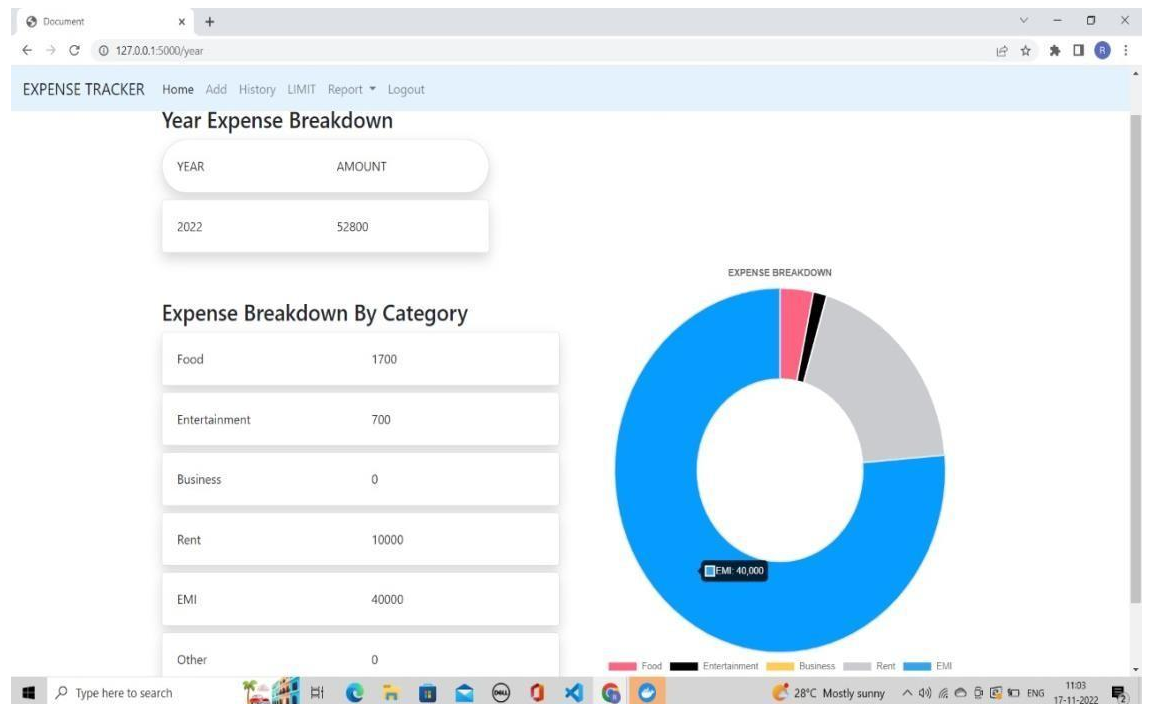
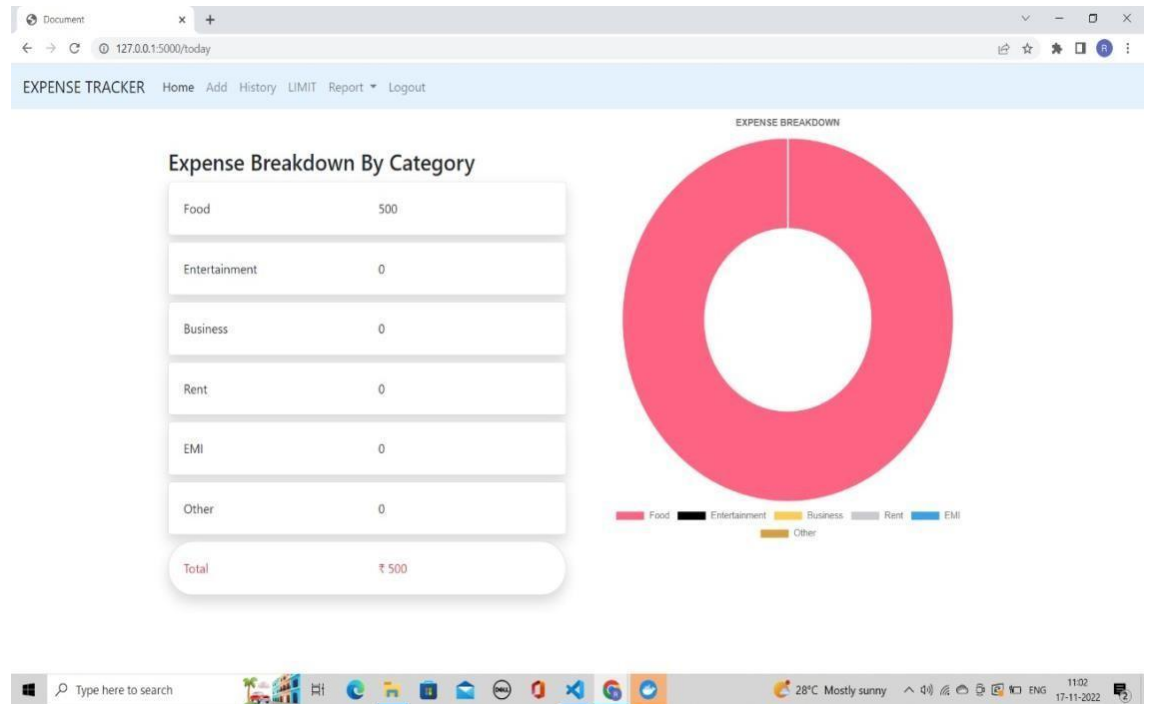
LIMIT



REPORT

```
20 <div class="navbar sticky-top navbar-expand-lg navbar-light" style="background-color: #e2e3e5;">
21   <a class="navbar-brand href="#">EXPENSE TRACKER</a>
22   <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
23     <span class="navbar-toggler-icon"></span>
24   </button>
25
26   <div class="collapse navbar-collapse" id="navbarSupportedContent">
27     <ul class="navbar-nav mr-auto">
28       <li class="nav-item">
29         <a class="nav-link href="/home" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
30           <span class="navbar-toggler-icon"></span>
31         </a>
32       </li>
33       <li class="nav-item">
34         <a class="nav-link href="/add" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
35           <span class="navbar-toggler-icon"></span>
36         </a>
37       </li>
38       <li class="nav-item">
39         <a class="nav-link href="/display/history" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
40           <span class="navbar-toggler-icon"></span>
41         </a>
42       </li>
43       <li class="nav-item">
44         <a class="nav-link href="/find" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
45           <span class="navbar-toggler-icon"></span>
46         </a>
47       </li>
48       <li class="nav-item">
49         <a class="nav-link href="/dropdown" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
50           <span class="navbar-toggler-icon"></span>
51         </a>
52       </li>
53       <li class="nav-item">
54         <a class="nav-link href="/report" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
55           <span class="navbar-toggler-icon"></span>
56         </a>
57       </li>
58     </ul>
59   </div>
60 </div>
```

```
20 <div class="navbar sticky-top navbar-expand-lg navbar-light" style="background-color: #e2e3e5;">
21   <a class="navbar-brand href="#">EXPENSE TRACKER</a>
22   <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
23     <span class="navbar-toggler-icon"></span>
24   </button>
25
26   <div class="collapse navbar-collapse" id="navbarSupportedContent">
27     <ul class="navbar-nav mr-auto">
28       <li class="nav-item">
29         <a class="nav-link href="/home" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
30           <span class="navbar-toggler-icon"></span>
31         </a>
32       </li>
33       <li class="nav-item">
34         <a class="nav-link href="/add" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
35           <span class="navbar-toggler-icon"></span>
36         </a>
37       </li>
38       <li class="nav-item">
39         <a class="nav-link href="/display/history" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
40           <span class="navbar-toggler-icon"></span>
41         </a>
42       </li>
43       <li class="nav-item">
44         <a class="nav-link href="/find" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
45           <span class="navbar-toggler-icon"></span>
46         </a>
47       </li>
48       <li class="nav-item">
49         <a class="nav-link href="/dropdown" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
50           <span class="navbar-toggler-icon"></span>
51         </a>
52       </li>
53       <li class="nav-item">
54         <a class="nav-link href="/report" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent"
55           <span class="navbar-toggler-icon"></span>
56         </a>
57       </li>
58     </ul>
59   </div>
60 </div>
```



7.2 Database Schema (if Applicable)

The screenshot shows the IBM Db2 on Cloud console interface. The top navigation bar includes 'Load Data', 'Load History', 'Tables', 'Views', 'Indexes', 'Aliases', 'MQTs', 'Sequences', and 'Application objects'. The 'Tables' section is active, displaying a search bar and a 'Refresh' button. The main content area is divided into two panels: 'Schemas' and 'Tables'.

Schemas Panel:

<input checked="" type="checkbox"/>	Name	Type	Tables
<input checked="" type="checkbox"/>	DKH61031	User	3

Total: 1, selected: 1

Tables Panel:

<input type="checkbox"/>	Name	Schema	Properties
<input type="checkbox"/>	EXPENSE	DKH61031	...
<input type="checkbox"/>	LIMIT	DKH61031	...
<input type="checkbox"/>	USERS	DKH61031	...

Total: 3, selected: 0

The screenshot shows the IBM Db2 on Cloud console interface, specifically the 'Table definition' section for the 'USERS' table. The top navigation bar is the same as the previous screenshot. The 'Tables' section is active, displaying a search bar and a 'Refresh' button. The main content area is divided into two panels: 'Tables' and 'Table definition'.

Tables Panel:

<input type="checkbox"/>	Name	Schema	Properties
<input type="checkbox"/>	EXPENSE	DKH61031	...
<input type="checkbox"/>	LIMIT	DKH61031	...
<input type="checkbox"/>	USERS	DKH61031	...

Total: 3, selected: 0

Table definition Panel:

USERS

No statistics available

Name	Data type	Nullable	Length	Scale
USERID	INTEGER	N		0
NAME	VARCHAR	N	255	0
EMAIL	VARCHAR	N	255	0
PHONE	VARCHAR	N	255	0
PASSWORD	VARCHAR	N	255	0

View data

8 TESTING

8.1 Test Cases

Test cases are a set of actions performed on a system to determine if it satisfies software requirements and functions correctly as it is claimed to perform.

8.2 User Acceptance Testing

Before deploying the software application to a production environment the end user or client performs a type of testing known as user acceptance testing, or UAT to ensure whether the software functionalities serve the purpose of development.

1. Purpose of Document

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

2. Defect Analysis

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	10	0	0	10
Client Application	50	0	0	50
Security	1	0	0	1
Outsource Shipping	3	0	0	3

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	10	3	1	2	16
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1

Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	13	12	25	74

3. Test Case Analysis

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

Exception Reporting	8	0	0	8
Final Report Output	4	0	0	4
Version Control	2	0	0	2

9 RESULTS

9.1 Performance Metrics

10 ADVANTAGES & DISADVANTAGES

Advantages:

1. **You have no control over your money. If you** don't check your spending and create a budget, you will have no control whatsoever on your money. Instead, money will control you, and you will either have perpetual lack of funds or you will end up steeped in debt. A money manager app helps you decide between short-term and long-term spending .
 2. **You have no financial goals** If you are spending money frivolously, you will not have money to set financial goals. However, when you have a daily expense manager, you will be able to work with limited resources and use your money in a wise manner so that you can create financial goals and ensure you meet them.
 3. **You are unaware what is happening with your money. If you** are clueless about how much is your inflow and how much you are spending, you will not know at the end of the month what happened to your money. An expense tracker helps you figure out what is happening to your money, and whether you can afford something you want.
 4. **You spend and save in a haphazard manner** If you don't have great financial management skills, you will not know how to categorize your expenses. However, tracking your expenses and Budgeting them will help you become aware of how much you have to allocate to each expense category, and if you are short, you will be able to make adjustments with ease.
 5. **You have no clue about making your money work for you. In** this day and age, when expenses are going through the roof, it has become crucial that you learn to make your money work for you so that you can create a nest egg for the future.
 6. **You don't have funds for emergencies** Remember, emergencies come when you least expect. Hence, if you don't have money stashed away for a rainy day, you will end up borrowing from family and friends. This way you could get into debt that will be difficult to pay back due to your poor money management skills
- Disadvantages

Disadvantages:

1. Your information is less secure, and probably being used and sold. If the service is free, then the product is you. Mint.com, like other financial apps, is a free service. They have to pay their bills somehow, so regardless of what their privacy policy may or may not say, just assume that your spending history and trends are going to be recorded and analyzed, by someone, somewhere.

2. Now, you shouldn't have to worry about credit card fraud or identity theft, these companies are large enough and secure enough that you'll never have to worry about something like that. Just recognize that your information, most likely anonymous, will be used and potentially even sold.

3. Personally, I have no problem with that, but if you do, then make sure you avoid these types of services. Automating everything to do with your finances can make you financially lazy. If your bills are paid automatically and your finances are tracked automatically, then what is there left for you to do? Not a lot, to be honest. So you might stop caring about what you're spending and where your money is going. Eventually you may look at your Mint data and realize that you've blown your budget over the last two months, but by then it is too late. So if you do choose to use this program, ensure that you are also being diligent in checking in on your finances. Set up a weekly or biweekly check for yourself to go through your finances and hit on all the important points.

11 CONCLUSION

After making this application we assure that this application will help its users to manage the cost of their daily expenditure. It will guide them and make them aware about their daily expenses. It will prove to be helpful for the people who are frustrated with their daily budget management, irritated because of the amount of expenses and wishes to manage money and to preserve the record of their daily cost which may be useful to change their way of spending money. In short, this application will help its users to overcome the wastage of money.

12 FUTURE SCOPE

The further enhancements that are planned for developing the application to be user friendly and further features like login with gmail or social media accounts using facebook or twitter and also using SSO login so that it is helpful for users to get into the platform easily.

13 APPENDIX

GitHub & Project Demo Link

<https://github.com/IBM-EPBL/IBM-Project-25935-1659977578>