



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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1. INTRODUCTION

1.1 Project Overview

Personal Expense Tracker is a web application that allows you to track the daily expense of the user and help them to keep track of their expenses daily ,monthly ,weekly and yearly basis. It will also create a digital records for the user's income and various expenses spent by the user is 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.

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 daily,monthly,weekly and yearly basis.

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 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 the expenses. This application eliminates the

usage of paper and excel sheets to keep track 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 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 the 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's 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 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 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 also monitors user's income by tracking the received SMS's from the user's saving accounts. By calculating income and expense it produces the user's balance in monthly and yearly basis.
- It eliminates the usage of paper and excel sheets to keep track the user's expenses. It

saves time and requires less human effort.

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 expense of the user and help them to keep track of their expenses daily ,monthly ,weekly and yearly basis. It will also create a digital records for the user's income and various expenses

spent by the user is 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 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 easiest way. The application is divided into three major components that is income, expense and create transaction section. Create transaction component allows user to choose from two categories whether it is a Expense or an Income and also choose from list of types of income or expense enter the amount and date and create 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 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 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 distributed according to the user need.
- 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 decreasing the

efforts of entering the data.

- There is no notification system when the user expenses exceeds the income to warn the situation.

2.1 References

1. <https://www.ijraset.com/files/serve.php?FID=33797>
2. <https://ieeexplore.ieee.org/document/8628070>
3. https://www.irjmets.com/uploadedfiles/paper/issue_4_april_2022/21604/final/fin_irjmets1651132467.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 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.

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

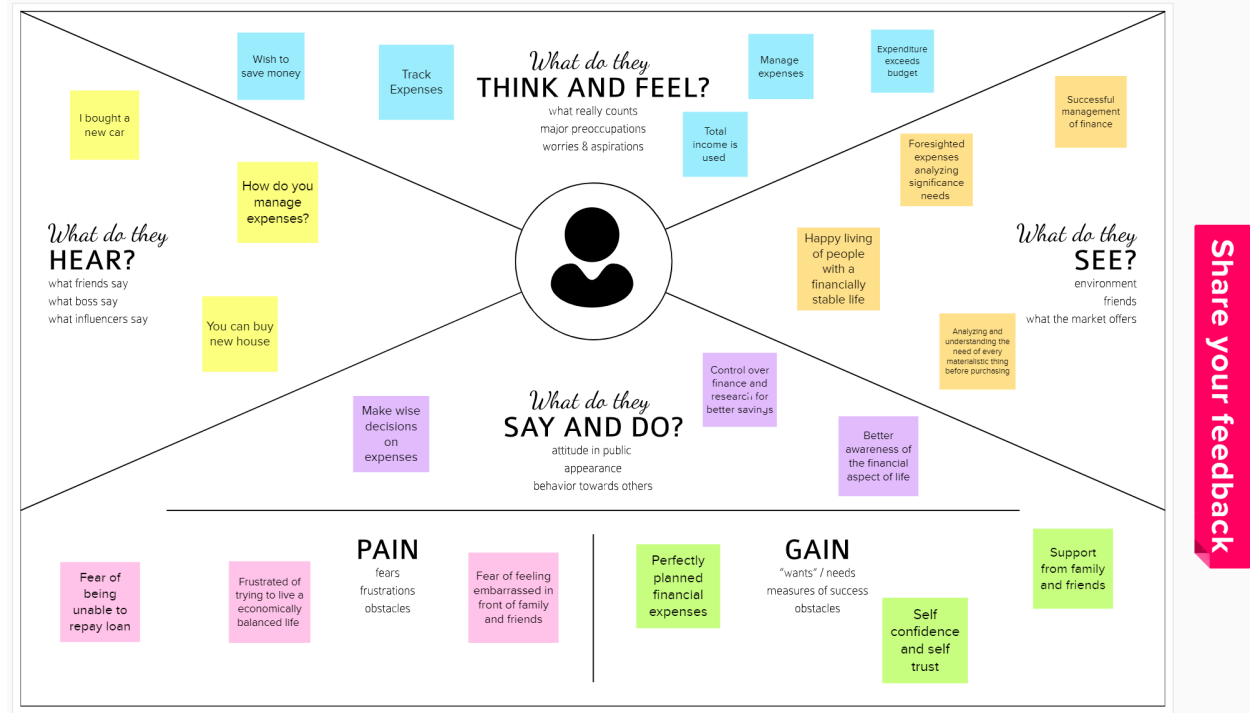
An empathy map is used to gain deeper insights on the customer's interaction with the system. It gives an idea on what the user feels and experiences while using the system, what fears the user has respective to the system, etc. It also specifies how supportive the system environment is and what the 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.

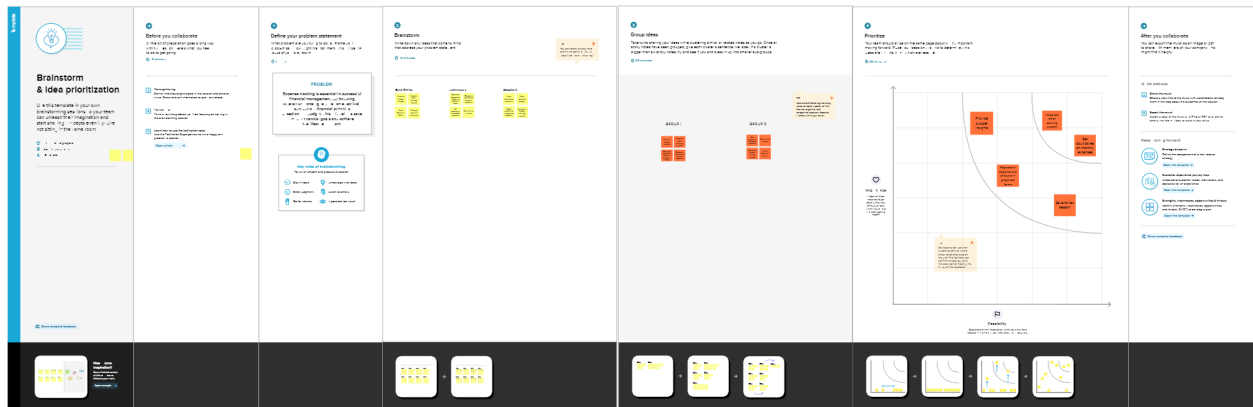
1

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



3.2 Ideation & Brainstorming

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



3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Expense tracking is essential in successful financial management. By knowing where our money goes, we can effectively sort out our financial priorities based on our budget. This will help us save for our financial goals and achieve the lifestyle we want.
2.	Idea / Solution description	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	<ol style="list-style-type: none"> 1. Integration of email alerting system 2. Representation of expenditure analysis in graphical forms 3. Categorisation and disclosure of business expenses 4. Set boundaries on monthly expenses
4.	Social Impact / Customer Satisfaction	<ol style="list-style-type: none"> 1. Customers can maintain control of their finances and promote better financial habits like saving and investing. 2. Customers can regularly track their expense wallet. 3. By tracking personal expenses and keeping meticulous records, customers have everything ready come tax time.
5.	Business Model (Revenue Model)	The application can be used in every household where the significance of
		tracking personal expense is understood thereby serving as a good business model.
6.	Scalability of the Solution	<ol style="list-style-type: none"> 1. The application can be scaled around every earning individual who wants to keep good track of his financial expenses. 2. Also, scalability can extend around people 3. working especially in Business sectors 4. who pay higher grade of taxes.

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.

Project Title: Personal Expense Tracker Application

Team Id : PNT2022TMD15641

Project Design Phase-I - Solution Fit Template

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) CS Who is your customer? I.e. working parents of 0-5 y.o. kids <ul style="list-style-type: none"> Customers are those who spend money without keeping track of it. Those who spend money lavishly. Provides a whole lot of different categories of expenditure types to avoid mismatch of expenditure. 	6. CUSTOMER CONSTRAINTS CC 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"> Most of the solution available in the internet hosts a lot of adds limiting its usability. The solution proposed here has a feature to view the expense graphically. Also it has email alert feature which sends email if the expense exceeds the given limit. 	5. AVAILABLE SOLUTIONS AS 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 & cons do these solutions have? I.e. pen and paper is an alternative to digital notetaking <ul style="list-style-type: none"> eExpense is a mobile application that runs on the Android smartphones. Using this application, users can save their expense by scanning the bills and the receipt copies. This application is useful only for Android users and It does not provide graphical visualizations. 	Explore AS, differentiate
	2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides. <ul style="list-style-type: none"> Expense tracking is essential in successful financial management. By knowing where our money goes, we can effectively sort out our financial priorities based on our budget. This will help us save for our financial goals and achieve the lifestyle we want. The objective of this application is to enable customers to keep track of their expenses. They also get an option to view the expenses as a graphical representation given the period of 1 year, 6 months etc. 	9. PROBLEM ROOT CAUSE RC 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"> Inability to live a life with scheduled financial expenses, thereby falling into debt traps. By spending lavishly and not tracking expenses, it's easy to go overboard, beyond income. Frustrated of trying to live a economically balanced life. 	7. BEHAVIOUR BE 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"> User can save all their expenses . Set up a monthly limit on the expense done. Send an email alert if the expense exceeds the limit. Keep track of their expenses and view expenses in a graphical format for detailed analysis. 	
Focus on J&P, tap into BE, understand RC	3. TRIGGERS TR What triggers customers to act? I.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news. <ul style="list-style-type: none"> Understanding the fact that the customers cansave a lot of money by these expense apps. Customers can keep track of their expenses. . 	10. YOUR SOLUTION SL 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 behaviour. <ul style="list-style-type: none"> Design a flask based personal expensetracker application. Email Alert feature which sends expense alerts using sendgrid framework An option to view expenses in a graphical format. 	8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 <ul style="list-style-type: none"> Expense trackers online come with a lot of ads which on clicking steals data like accountnumber if provided 8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. <ul style="list-style-type: none"> Make sure they are aware of the tax rules by reading the available books to make them tax read. 	Focus on J&P, tap into BE, understand RC
	4. EMOTIONS: BEFORE / AFTER EM 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"> They feel a lot clear about the income andexpenses made 			

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

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	User needs to enter their username and password here.
FR-3	Expenses	The user must be able to add their expenses and set 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

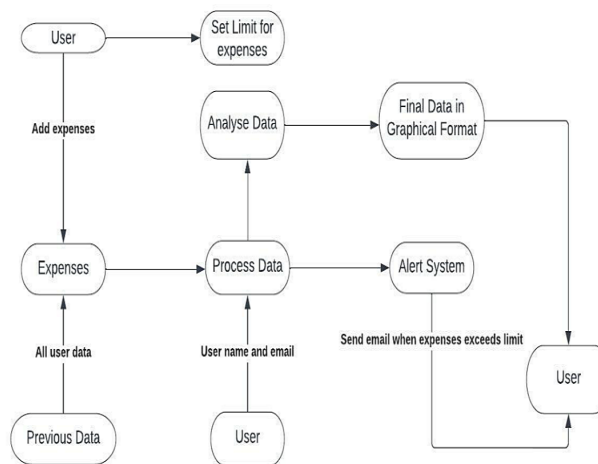
The non-functional requirements of the proposed solution are as follows.

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.



5.2 Solution & Technical Architecture

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

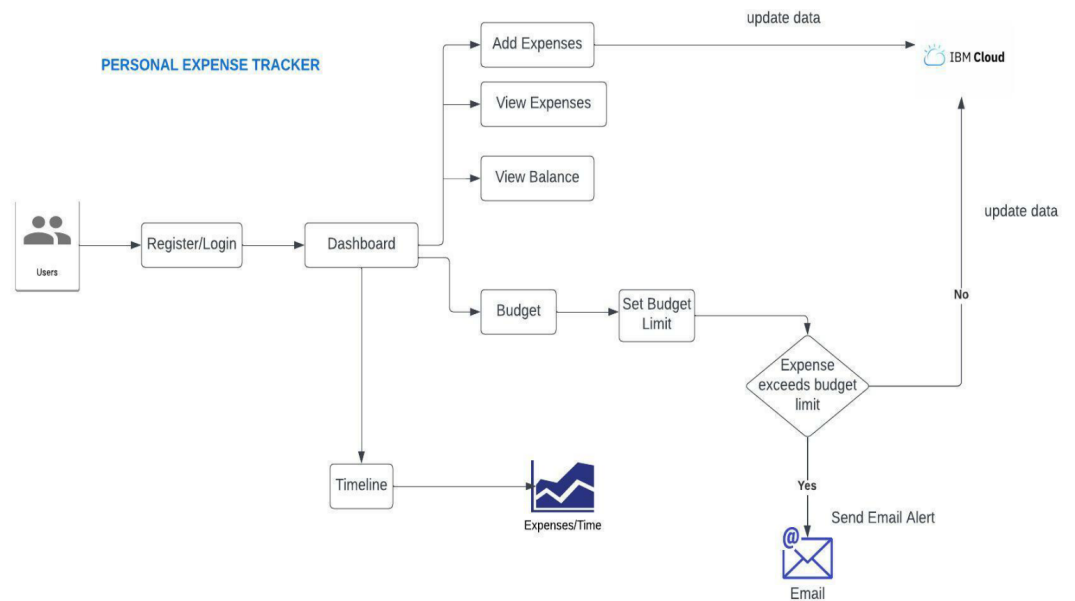


Table 1 : Components & Technologies:

S No	Component	Description	Technology
1.	User Interface	The user can interact with the application with the use of a Chatbot.	HTML, CSS, JavaScript / React Js etc.
2.	Application Logic-1	This application has a sign-in/sign-up feature that allows users to access the main dashboard after signing up.	Python/Node JS

3.	Application Logic-2	The dashboard has fields for saving money, adding expenses, and adding revenue.	IBM Watson STT service
4.	Application Logic-3	The user will receive notifications if the expense cap is exceeded and also get an expense report in form of a graph	IBM Watson Assistant
5.	Database	The MySQL database contains income and expense information.	MySQL, NoSQL, etc.
6.	Cloud Database	The user data are saved in a secure manner while using a cloud-based database service.	IBM DB2, etc
7.	File Storage	The user's financial data is stored on IBM Block Storage.	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	It makes internal resources accessible to users or apps from the outside world.	IBM Weather API, etc.

Table 2: Application Characteristics:

S No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask Framework in Python is used to implement this Application.	Python-Flask
2.	Security Implementations	The user's financial information is extremely secure. IBM cloud's Container Registry can be used to accomplish this.	Container Registry, Kubernetes Cluster
3.	Scalable Architecture	This application 'Expense Tracker' has lifetime access. When a user's income is high, this product will be in more demand.	Container Registry, Kubernetes Cluster
4.	Availability	The user will have access to this application at any time.	container Registry, Kubernetes Cluster
5.	Performance	The performance will be high because there will be no network traffics in the application.	Kubernetes Cluster

5.3 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.

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

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria
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 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 & click confirm
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook I
		USN-4	As a user, I can register for the application through a Google account.	I can register & the dashboard with 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 the expense details
Customer Care Executive		USN-7	As a customer care executive, I can solve the problem that customers face.	I can provide support to customers time 24*7.
Administrator	Application	USN-8	As an administrator, I can upgrade or update the application.	I can fix any issues raised by customers and upgrade the application.

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 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

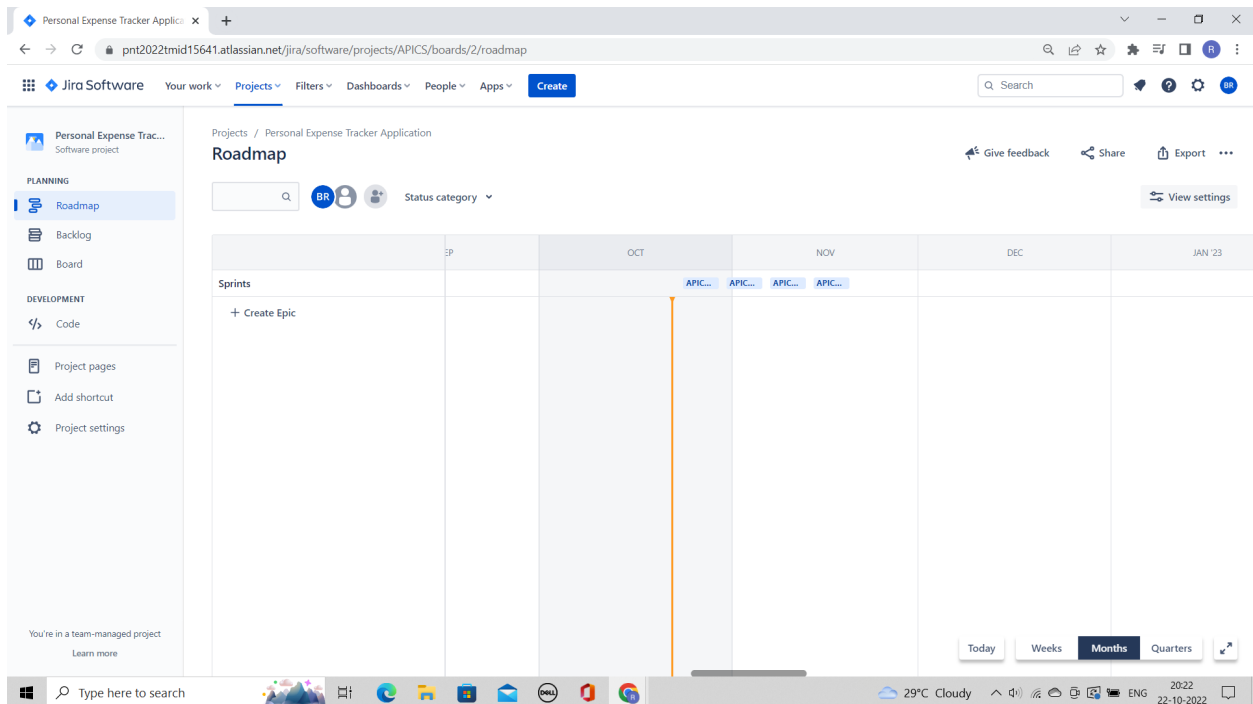
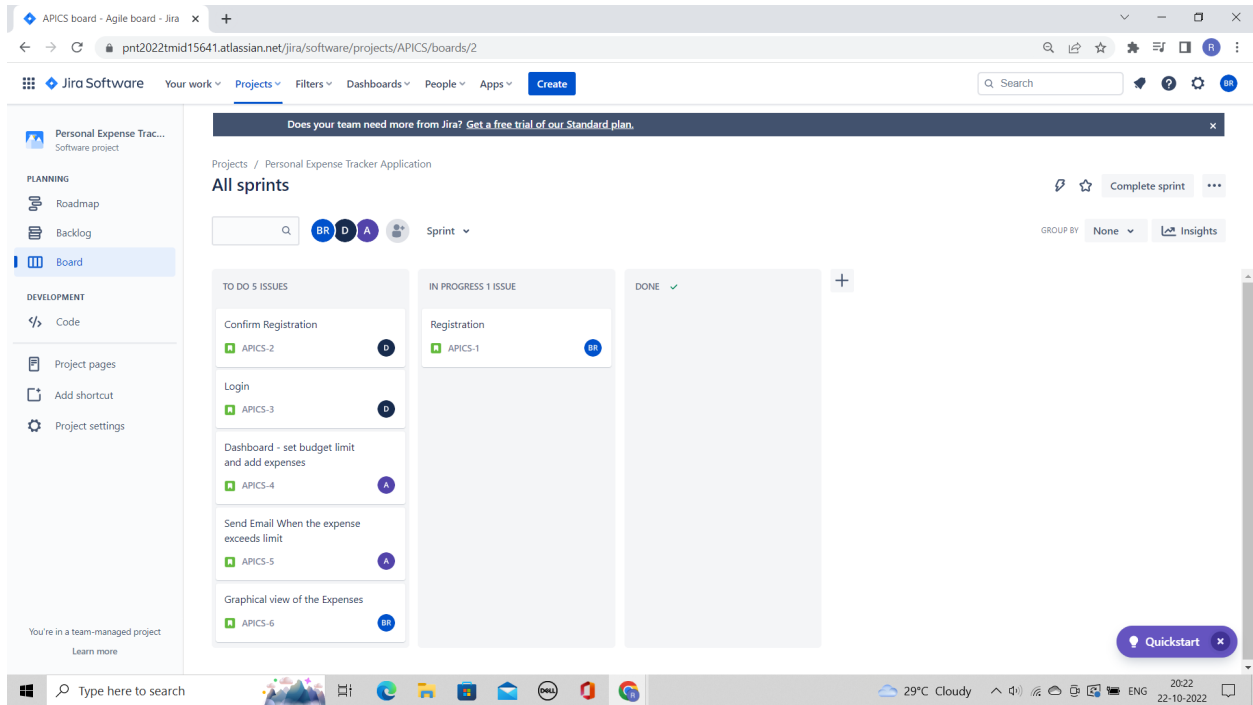
6.2 Sprint Delivery Schedule

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 Story Points	Duration	Sprint Start Date	Sprint End Date (Plan
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022

6.3 Reports from JIRA

The screenshot shows the Jira Software interface for the 'Personal Expense Tracker Application' project. The left sidebar contains navigation options: Planning (Roadmap, Backlog, Board), Development (Code), Project pages, Add shortcut, and Project settings. The main content area is titled 'Backlog' and displays a list of sprints. The first sprint, 'APICS Sprint 1' (24 Oct - 29 Oct), is expanded, showing three issues: 'APICS-1 Registration' (In Progress), 'APICS-2 Confirm Registration' (To Do), and 'APICS-3 Login' (To Do). The second sprint, 'APICS Sprint 2' (31 Oct - 5 Nov), has one issue. The third sprint, 'APICS Sprint 3' (7 Nov - 12 Nov), has one issue. The fourth sprint, 'APICS Sprint 4' (14 Nov - 19 Nov), has one issue. A 'Quickstart' button is visible at the bottom right.



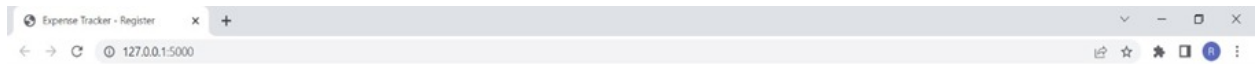
7.CODING & SOLUTIONING (Explain the features added in the project along with code)

7.1 REGISTER PAGE

```
File Edit Selection View Go Run Terminal Help
register.html - Personal Expense Tracker - Visual Studio Code

EXPLORER
PERSONAL EXPENSE TRAC...
  > _pycache_
  > images
  > static
  templates
    .gitignore
    AddExpense.html
    header.html
    history.html
    home.html 2
    index.html
    login.html
    month.html
    register.html
    sendgrid.env
    today.html
    year.html
    .env
    .gitignore
    app.py
    DigiCertGlobalRootC...

templates > register.html > html
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
16 <body>
17
18   <form action="{ { url_for('addrec') }}" class="form" method="POST">
19     <div class="title">Register</div>
20     <div class="input-container ic1">
21       <input id="name" class="input" type="text" name="name" placeholder=" " />
22       <div class="cut"></div>
23       <label for="name" class="placeholder">Name</label>
24     </div>
25     <div class="input-container ic2">
26       <input id="email" class="input" type="email" name="email" placeholder=" " />
27       <div class="cut"></div>
28       <label for="email" class="placeholder">Email</label>
29     </div>
30     <div class="input-container ic2">
31       <input id="phone" class="input" type="text" name="phone" placeholder=" " />
32       <div class="cut"></div>
33       <label for="phone" class="placeholder">Phone</label>
34     </div>
35     <div class="input-container ic2">
36       <input id="password" class="input" type="password" name="password" placeholder=" " />
37       <div class="cut"></div>
38       <label for="password" class="placeholder">Password</label>
39     </div>
40   </form>
41
42 </body>
43 </html>
```



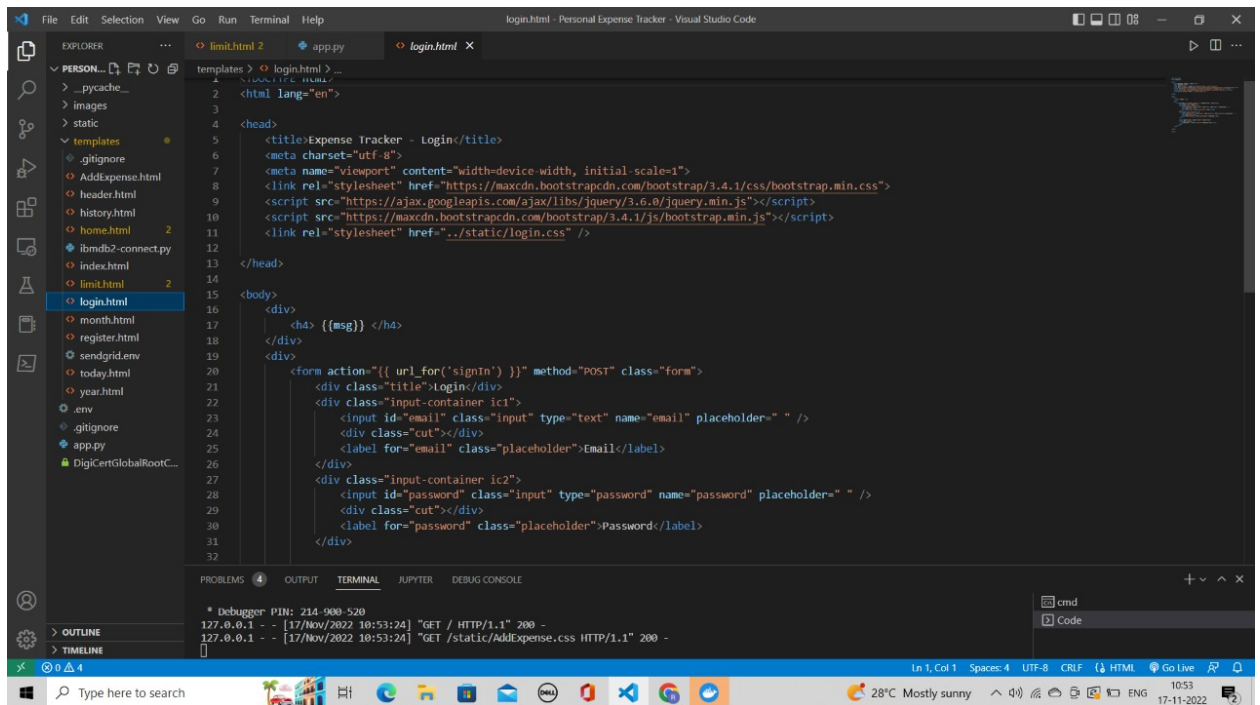
Register

Register

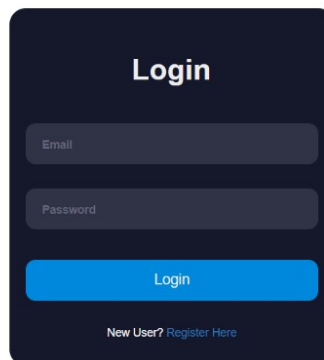
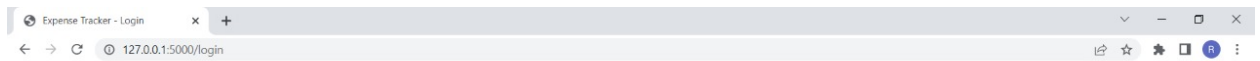
Already an user? [Login Here](#)



7.2 LOGIN PAGE



```
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     <h4> {{msg}} </h4>
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     </div>
32   </div>
```



Login

Email

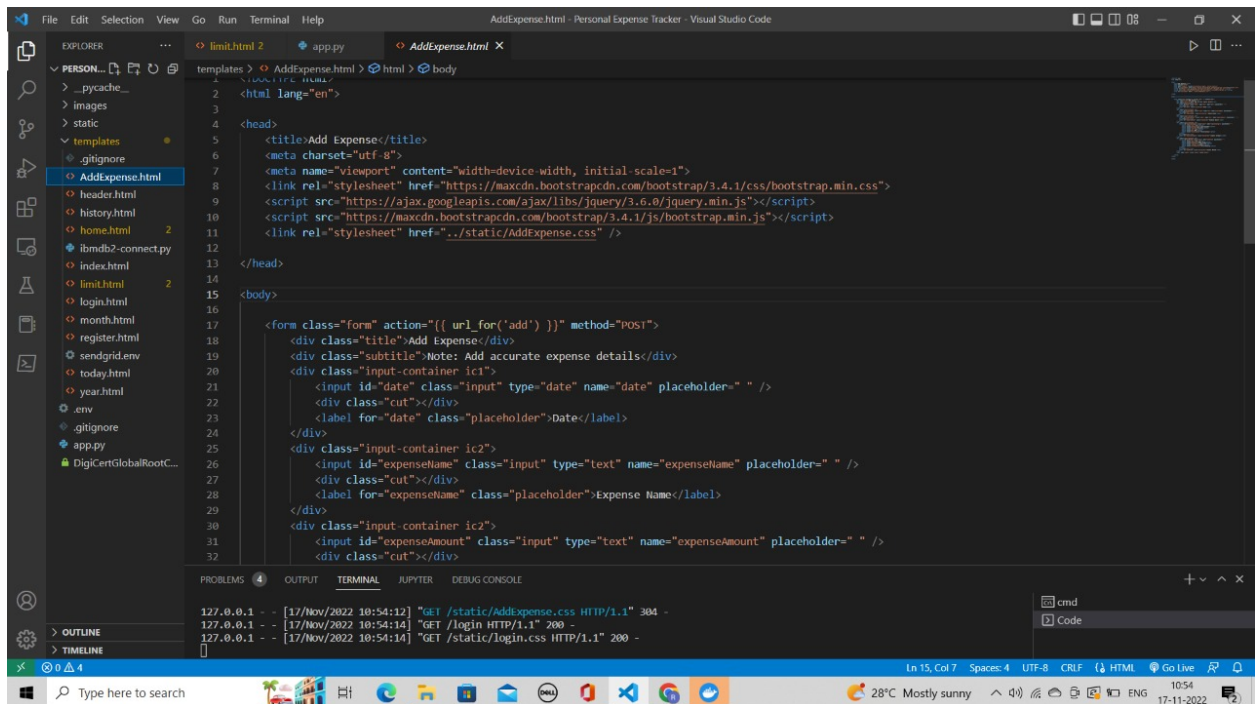
Password

Login

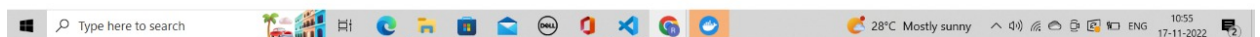
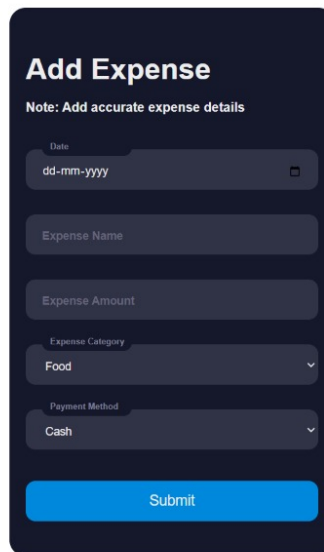
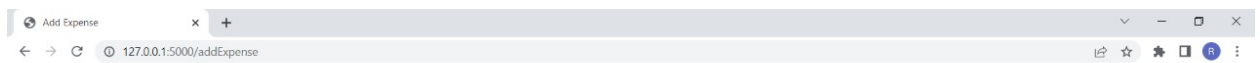
New User? Register Here



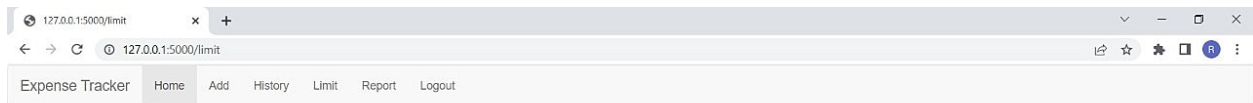
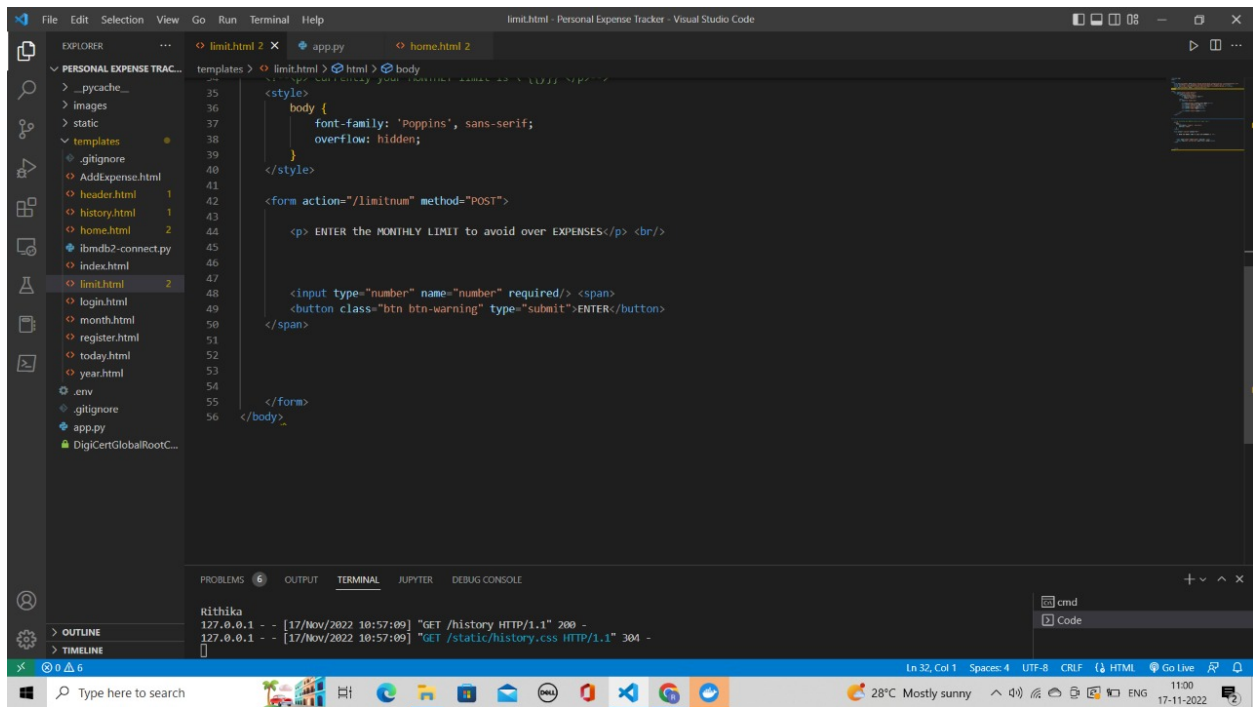
7.3 ADD EXPENSE PAGE



```
1 <DOCTYPE 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>
33   </form>
34 </body>
35 </html>
```



7.4 HISTORY



7.6 REPORT

Visual Studio Code interface showing the file explorer on the left with the 'templates' folder expanded. The 'today.html' file is selected and its content is displayed in the editor. The code defines a navigation bar with links for Home, Add, History, Limit, and a dropdown menu for Today, Month, and Year. The terminal at the bottom shows HTTP requests and responses.

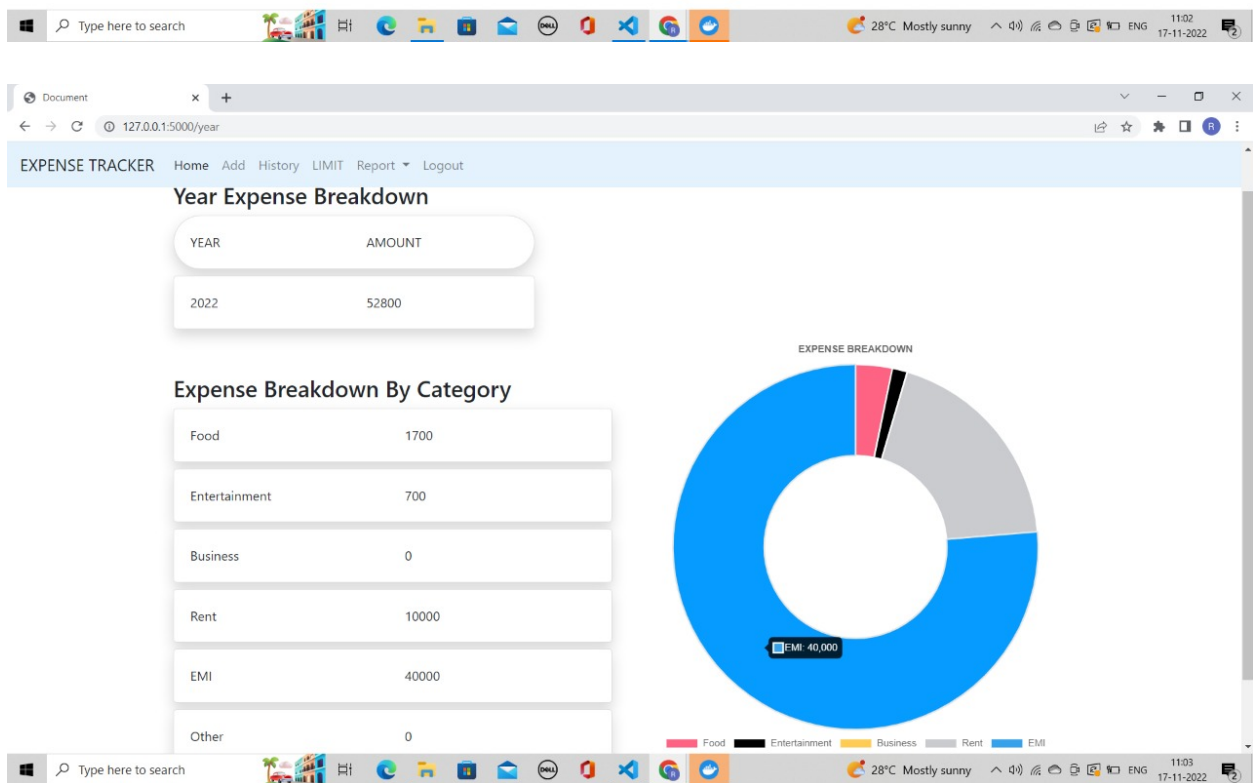
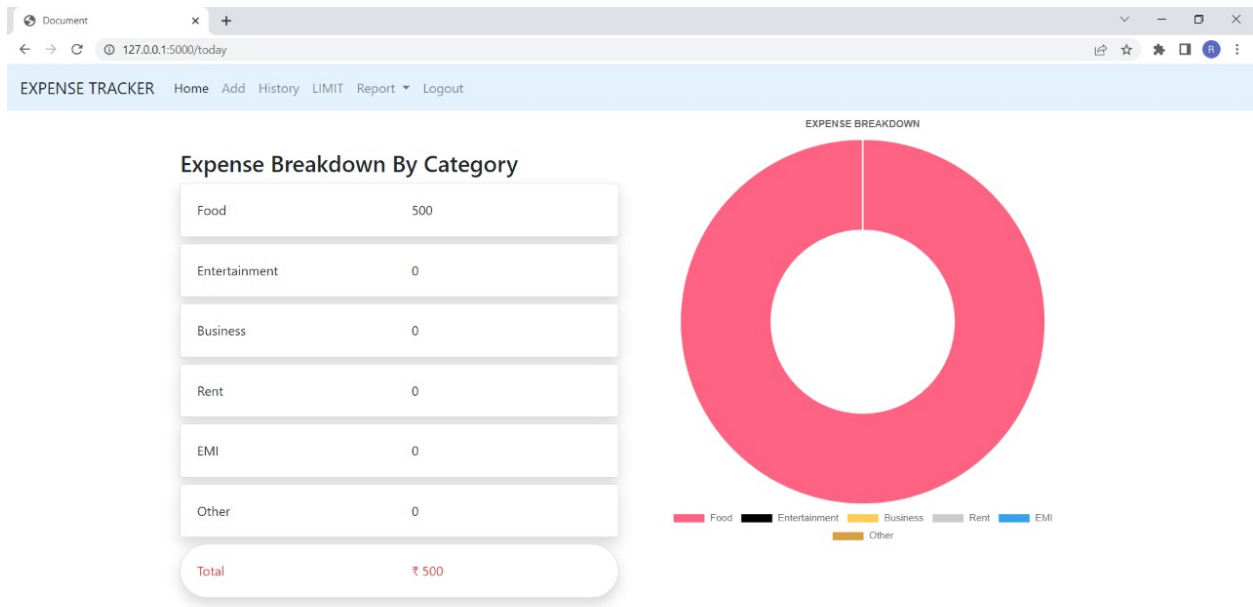
```
<body>
  <nav class="navbar sticky-top navbar-expand-lg navbar-light" style="background-color: #e3f2fd;">
    <a class="navbar-brand" href="#">EXPENSE TRACKER</a>
    <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarsSupportedContent" aria-controls="navbarsSupportedContent" aria-expanded="false" aria-label="Toggle navigation">
      <span class="navbar-toggler-icon"></span>
    </button>
    <div class="collapse navbar-collapse" id="navbarsSupportedContent">
      <ul class="navbar-nav mr-auto">
        <li class="nav-item active">
          <a class="nav-link" href="/home">Home <span class="sr-only">(current)</span></a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="/add">Add</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="/display">History</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="/limit">LIMIT</a>
        </li>
        <li class="nav-item dropdown">
          <a class="nav-link dropdown-toggle" href="#" id="navbardropdown" role="button" data-toggle="dropdown" aria-haspopup="true" aria-expanded="false">
            Report
          </a>
          <div class="dropdown-menu" aria-labelledby="navbardropdown">
            <a class="dropdown-item" href="/today">TODAY</a>
            <a class="dropdown-item" href="/month">Month</a>
            <a class="dropdown-item" href="/year">Year</a>
          </div>
        </li>
      </ul>
    </div>
  </nav>
</body>
```

127.0.0.1 - - [17/Nov/2022 11:00:49] "GET /static/history.css HTTP/1.1" 304 -
(1, datetime.date(2022, 11, 17), 'chocolate', '500', 'food', 'cash')
127.0.0.1 - - [17/Nov/2022 11:02:05] "GET /today HTTP/1.1" 200 -

Visual Studio Code interface showing the file explorer on the left with the 'templates' folder expanded. The 'month.html' file is selected and its content is displayed in the editor. The code defines a navigation bar with links for Home, Add, History, Limit, and a dropdown menu for Today, Month, and Year. The terminal at the bottom shows HTTP requests and responses.

```
<body>
  <nav class="navbar sticky-top navbar-expand-lg navbar-light" style="background-color: #e3f2fd;">
    <a class="navbar-brand" href="#">EXPENSE TRACKER</a>
    <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarsSupportedContent" aria-controls="navbarsSupportedContent" aria-expanded="false" aria-label="Toggle navigation">
      <span class="navbar-toggler-icon"></span>
    </button>
    <div class="collapse navbar-collapse" id="navbarsSupportedContent">
      <ul class="navbar-nav mr-auto">
        <li class="nav-item active">
          <a class="nav-link" href="/home">Home <span class="sr-only">(current)</span></a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="/add">Add</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="/display">History</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="/limit">LIMIT</a>
        </li>
        <li class="nav-item dropdown">
          <a class="nav-link dropdown-toggle" href="#" id="navbardropdown" role="button" data-toggle="dropdown" aria-haspopup="true" aria-expanded="false">
            Report
          </a>
          <div class="dropdown-menu" aria-labelledby="navbardropdown">
            <a class="dropdown-item" href="/today">TODAY</a>
            <a class="dropdown-item" href="/month">Month</a>
            <a class="dropdown-item" href="/year">Year</a>
          </div>
        </li>
      </ul>
    </div>
  </nav>
</body>
```

127.0.0.1 - - [17/Nov/2022 11:00:49] "GET /static/history.css HTTP/1.1" 304 -
(1, datetime.date(2022, 11, 17), 'chocolate', '500', 'food', 'cash')
127.0.0.1 - - [17/Nov/2022 11:02:05] "GET /today HTTP/1.1" 200 -



7.7 Database Schema (if Applicable)

IBM Db2 on Cloud

Load Data Load History **Tables** Views Indexes Aliases MQTs Sequences Application objects

Find schemas or tables Refresh

Tables New table +

Name	Schema	Properties
EXPENSE	DKH61031	...
LIMIT	DKH61031	...
USERS	DKH61031	...

Total: 3, selected: 0

Table definition

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

IBM Db2 on Cloud

Load Data Load History **Tables** Views Indexes Aliases MQTs Sequences Application objects

Find schemas or tables Refresh

Schemas

Name	Type	Tables
DKH61031	User	3

Total: 1, selected: 1

Tables New table +

Name	Schema	Properties
EXPENSE	DKH61031	...
LIMIT	DKH61031	...
USERS	DKH61031	...

Total: 3, selected: 0

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 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

- i. Tracking income and expenses:** Monitoring the income and tracking all expenditures (throughbank accounts, mobile wallets, and credit & debit cards).
- ii. Transaction Receipts:** Capture and organize your payment receipts to keep track of your expenditure.
- iii. Organizing Taxes:** Import your documents to the expense tracking app, and it will streamline your income and expenses under the appropriate tax categories.
- iv. Payments & Invoices:** Accept and pay from credit cards, debit cards, net banking, mobile wallets, and bank transfers, and track the status of your invoices and bills in the mobile app itself. Also, the tracking app sends reminders for payments and automatically matches the payments with invoices.
- v. Reports:** The expense tracking app generates and sends reports to give a detailed insight about profits, losses, budgets, income, balance sheets, etc.,
- vi. Ecommerce integration:** Integrate your expense tracking app with your E-commerce store and track your sales through payments received via multiple payment methods.

vii. Vendors and Contractors: Manage and track all the payments to the vendors and contractors added to the mobile app.

viii. Access control: Increase your team productivity by providing access control to particular users through custom permissions.

ix. Track Projects: Determine project profitability by tracking labor costs, payroll, expenses, etc., of your ongoing project.

x. Inventory tracking: An expense tracking app can do it all. Right from tracking products or the cost of goods, sending alert notifications when the product is running out of stock or the product is not selling, to purchase orders.

xi. In-depth insights and analytics: Provides in-built tools to generate reports with easy-to-understand visuals and graphics to gain insights about the performance of your business.

xii. Recurrent Expenses: Rely on your budgeting app to track, streamline, and automate all the recurrent expenses and remind you on a timely basis.

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:

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 track 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 aware them about there daily expenses. It will prove to be helpful for the people who are frustrated with their daily budget management, irritated because of 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 enhancement 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 platform easily.

13. APPENDIX

1.GitHub Link

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

2.Project Demo Link

https://drive.google.com/file/d/1XWa5U5TT_-FZJPc85c7C_JX9tQXih-uY/view?usp=sharing

