

# **RMK ENGINEERING COLLEGE**

**(An Autonomous Institution)**

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

## **PROJECT**

### **PERSONAL EXPENSE TRACKER**

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**DONE BY**

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# 1. INTRODUCTION

## a. Project Overview

In this project we propose an application known as “Income and Expense Tracker” which is helpful to manage out income and expense as an daily or periodically or else whenever we want to remind .

It also act as an indicator or reminder example in the fastest world which we can't able to remember what are the things we have to do for the end of month and what are the payments we have to pay for the particular month.

Due to some conflict or some other stress we forget what the income or where the money has to come from or what the payments we have to pay.

## b. Purpose

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.

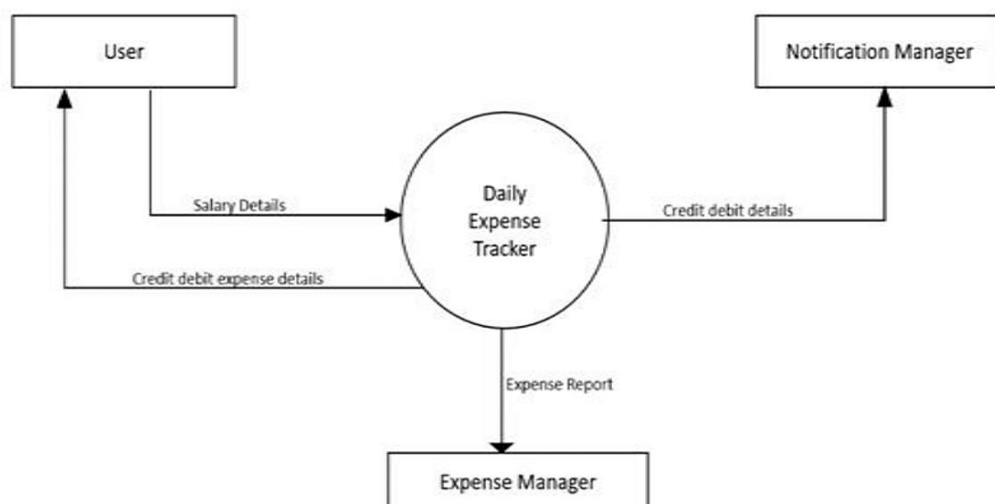
This will then help you design a befitting strategy of getting out of debt.

## 2. LITERATURE SURVEY

### a. Existing problem

When a gets their salary, they can add that to the daily expense manager. Then after adding their salary details, the user can expense manager store all the details. If the user wants all the credit and debit details, they can get it through the Expense Tracker.

The notification Manager also reminds us about credit and debit points after updating the salary.

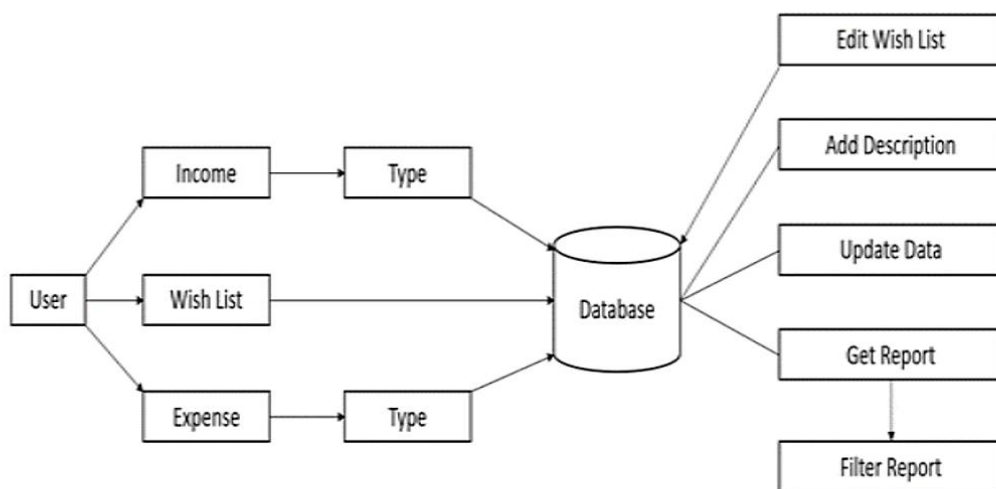


**In this proposed System,**

Users are provided with three data entry options: Income, expenses and Wish List. If you select income or payment, you will be supplied with its types and sub types.

For the wish list, only items can be inserted. This information would be saved into the database by their particular classification. The saved data can later be changed if the user needs to do as such.

Altering here means adding descriptions, changing wish lists, updating data etc. Users can also view the result. They can also filter to see the required content only.



## b. References

- [1] Y. Anitha, R. Ranjini, S. Gomathi, “Easy App for Expenses Manager Using Android”, International Journals of Computer Techniques, Volume: 3 Issue: 2, ISSN: 2394-2231 (MarchApril 2016).
- [2] N. ZahiraJahan MCA., M. Phil, K. I. Vinodhini, “Personalized Expense Managing Assistant Using Android”, International Journals of Computer Techniques (IJCT), Volume: 3 Issue: 2, ISSN: 2394-2231 (March-April 2016).
- [3] Online Income and Expense Tracker S. Chandini<sup>1</sup>, T. Poojitha<sup>2</sup>, D. Ranjith<sup>3</sup>, V.J.Mohammed Akram<sup>4</sup>, M.S. Vani<sup>5</sup>, V. Rajyalakshmi<sup>J</sup>. Freckling, Ed.,

The Analysis of Directional Time Series: Applications to Wind Speed and Direction, set. Lecture Notes in Statistics. Berlin, Germany: Springer, 1989, vol. 61.

[4] Expense Tracker ATIYA KAZI<sup>1</sup>, PRAPHULLA S. KHERADE<sup>2</sup>, RAJ S. VILANKAR<sup>3</sup>, PARAG M. SAWANT<sup>4</sup> 1 Professor, Department of Information Technology, Finale Academy of Management and Technology, Ratnagiri, Maharashtra, India. 2, 3, 4 Department of Information Technology, Finale Academy of Management and Technology, Ratnagiri, Maharashtra, India

[5] Expense Tracker : A Smart Approach to Track Everyday Expense  
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R. E. Sorace, V. S. Reinhardt, and S. A. Vaughn, "High-speed digital-to-RF converter," U.S. Patent 5 668 842, Sept. 16, 1997.

[6] (2002) The IEEE website. [Online]. Available: <http://www.ieee.org/>

[7] P. Dhanapal, Mohammed Yaseen Patel, T. P. Lokesh Raj and J. Satheesh Kumar, "Income and Expense Tracker", Indian Journal of Science and Technology, Vol 8(S2), ISSN: 0974-5645 (January 2014). [5] Girlish Buckaroo and Sameer Sunhaloo, "Intelligent Online Budget Tracker", Computer Science and IT Education Conference (2014).

[8] <http://oaji.net/articles/2017/1948-1513926576.pdf>

[9] Scrum Methodology & Agile Scrum Methodologies

[10] <http://www.appbrain.com/app/expensemanager/com.expense.manager>

[11] <http://expense-manager.com/how-expensesoftware/>

[12] <https://www.splitwise.com/terms>

[13] Textbook-Data Mining: Concepts and Techniques (3rd Edition) by J. Han, M. Kamber, and J. Pei -- Morgan Kaufman Pub l. 2012 ISBN: 978-0-12-381479-1 [8] IEEE Transactions on software engineering, vol. 31, No. 3, March 2005 [7] R. Pressman, software engineering A practitioner's approach. Fifth edition McGraw-Hill, 2001.

[14] S. Chadian, T. Rojthani, D. Ranjith, V. J. Mohammed Akram, M. S. Vani, V. Rajyalakshmi, "Online Income and Expense Tracker", International Research Journal of Engineering and Technology (IRJET),

## **Problem Statement Definition**

A Personal Expense Tracker is a kind of digital diary that helps keep an eye on our money-related transitions. It provides all financial activities report daily, weekly, monthly and yearly.

Users get notifications to record expenses and incomes that are helpful to the tracking system of the application. The user interface of the Personal Expense Tracker is straightforward and attractive, so it is easy to understand and the best way to record our financial data.

All the financial decisions and activities you make cannot keep track of. This app makes your life easier by helping you to manage your finances efficiently.

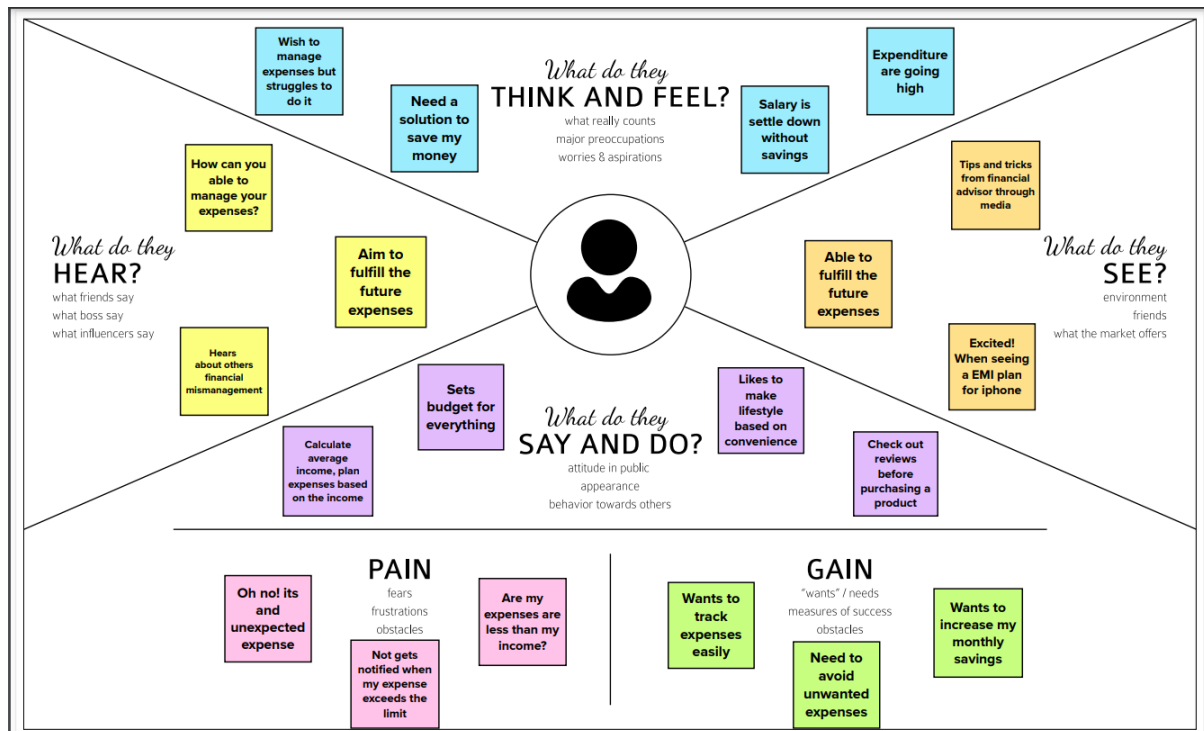
A personal finance app will help you with budgeting and accounting and give you helpful insights about financial management.

## **3. IDEATION & PROPOSED SOLUTION**

### **a. Empathy Map Canvas**

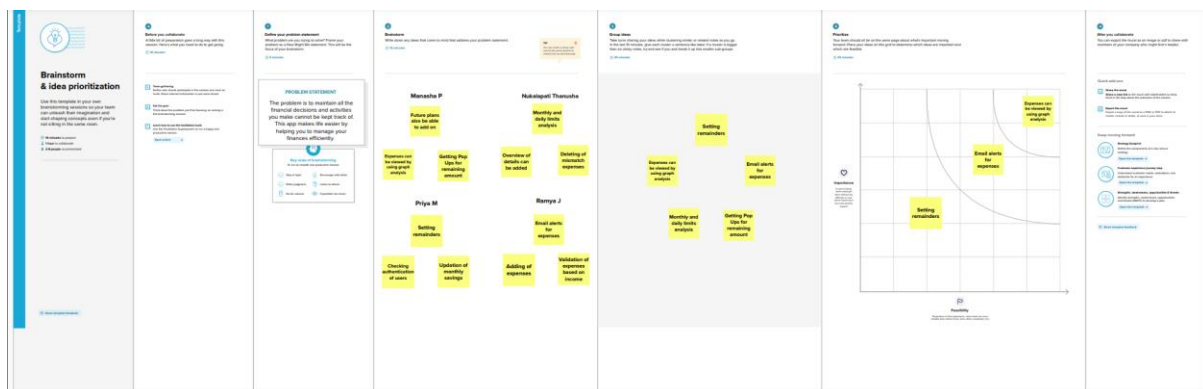
An empathy map is used to gain deeper insights on the customer's interaction with the system. It gives an idea on what the user feels and experiences while using the system, what fears the user has respective to the system, etc.

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.



## b. Ideation & Brainstorming

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



## c. Proposed Solution

Users are provided with three data entry options: Income, expenses and Wish List. If you select income or payment, you will be supplied with its types and sub types.



For the wish list, only items can be inserted. This information would be saved into the database by their particular classification.

The saved data can later be changed if the user needs to do as such. Altering here means adding descriptions, changing wish lists, updating data etc.

Users can also view the result. They can also filter to see the required content only.

**Project Design Phase-I**  
**Proposed Solution**

Date	05 October 2022
Team ID	PNT2022TMID16287
Project Name	Personal Expense Tracker Application
Maximum Marks	2 Marks



**Proposed Solution:**

SL. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	<ul style="list-style-type: none"><li>➤ People now a days find difficult to manage their expenses.Also, they are not aware of their expenditure.</li><li>➤ People fail to manage their finances efficiently like they are unaware of their lavishness.</li></ul>
2.	Idea / Solution description	<ul style="list-style-type: none"><li>➤ The project will provide a way to analyse the expenses of a person and will help in budgeting and accounting.In addition to that it will also provide the helpful insights about money management.</li></ul>
3.	Novelty / Uniqueness	<ul style="list-style-type: none"><li>➤ The expenses of a person will be collected and provide money management suggestions based on his/her expenses.</li><li>➤ Also, notifications will be sent to the person via SMS and mail if he has reached the set limit.</li></ul>
4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"><li>➤ The impact will be that the person will be able to manage his/her finance efficiently.</li><li>➤ The suggestions provided for the efficient budgeting will be helpful to cut down the unnecessary financing.</li></ul>
5.	Business Model (Revenue Model)	See below
6.	Scalability of the Solution	<ul style="list-style-type: none"><li>➤ The project will be having the Python Flask for the development of the backend, which makes it easy to run on any web browsers and it will be efficient for the collection of data from the user side.</li><li>➤ The server IBM Cloud will be used for making it work without any slow loading or delay of the prediction of the website.</li></ul>

## d. 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	<b>1. CUSTOMER SEGMENT(S)</b> Who is your customer?  • Every Person is our customer because everyone wants to track their personal expenses on what they are spending daily.  • In order to track our daily expenses, we need a personal expense tracker in that case everyone who wants to know their expenses will be our customers.	<b>6. CUSTOMER CONSTRAINTS</b> What constraints prevent your customers from taking action or limit their choices of solutions? i.e.,  • The major constraint for the customer is that to find a suitable application, they need to make an analysis of the amount spending every single time.  • In simple words, the number of customers are willing to track their expenses 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.	<b>5. AVAILABLE SOLUTIONS</b> 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?  Websites and Applications for Personal expense tracking is available, but the problem is that in most of the applications we can't create separate track for different types of expenses. Even if some are available, they are not that effective in predicting the expenses effectively for the user.	Explore AS, differentiate	
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> 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 effectively and easily track the daily expenses we are spending.	<b>9. PROBLEM ROOT CAUSE</b> What is the real reason that this problem exists? What is the back story behind the need to do this application?  • The expenses that we are spending are not known by us explicitly. As a reason, the users are confused about which application will be suitable for them to recognize correctly for a smooth process.  • In today's busy life people are failed to track their expenses correctly and orderly because they are multiple works to do from time to time.  • This makes a person to be stressed and confused about how much they spend. This leads the user to choose the personal expense tracker to track their expenses effectively and efficiently.	<b>7. BEHAVIOUR</b> What does your customer do to address the problem and get the job done?  • The primary reason of address is the problem by going to each application/website and checking the result on recognizing the expenditure that are been set by the users in that application for making the user's operation easier.		
Focus on J&P, tap into BE, understand RC	<b>3. TRIGGERS</b> What triggers customers to act? i.e., seeing their neighbor using a personal expense tracker to easily maintain the expenses.  The benefits got by other users are triggering the individuals to make them try the application that is used by the other user. This allows them to ensure effective and reliable approaches for recognition and make their operations easier.	<b>10. YOUR SOLUTION</b> 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.  • The project focuses on tracking the daily expenses of the users and comparing them with the daily limit which was set by the user and preparing an analysis that results in the overall prediction of the expenses for the users.  • The project will provide a way to analyze the expenses spent by the users and will compare them with the limit set by the user and will provide the overall prediction analysis of the expenses that will be helpful for the users.	<b>8. CHANNELS of BEHAVIOUR</b> <b>8.1 ONLINE</b> 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 recognize expenses effectively and correctly.  <b>8.2 OFFLINE</b> What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.  The offline way of recognizing personal expenses is not similar to that of the online one as the manual way is time-consuming and not effective in recognition. This will lead to a lot of stress among the users as it takes a lot of time and effort.	Focus on J&P, tap into BE, understand RC	
	<b>4. EMOTIONS: BEFORE / AFTER</b> How do customers feel when they face a problem or are confused about calculating their daily or monthly expenses? • The users are very much worried about how to calculate their daily, weekly, or yearly, which leads to making a false calculations about their money.  After the issue has been solved with the help of the application, the users are confident in selecting the right way to track their expenses correctly and effectively. It makes their process may easier.	<b>Extract online &amp; offline CH of BE</b>			

## 4. REQUIREMENT ANALYSIS

### a. Functional requirement

Functional Requirements specify the features and functions of the proposed system.

IDENTIFIER	REQUIREMENTS
1. Add transaction	This application will allow adding transaction.
2 Delete transaction	This application will allow the deleting transactions.
3 Amount spent in categories	This application will allow adding the amount spent in a particular category.
4 View all transactions	This application will allow viewing all previous transactions.
5 Total amount	This application will allow seeing the total amount, the amount spent in different categories and balance left.
6 Overview	This application will allow viewing overall transactions.
7 Graph representation	This application will show the graph which will help the users to visualize the budget.
8 Pie representation	This application will show the pie.
9 Bar representation	This application will show the bar.
10 Change background	This application has the option to change the background.
11 Passcode	This application has the option to set a passcode for security.
12 Add multiple accounts	This application has the option of creating multiple accounts for the users
13 Transaction time/date	This application has the ability to show the transaction time along with the date on which it was created.
14 Currency symbol	This application has many currency symbols as per user requirements.
15 Reminder	This application has the option to set a reminder to make the transaction.
16 Delete account	This application will generate PDF reports of the 5.transactions.
17 PDF report	This application has the option to view and filter transactions by day, month and year.
18 Note	This application has the option to add a note about income and expenses.

## b. Non-Functional requirements

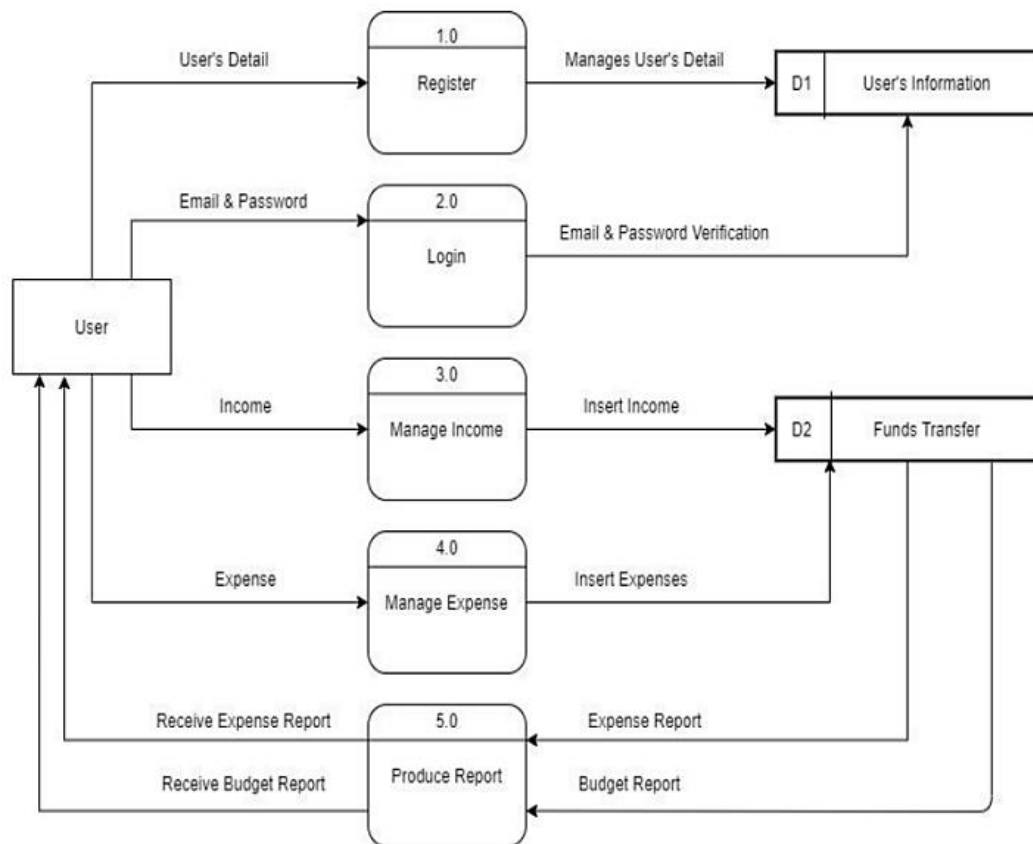
Non functional requirements specify the general properties of the proposed system.

<b>NF R N o.</b>	<b>Non- Functional Requir ement</b>	<b>Description</b>
NF R-1	<b>Usability</b>	The Application keeps an accurate record of the user's income and expenses.
NF R-2	<b>Security</b>	A detailed accounting of the user's income and expenses.
NF R-3	<b>Performance</b>	Because of lightweight database support, the system's throughput is increased.
NF R-4	<b>Availability</b>	The application must be completely operational at all times.
NF R-5	<b>Scalability</b>	The application must always function in its entirety.

## **5. PROJECT DESIGN**

### **a. Data Flow Diagrams**

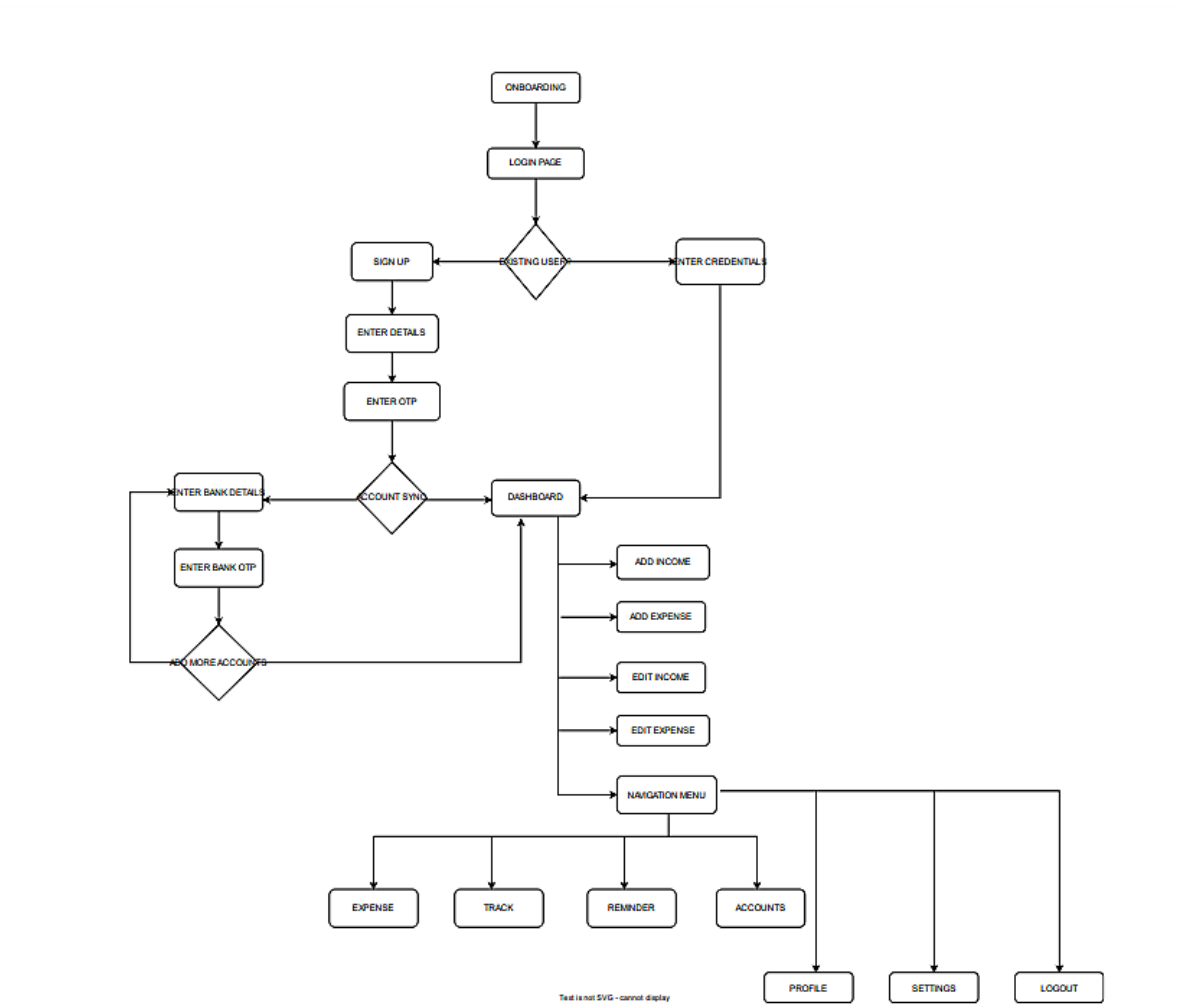
A data flow diagram or DFD(s) maps out the flow of information for any process or system. DFDs help you better understand process or system operation to discover potential problems, improve efficiency, and develop better processes.



## b. Solution & Technical Architecture

### Solution Architecture:

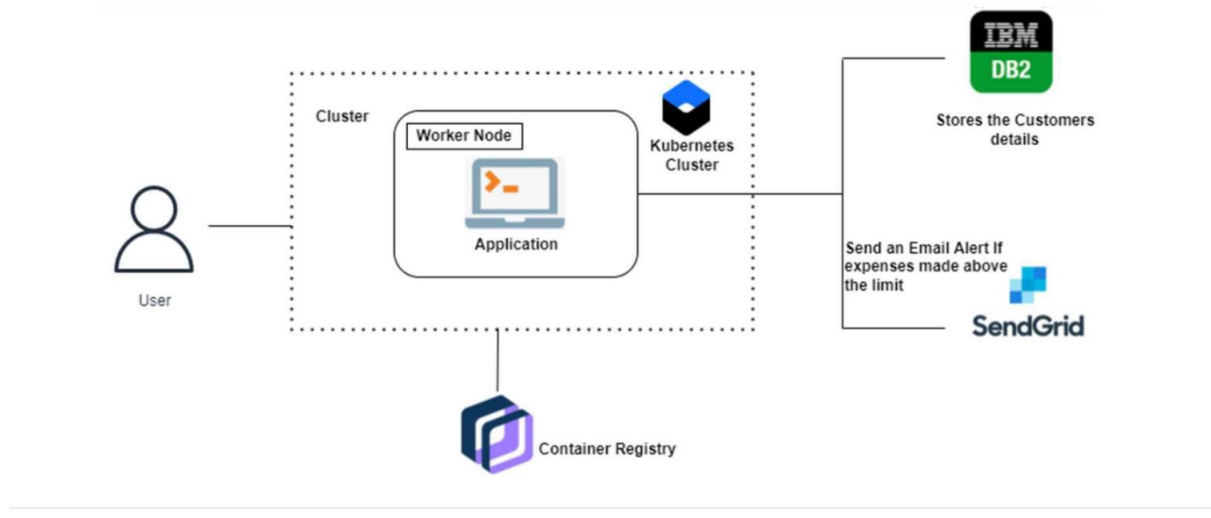
Solution architecture is the process of developing solutions based on predefined processes, guidelines and best practices with the objective that the developed solution fits within the enterprise architecture in terms of information architecture, system portfolios, integration requirements, etc.



## Technical Architecture:

Technical architecture involves the development of a technical blueprint regarding the arrangement, interaction, and interdependence of all elements so that system-relevant requirements are met.

## Technology Architecture:



S.No	Component	Description	Technology
1.	User Interface	User interacts with application e.g. Web App, Chatbot etc.	HTML, CSS, JavaScript
2.	Application Logic-1	Logic for a process in the application	Flask-Python
3.	Cloud Database	Database Service on Cloud	IBM DB2
4.	File Storage	File storage requirements	IBM Object Storage, Containerregistry
5.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	IBM Cloud , Kubernetes.

### a. 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.

<b>User Story Number</b>	<b>User Story / Task</b>
USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.
USN-2	As a user, I will receive confirmation email once I have registered for the application
USN-3	As a user, I can log into the application by entering email & password

USN-1	Workspace for personal expense tracking
USN-2	Creating various graphs and statistics of customer's data
USN-3	Linking database with dashboard
USN-4	Making dashboard interactive with JS
USN-1	Wrapping up the server side works of frontend
USN-2	Creating Chatbot for expense tracking and for clarifying user's query

## **6. PROJECT PLANNING & SCHEDULING**

### **a. 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.

## Project Planning Phase

### Sprint Delivery Plan

<b>Date</b>	01 November 2022
<b>Team ID</b>	PNT2022TMID16287
<b>Project Name</b>	Personal Expense Tracker Application
<b>Maximum Marks</b>	8 Marks

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

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint 1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Manasha P
		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Nukalapati Thanusha
	Login	USN-3	As a user, I can log into the application by entering email & password	1	High	Priya M

Dashboard	USN-4	Logging in takes to the dashboard for the logged user.	2	High	Ramya J
Bug fixes, routine checks and improvisation by everyone in the team *Intended bugs					

<b>Sprint 2</b>	Workspace	USN-1	Workspace for personal expense tracking	2	High	Manasha P
	Charts	USN-2	Creating various graphs and statistics of customer's data	1	Medium	Nukalapati Thanusha
	Connecting to IBM DB2	USN-3	Linking database with dashboard	2	High	Priya M
		USN-4	Making dashboard interactive with JS	2	High	Ramya J
<b>Sprint-3</b>		USN-1	Wrapping up the server side works of frontend	1	Medium	Manasha P
	Watson Assistant	USN-2	Creating Chatbot for expense tracking and for clarifying user's query	1	Medium	Nukalapati Thanusha
	SendGrid	USN-3	Using SendGrid to send mail to the user about their expenses	1	Low	Priya M
		USN-4	Integrating both frontend and backend	2	High	Ramya J

Bug fixes, routine checks and improvisation by everyone in the team *Intended bugs only						
<b>Sprint-4</b>	Docker	USN-1	Creating image of website using docker/	2	High	Priya M
	Cloud Registry	USN-2	Uploading docker image to IBM Cloud registry	2	High	Manasha P
	Kubernetes	USN-3	Create container using the docker image and hosting the site	2	High	Nukalapati Thanusha
	Exposing	USN-4	Exposing IP/Ports for the site	2	High	Ramya J

## b. 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.

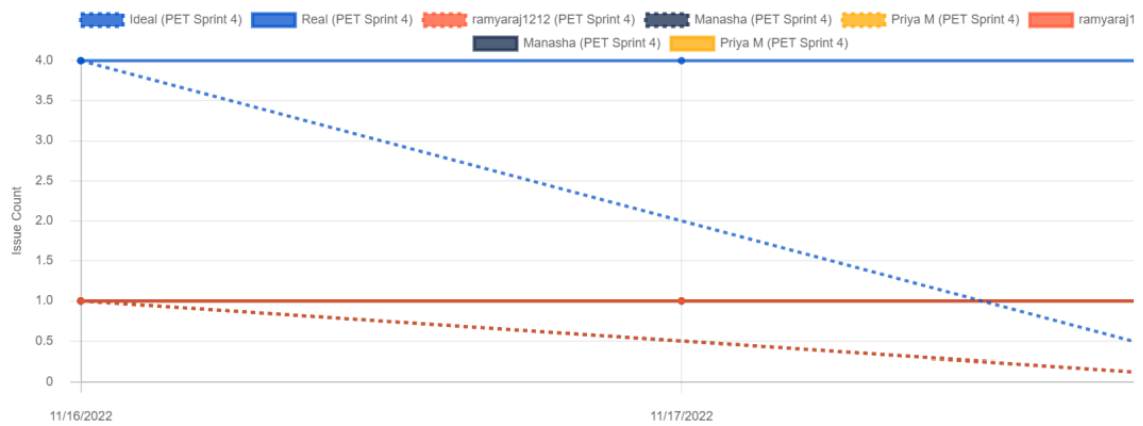
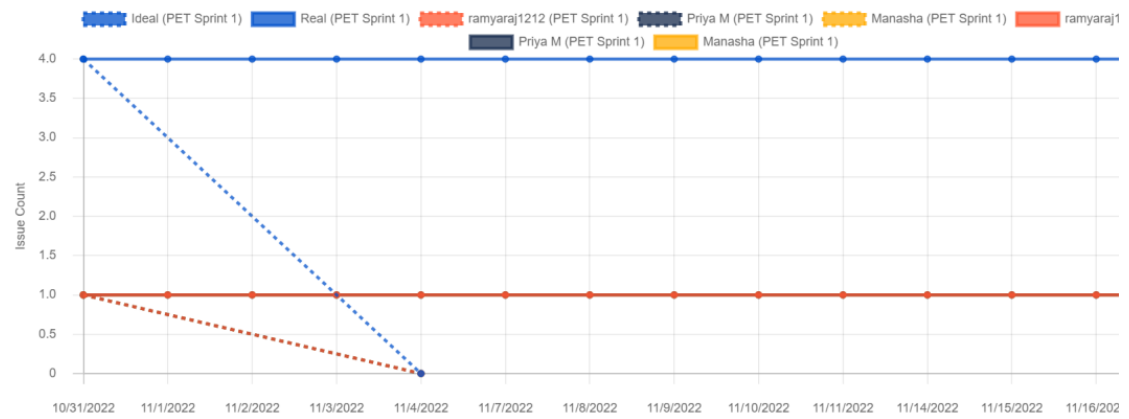
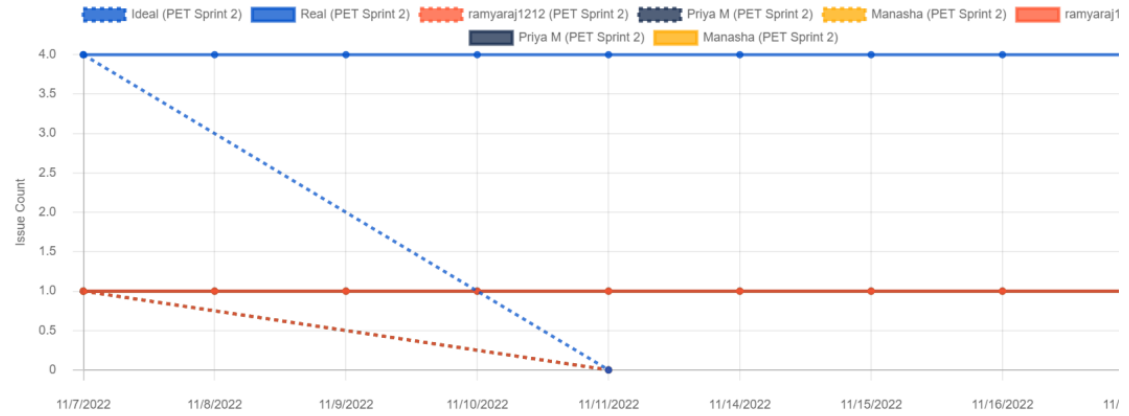
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	20 Oct 2022	25 Oct 2022	20	26 Oct 2022
Sprint-2	20	6 Days	28 Oct 2022	02 Nov 2022	20	02 Nov 2022
Sprint-3	20	6 Days	05 Nov 2022	11 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

#### Velocity:

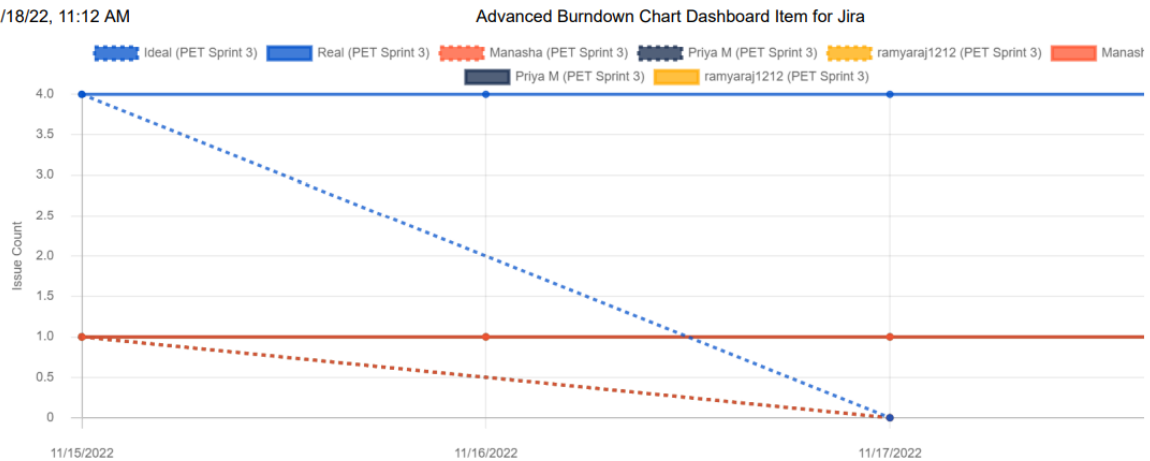
Imagine we have a 10- days sprint duration and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

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

	Initial Estimate	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct
Sprint Number	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
<b>Sprint-1</b>	20	0	10	5	3	1	1
<b>Sprint-2</b>	20	2	10	4	1	1	2
<b>Sprint-3</b>	20	5	5	5	5	0	0
<b>Sprint-4</b>	20	3	3	3	3	3	5
<b>Task planned</b>	7	6	5	4	3	2	1
<b>Task Actual</b>	7	5.5	6	4	2	1.5	1



11/18/22, 11:12 AM



## c. Reports from JIRA

### Backlog:

A backlog is a list of issues that's related to the project and the functions of the system. It makes it simple to make, store, manage a variety of problems including the ones the team is working on.

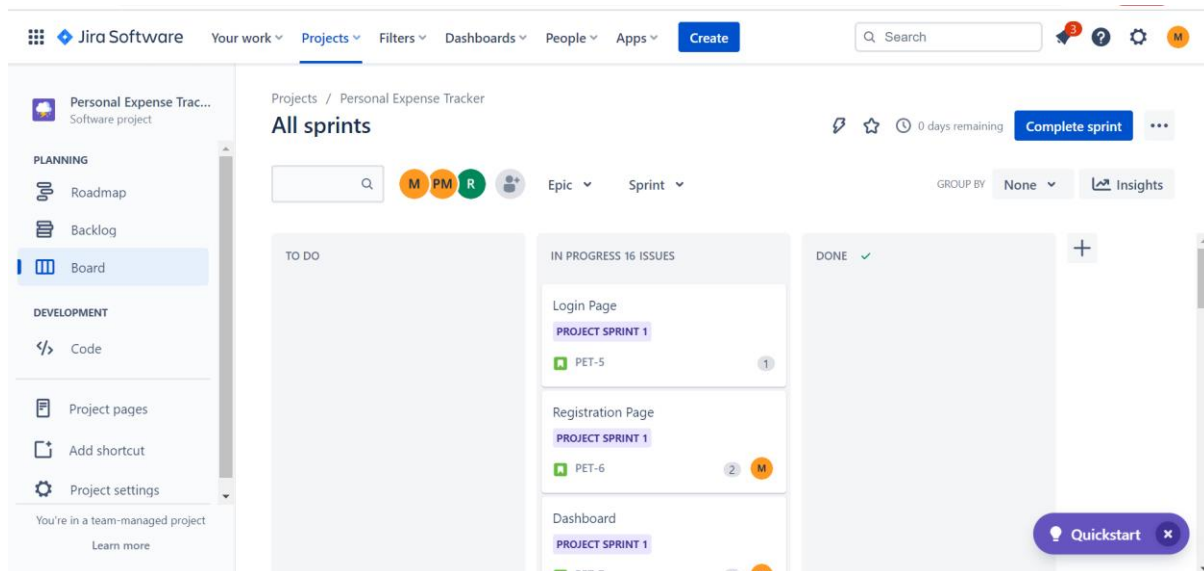
The screenshot shows the Jira Software interface for the 'Personal Expense Tracker' project. The left sidebar contains navigation options: 'PLANNING' (Roadmap, Backlog, Board) and 'DEVELOPMENT' (Code, Project pages, Add shortcut, Project settings). The main area displays the 'Backlog' for 'PROJECT SPRINT 1' (30 Oct - 5 Nov) and 'PROJECT SPRINT 2' (6 Nov - 11 Nov). Issues are listed with their IDs, titles, and status (e.g., 'IN PROGRESS'). A 'Quickstart' button is visible in the bottom right corner.

Sprint	Issue ID	Issue Title	Status	Assignee
PROJECT SPRINT 1 (30 Oct - 5 Nov)	PET-5	Login Page	IN PROGRESS	PM
	PET-6	Registration Page	IN PROGRESS	M
	PET-7	Dashboard	IN PROGRESS	PM
	PET-24	Flask installation	IN PROGRESS	R
PROJECT SPRINT 2 (6 Nov - 11 Nov)	PET-10	Workspace	IN PROGRESS	M

### Board:

A board reflects your team's process, tracking the status of work. The columns on the board represent the status of your team's issues.

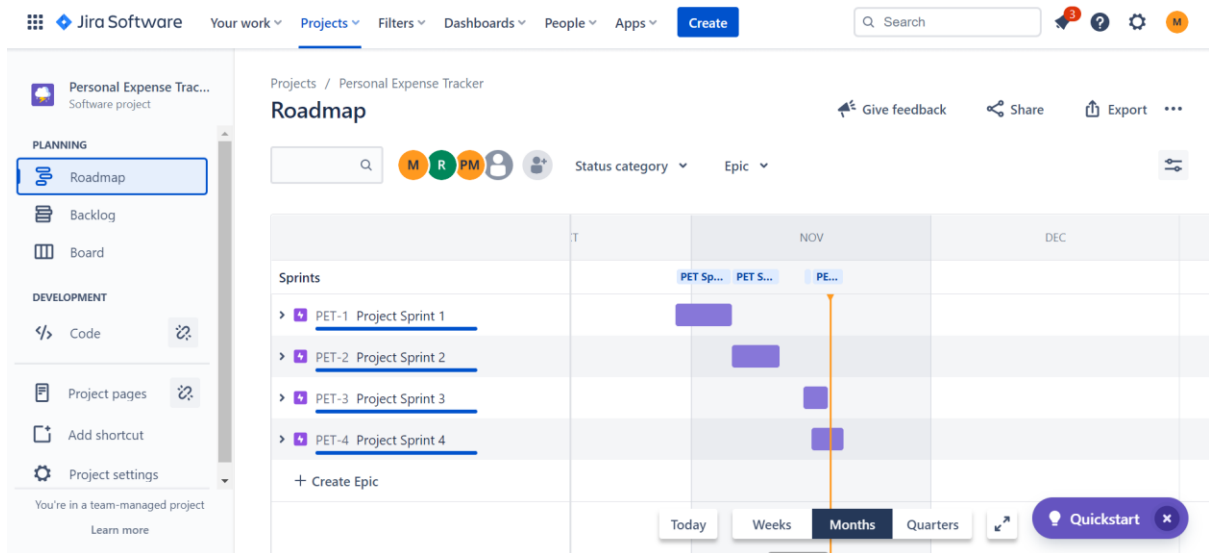
The visual representation of the work helps in discussing and tracking of the progress of the project from start to finish.



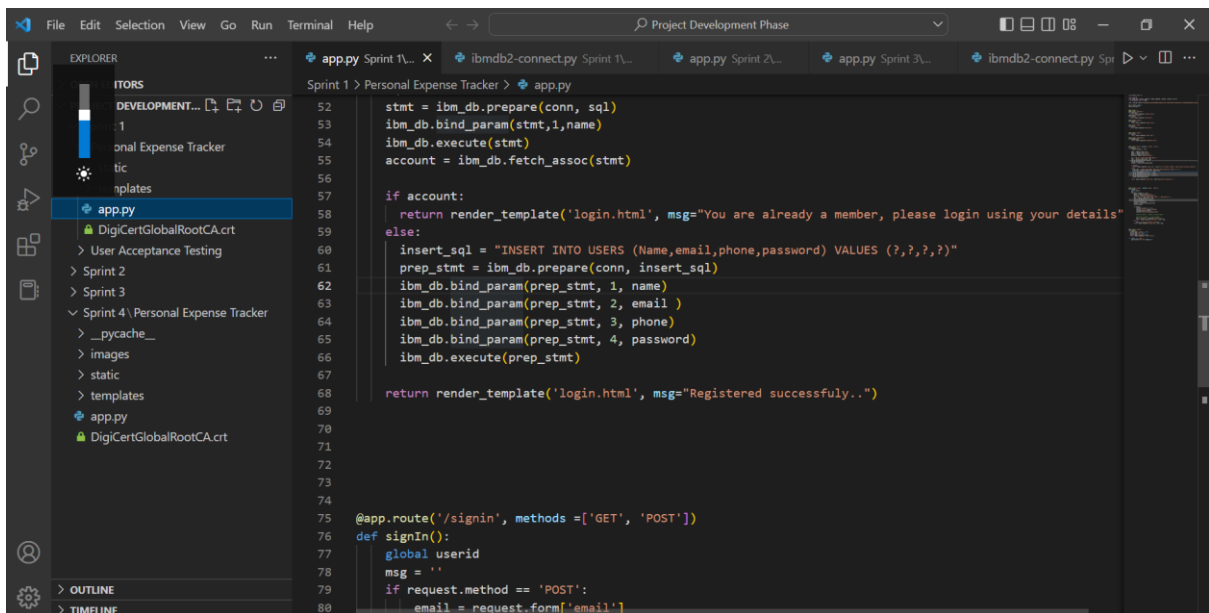
## Roadmap:

A roadmap offers quick and easy planning that helps teams better manage their dependencies and track progress on the big picture in real-time.





## 7. CODING & SOLUTIONING



The screenshot shows the Visual Studio Code editor with the 'index.html' file open. The Explorer sidebar on the left shows the project structure: 'PROJECT DEVELOPMENT...' with folders 'Sprint 1', 'Sprint 2', 'Sprint 3', and 'Sprint 4'. Under 'Sprint 1', there is a folder 'Personal Expense Tracker' containing 'static' and 'templates'. The 'templates' folder contains 'header.html', 'home.html', 'index.html' (selected), 'login.html', and 'register.html'. The 'index.html' file is open in the editor, showing the following code:

```
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   <title>Expense Tracker</title>
9
10
11   <style>
12     body {
13       background-image: url("../images/expense-tracker.jpg");
14       background-repeat: no-repeat;
15       background-attachment: fixed;
16       background-size: 60% 100%;
17     }
18   </style>
19
20 </head>
21
22 <body>
23
24
25
26 </body>
27
28 </html>
```

The screenshot shows the Visual Studio Code editor with the 'home.html' file open. The Explorer sidebar on the left shows the project structure: 'PROJECT DEVELOPMENT...' with folders 'Sprint 1', 'Sprint 2', 'Sprint 3', and 'Sprint 4'. Under 'Sprint 3', there is a folder 'Personal Expense Tracker' containing 'images', 'static', and 'templates'. The 'templates' folder contains 'AddExpense.html', 'header.html', 'history.html', 'home.html' (selected), 'index.html', and 'login.html'. The 'home.html' file is open in the editor, showing the following code:

```
1 <!doctype html>
2 <html>
3
4 <head>
5   <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
6   <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
7   <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
8   <link rel="stylesheet" href="../static/history.css" />
9 </head>
10
11 <body>
12   <nav class="navbar navbar-default">
13     <div class="container-fluid">
14       <div class="navbar-header">
15         <a class="navbar-brand" href="#">
16           Expense Tracker</a>
17       </div>
18       <ul class="nav navbar-nav">
19
20         <li class="active"><a href="/home">Home</a></li>
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>
```

```

15 app.config['MAIL_USE_TLS'] = True
16 app.config['MAIL_USERNAME'] = 'apikey'
17 app.config['MAIL_PASSWORD'] = os.environ.get('SENDGRID_API_KEY')
18 app.config['MAIL_DEFAULT_SENDER'] = os.environ.get('MAIL_DEFAULT_SENDER')
19 mail = Mail(app)
20
21 conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=ea286ace-86c7-4d5b-8580-3fbfa46b1c66.bs2io90108kqblod8l1cg.d
22
23 app.secret_key='a'
24
25
26 @app.route('/')
27 @app.route('/register')
28 def register():
29     return render_template('register.html')
30 @app.route('/index')
31 def index():
32     return render_template('index.html')
33
34 @app.route('/header')
35 def header():
36     return render_template('header.html')
37
38 @app.route('/home')
39 def home():
40     return render_template('home.html')
41
42
43

```

```

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
16     <div>
17         <h4> {{msg}} </h4>
18     </div>
19     <div>
20         <form action="{{ url_for('signIn') }}" method="POST" class="form">
21             <div class="title">Login</div>
22             <div class="input-container ic1">
23                 <input id="email" class="input" type="text" name="email" placeholder=" " />
24                 <div class="cut"></div>
25                 <label for="email" class="placeholder">Email</label>
26             </div>
27             <div class="input-container ic2">
28                 <input id="password" class="input" type="password" name="password" placeholder=" " />
29                 <div class="cut"></div>

```

## 8. TESTING

### a. 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.

### b. User Testing

### Acceptance

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.

**Acceptance Testing  
UAT Execution & Report Submission**

Date	03 November 2022
Team ID	PNT2022TMID15641
Project Name	PERSONAL EXPENSE TRACKER APPLICATION
Maximum Marks	4 Marks

## 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

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

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

--

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

## 9. RESULTS

### Performance Metrics

Metrics are a baseline for performance tests. Monitoring the correct parameters will help you detect areas that require increased attention and find ways to improve them.

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

### 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

## 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:**

- a. 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.
- b. 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.
- c. 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.
- d. 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.

- e. 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 their daily expenses.

It will prevent 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. 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

### Github & Demo Link

### DemoLink:



[https://drive.google.com/file/d/1YENRocn5A-mzHrlqyX0RJBz9UMqOMI52/view?usp=share link](https://drive.google.com/file/d/1YENRocn5A-mzHrlqyX0RJBz9UMqOMI52/view?usp=share_link)

**GithubLink:**

<https://github.com/IBM-EPBL/IBM-Project-23399-1659881749>