PERSONAL EXPENSE TRACKER APPLICATION

IBM-Project-ID: PNT2022TMID07305

NALAIYATHIRAN PROJECT BASED LEARNING ON PROFESSIONAL READLINESS FOR INNOVATION, EMPLOYNMENT AND ENTERPRENEURSHIP

A PROJECT REPORT
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COIMBATORE

PROJECT REPORT-PERSONAL EXPENSE TRACKER

INTRODUCTION:

Personal Income Expense Tracker is to easily manage your finance by recording your monthly incomes and expenses. Sometimes at the end of every month, we usually find a shortage of money due to our unaccounted expenses or our bad spending habits. It is necessary to keep track of our incomes and expenses.

1.1 Project Overview

Personal Expense Tracker (PET) is a daily expense management system which is specially designed for non- salaried and salaried personnel for keeping track of their daily expenditure with easy and effective way . Personal expense or 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 expense or 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.

1.2 Purpose

The purpose of the project is to help you control your expenses in order to manage the proper spending of money. About the System The Expense Tracker App was created in a HTML web browser that use JavaScript to give user a great interactive experience when using an app.

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. Budgeting ensures you're not spending more than you're making, allowing you to plan for short- and long-term expenses. It's an easy, helpful way for people with all types of income and expenses to keep their finances in order.

LITERATURE SURVEY

Literature review was carried out to gain knowledge and improve the skills needed to complete this project. This chapter shows the different techniques that have been implemented.

2.1 Existing Problem

An expense tracker is a software or application that helps to keep an accurate record of your money inflow and outflow. Many people in India live on a fixed income, and they find that towards the end of the month they don't have sufficient money to meet their needs.

2.2 References

[1] http://expense-manager.com/how-expense software/

[2] https://www.splitwise.com/terms

[3] http://code.google.com/p/socialauthandroid/wiki/Facebook

[4] http://code.google.com/p/socialauth-android

[5] Developer.android.com

[6] http://www.appbrain.com/app/expensemanager/com.expensemanager

[7] https://www.xpenditure.com/en?

[8] http://expense-manager.com/how-expense software/

[9] Donn Felker, "Android Application Development for Dummies", published by For Dummies, 2010.

[10] Ed Burnette, "Hello, Android: Introducing Google's Mobile Development Platform", published by Pragmatic Bookshelf, 2009.

Lee, "Beginning Android Application Development", Published by WroxPress, 2011.

2.3 Problem Statement Definition

It is tough to keep track of all the financial decisions and activities that a person makes. Traditional expense tracking methods are inconvenient and unreliable. In order to get a quick overview about your total incomes and expenses and control spending , its convenient to digitize the process by having a personal expense tracker.

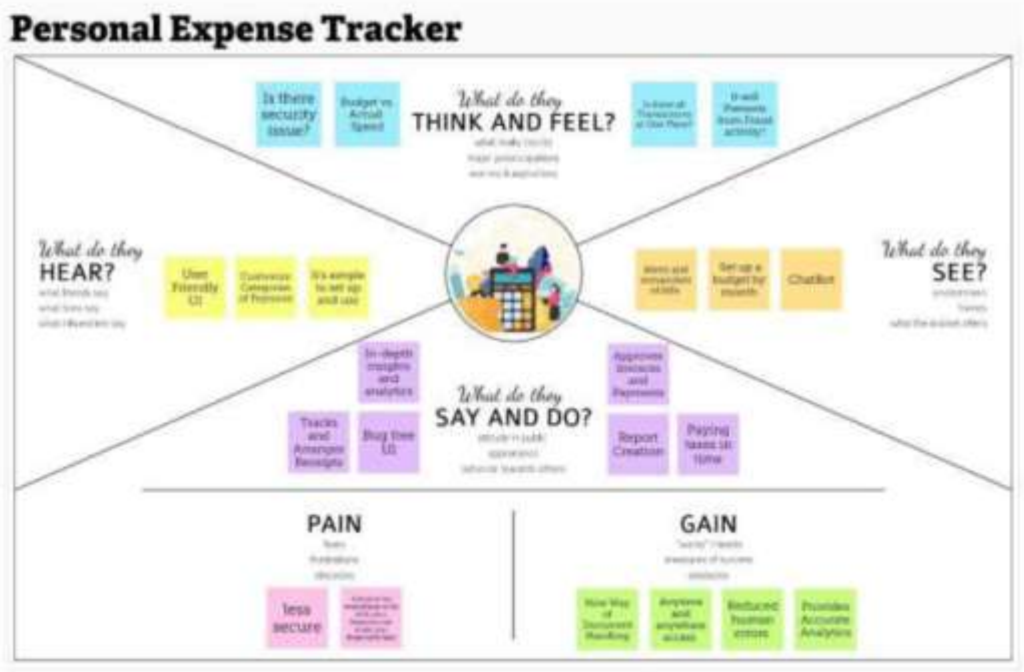
Who does the problem affect?	Working individuals, students and budget conscious consumers.
What are the boundaries of the problem?	Limited features to provide for expense tracking.
What is the issue?	To be vigilant about the expense spent increases financial stress. Being indecisive about the finances may result in less financial security and exceed the budget.
When does this issue occur?	When people are not able to track their expenses properly.
Where is the issue occurring?	In daily life of employees as well as students.
Why is it important that we fix the problem?	Fixing this issue will help users to better plan their budget and lead to financial well-being.

- Sophie, who is a homemaker, finds it hard to control her desire to shop. To stop herself from overindulging in impulsive purchases, she needs to track her expenses and holdherself accountable.
- Sam is a high school student who usually gets a limited allowance from his parents. Tracking his expenses and good budgeting technique allows him to spend on his regular expenses as well as on himself.
- Percy, who is a novice budgeter, finds it tedious to track and manage the expenses amongst his busy schedule. Prioritizing his expenses will help him to curtail his unnecessary expenditures.

IDEATION & PROPOSED SOLUTION

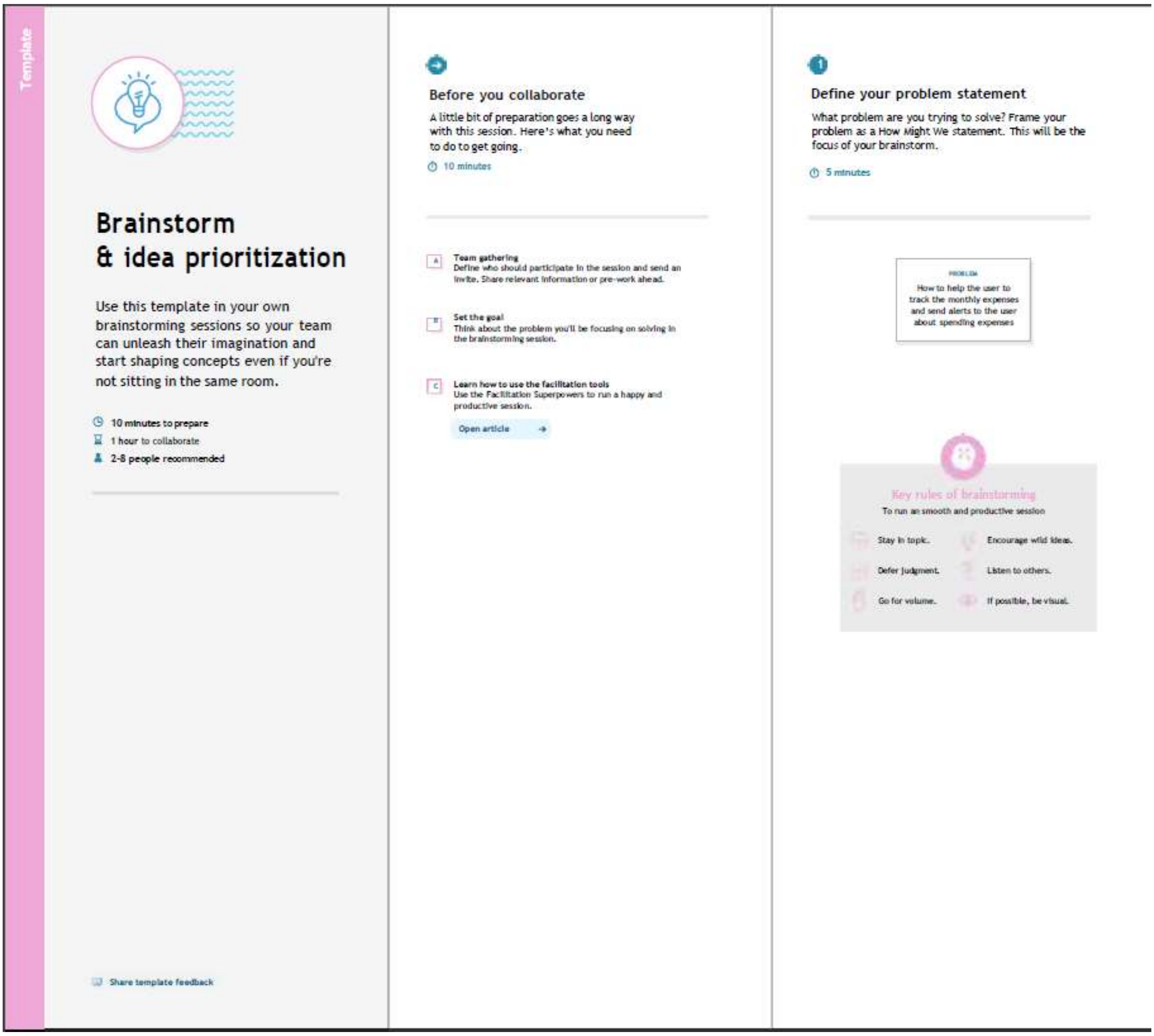
3.1Empathy Map Canvas

Personal Expenses Tracker Application


Personal Expense Tracker
What do they THINK AND FEEL?
Is there security issue?
Budget vs Actual Spend
What do they HEAR?
User Friendly UI
Customize Categories of Expenses
It's simple to set up and use
What do they SEE?
Alerts and remainders of bills
Set up a budget by month
ChatBot
What do they SAY AND DO?
In-depth insights and analytics
Tracks and Arranges Receipts
Bug free UI
Approves Invoices and Payments
Report Creation
Paying taxes on time
PAIN
less secure
GAIN
New Way of Document Handling
Anytime and anywhere access
Reduced human errors
Provides Accurate Analytics

3.1 Ideation & Brainstorming

3.1.a Brainstorm



Template

Brainstorm
& idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
1 hour to collaborate
2-8 people recommended

Share template feedback

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

A Team gathering
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B Set the goal
Think about the problem you'll be focusing on solving in the brainstorming session.

C Learn how to use the facilitation tools
Use the Facilitation Superpowers to run a happy and productive session.

Open article →

1 Define your problem statement

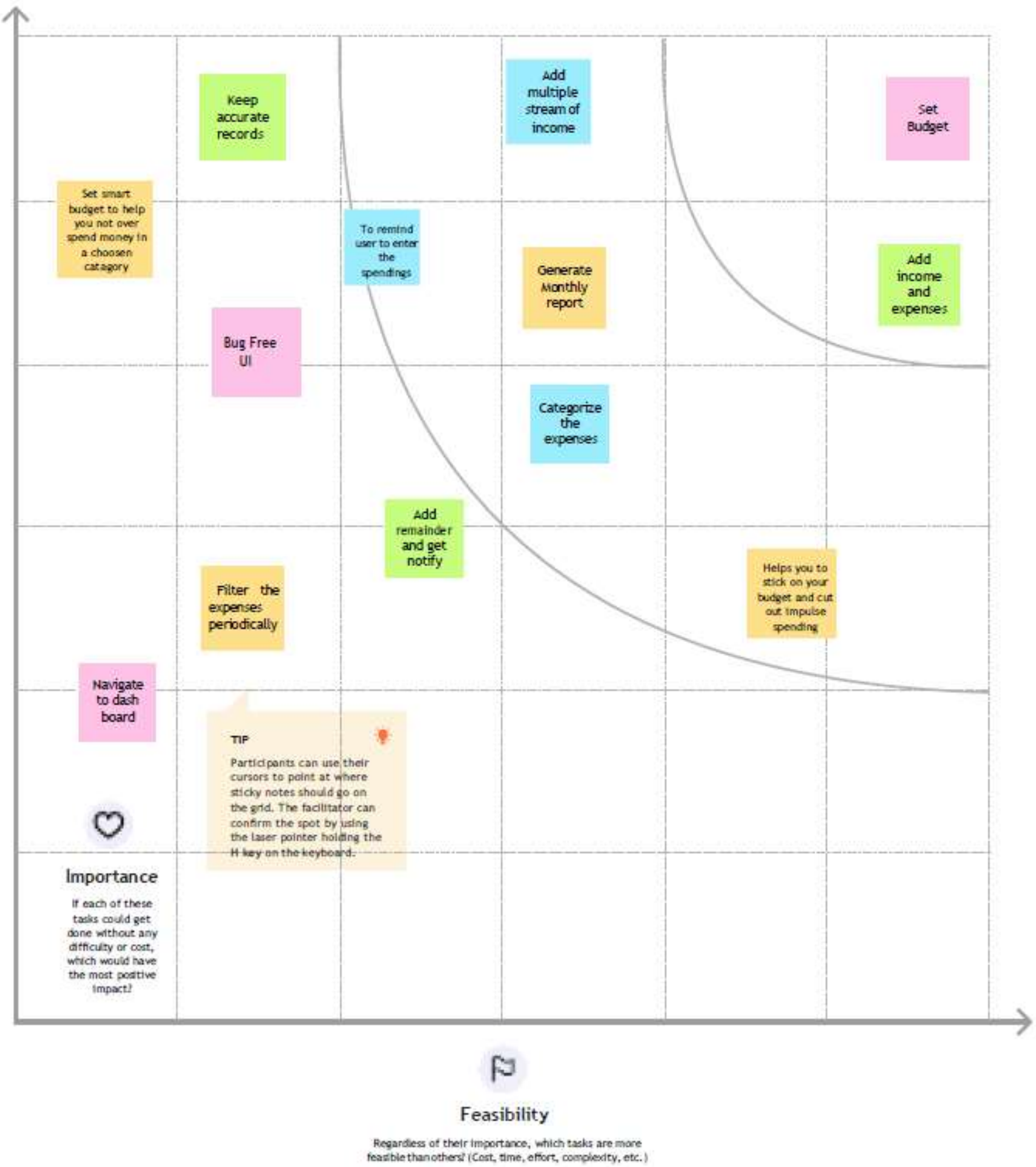
What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

PROBLEM
How to help the user to track the monthly expenses and send alerts to the user about spending expenses

Key rules of brainstorming
To run an smooth and productive session

Stay in topic.
Encourage wild ideas.
Defer judgment.
Listen to others.
Go for volume.
If possible, be visual.

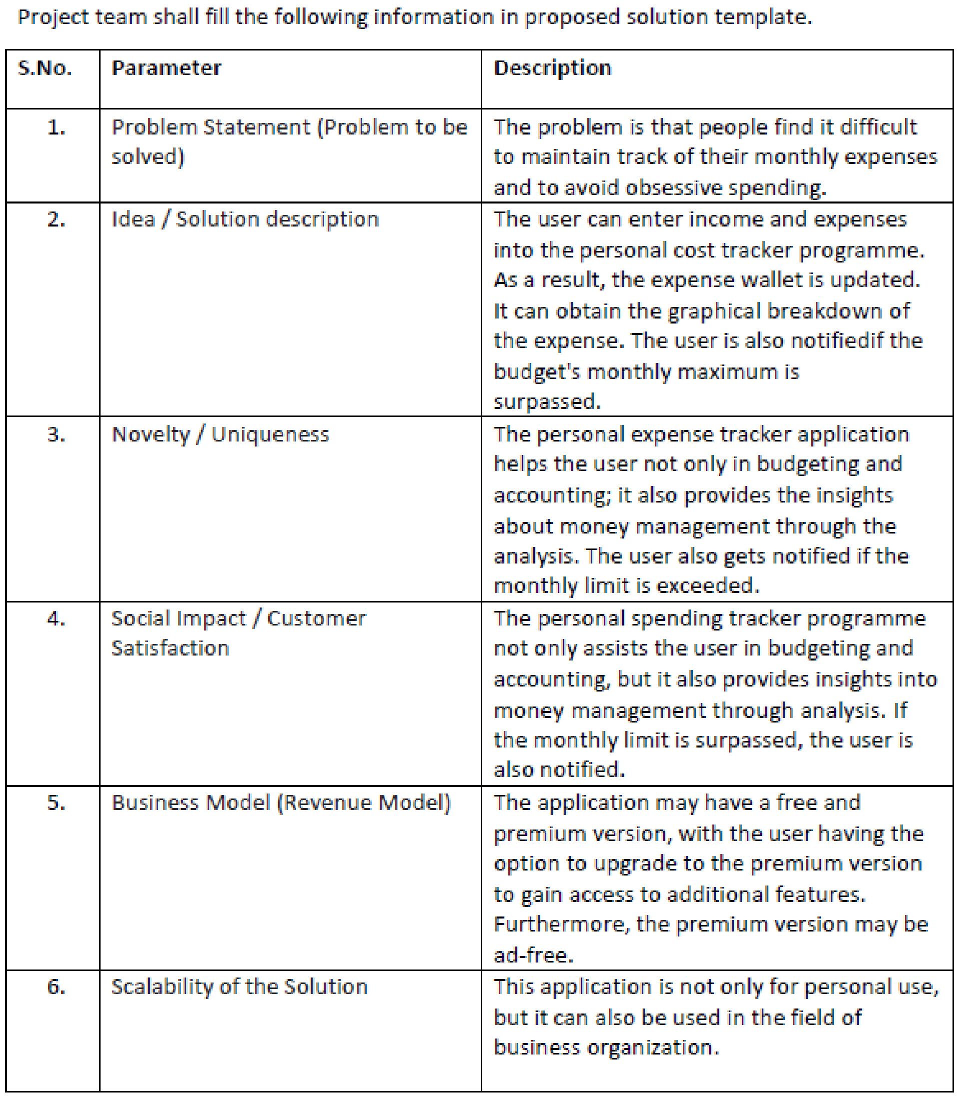

Keep accurate records
Add multiple stream of income
Set Budget
Set smart budget to help you not over spend money in a choosen catagory
To remind user to enter the spendings
Generate Monthly report
Add income and expenses
Bug Free UI
Categorize the expenses
Add remainder and get notify
Filter the expenses periodically
Helps you to stick on your budget and cut out impulse spending
Navigate to dash board
TIP
Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the H key on the keyboard.
Importance
If each of these tasks could get done without any difficulty or cost, which would have the most postive impact?
Feasibility
Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)

PROBLEM STATEMENT

Their own system are used by many business to keep track of their income and expenses because they believe this to be the most important factor in how well their operations are going. As people are unaware of the proper applications to protect their privacy and lack the capacity to make decisions it is a good habit to keep track of daily expenses and income. Even they are still using the old-fashioned note-taking techniques to do so. There is a constant overload to rely on the daily entry of the expenditure and total estimation up until the end of the month because there isn't a complete tracking system.

Who does the problem affect?	Investors, savers, big spenders, debtors, consumers on a tight budget, and shoppers.
What are the boundaries of the problem?	Expense tracking software for employees, students, and regular people.
What is the issue	Being watchful of expenses incurred increases financial strain. Making rash financial decisions could decrease financial security and cause you to go over your budget.
When does this issue occur?	When employing improper budgeting methods. When you don't keep track of your expenses, you can't determine how much was actually spent.
Where is the issue occurring	Working people who struggle to keep track of their expenses.
Why is it important that we fix the problem?	By designating the income for spending, saving, and giving, resolving this problem promotes accountability and encourages financial planning with purpose. This promotes monetary stability.

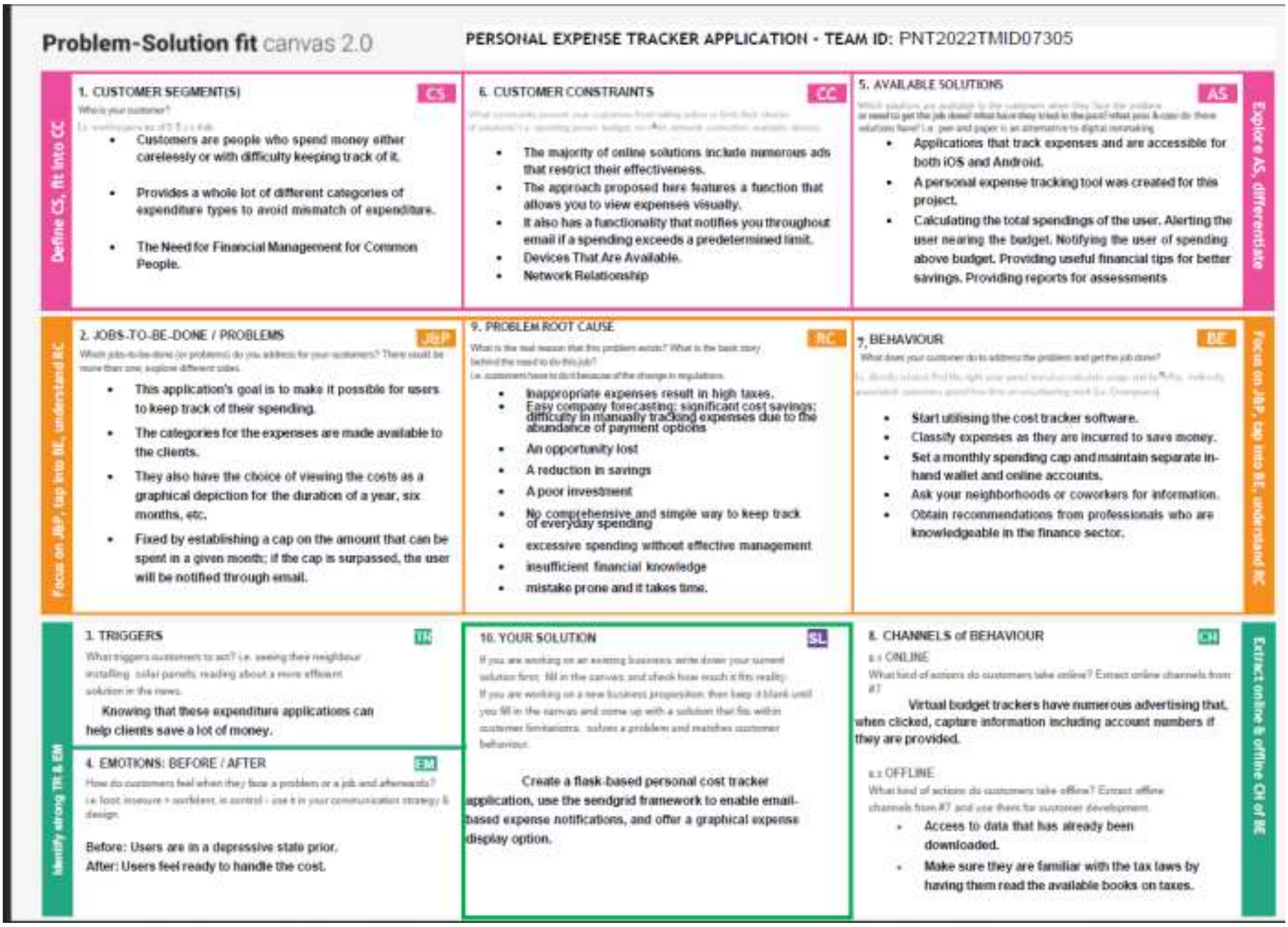
3.2 Proposed Solution



Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem is that people find it difficult to maintain track of their monthly expenses and to avoid obsessive spending.
2.	Idea / Solution description	The user can enter income and expenses into the personal cost tracker programme. As a result, the expense wallet is updated. It can obtain the graphical breakdown of the expense. The user is also notifiedif the budget's monthly maximum is surpassed.
3.	Novelty / Uniqueness	The personal expense tracker application helps the user not only in budgeting and accounting; it also provides the insights about money management through the analysis. The user also gets notified if the monthly limit is exceeded.
4.	Social Impact / Customer Satisfaction	The personal spending tracker programme not only assists the user in budgeting and accounting, but it also provides insights into money management through analysis. If the monthly limit is surpassed, the user is also notified.
5.	Business Model (Revenue Model)	The application may have a free and premium version, with the user having the option to upgrade to the premium version to gain access to additional features. Furthermore, the premium version may be ad-free.
6.	Scalability of the Solution	This application is not only for personal use, but it can also be used in the field of business organization.

3.3 Problem Solution fit


Define CS, fit into CC
Focus on J&P, tap into BE, understand RC
Identify strong TR & EM
Explore AS, differentiate
Focus on J&P, tap into BE, understand RC
Extract online & offline CH of BE

Problem-Solution fit canvas 2.0

PERSONAL EXPENSE TRACKER APPLICATION - TEAM ID: PNT2022TMID07305

1. CUSTOMER SEGMENT(S) CS

Who is your customer?
i.e. working parents of 0-5 y.o. kids

- Customers are people who spend money either carelessly or with difficulty keeping track of it.
- Provides a whole lot of different categories of expenditure types to avoid mismatch of expenditure.
- The Need for Financial Management for Common People.

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.

- The majority of online solutions include numerous ads that restrict their effectiveness.
- The approach proposed here features a function that allows you to view expenses visually.
- It also has a functionality that notifies you throughout email if a spending exceeds a predetermined limit.
- Devices That Are Available.
- Network Relationship

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

- Applications that track expenses and are accessible for both iOS and Android.
- A personal expense tracking tool was created for this project.
- Calculating the total spendings of the user. Alerting the user nearing the budget. Notifying the user of spending above budget. Providing useful financial tips for better savings. Providing reports for assessments

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.

- This application's goal is to make it possible for users to keep track of their spending.
- The categories for the expenses are made available to the clients.
- They also have the choice of viewing the costs as a graphical depiction for the duration of a year, six months, etc.
- Fixed by establishing a cap on the amount that can be spent in a given month; if the cap is surpassed, the user will be notified through email.

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.

- Inappropriate expenses result in high taxes.
- Easy company forecasting; significant cost savings; difficulty in manually tracking expenses due to the abundance of payment options
- An opportunity lost
- A reduction in savings
- A poor investment
- No comprehensive and simple way to keep track of everyday spending
- excessive spending without effective management
- insufficient financial knowledge
- mistake prone and it takes time.

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)

- Start utilising the cost tracker software.
- Classify expenses as they are incurred to save money.
- Set a monthly spending cap and maintain separate in-hand wallet and online accounts.
- Ask your neighborhoods or coworkers for information.
- Obtain recommendations from professionals who are knowledgeable in the finance sector.

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.

Knowing that these expenditure applications can help clients save a lot of money.

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.

Before: Users are in a depressive state prior.
After: Users feel ready to handle the cost.

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.

Create a flask-based personal cost tracker application, use the sendgrid framework to enable email-based expense notifications, and offer a graphical expense display option.

8. CHANNELS of BEHAVIOUR CH

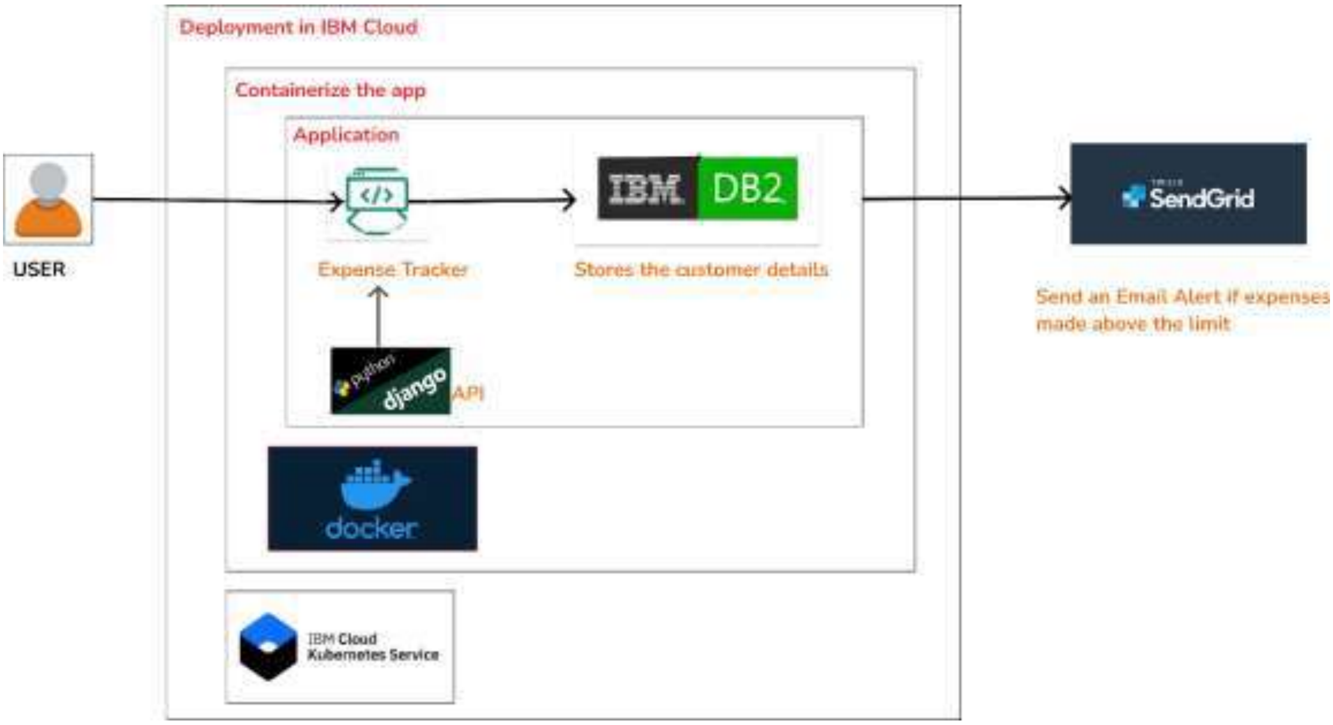
8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

Virtual budget trackers have numerous advertising that, when clicked, capture information including account numbers if they are provided.

8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

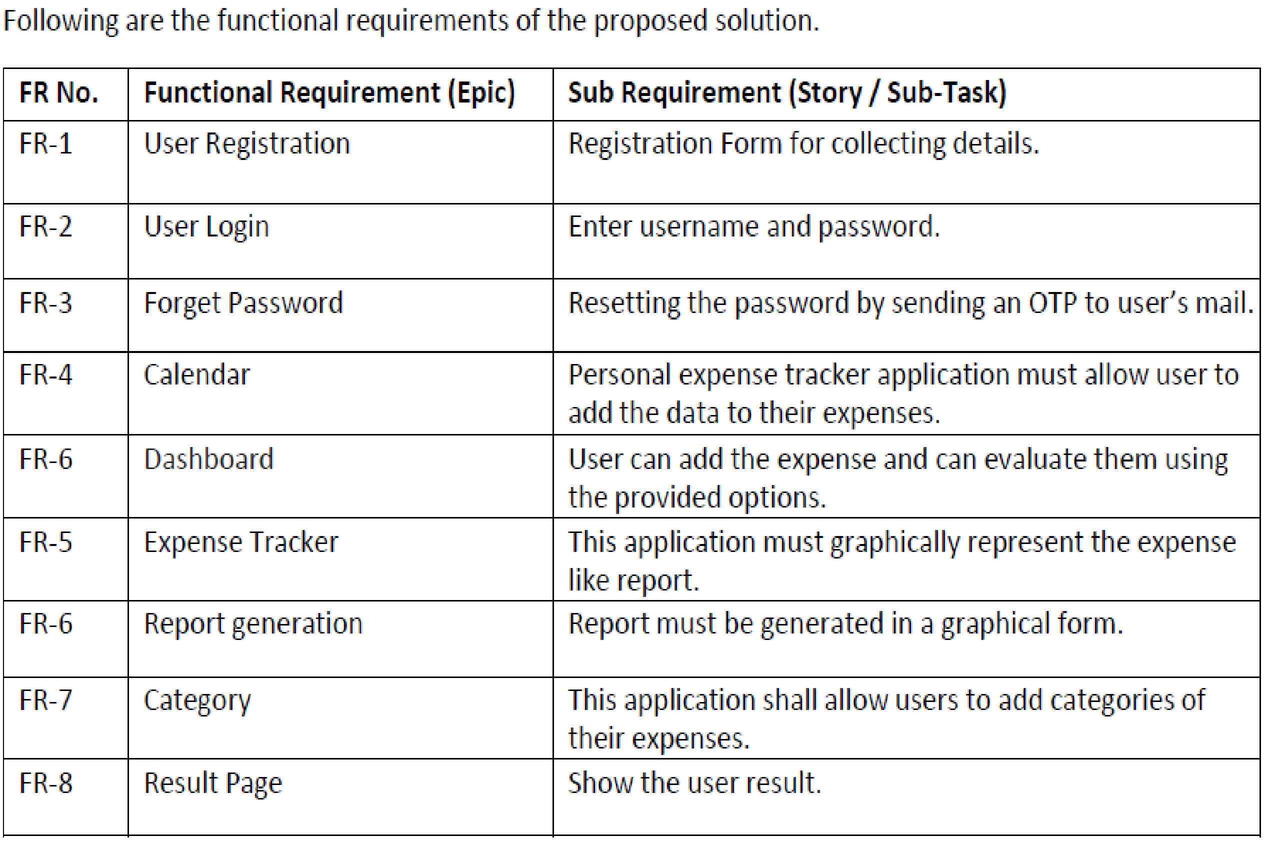
- Access to data that has already been downloaded.
- Make sure they are familiar with the tax laws by having them read the available books on taxes.

SOLUTION ARCHITECTURE



CHAPTER 4 FUNCTIONAL REQUIREMENT

4.1 Functional Requirements

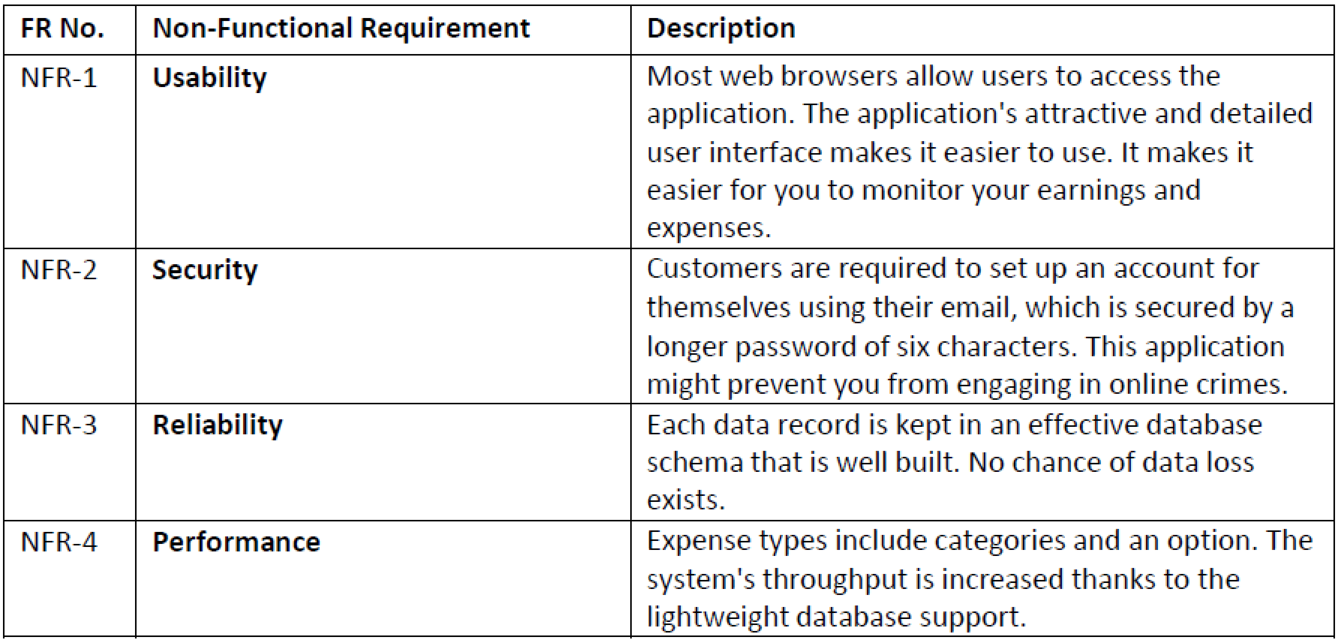


Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration Form for collecting details.
FR-2	User Login	Enter username and password.
FR-3	Forget Password	Resetting the password by sending an OTP to user’s mail.
FR-4	Calendar	Personal expense tracker application must allow user to add the data to their expenses.
FR-6	Dashboard	User can add the expense and can evaluate them using the provided options.
FR-5	Expense Tracker	This application must graphically represent the expense like report.
FR-6	Report generation	Report must be generated in a graphical form.
FR-7	Category	This application shall allow users to add categories of their expenses.
FR-8	Result Page	Show the user result.

5.1 Non Functional Requirements

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



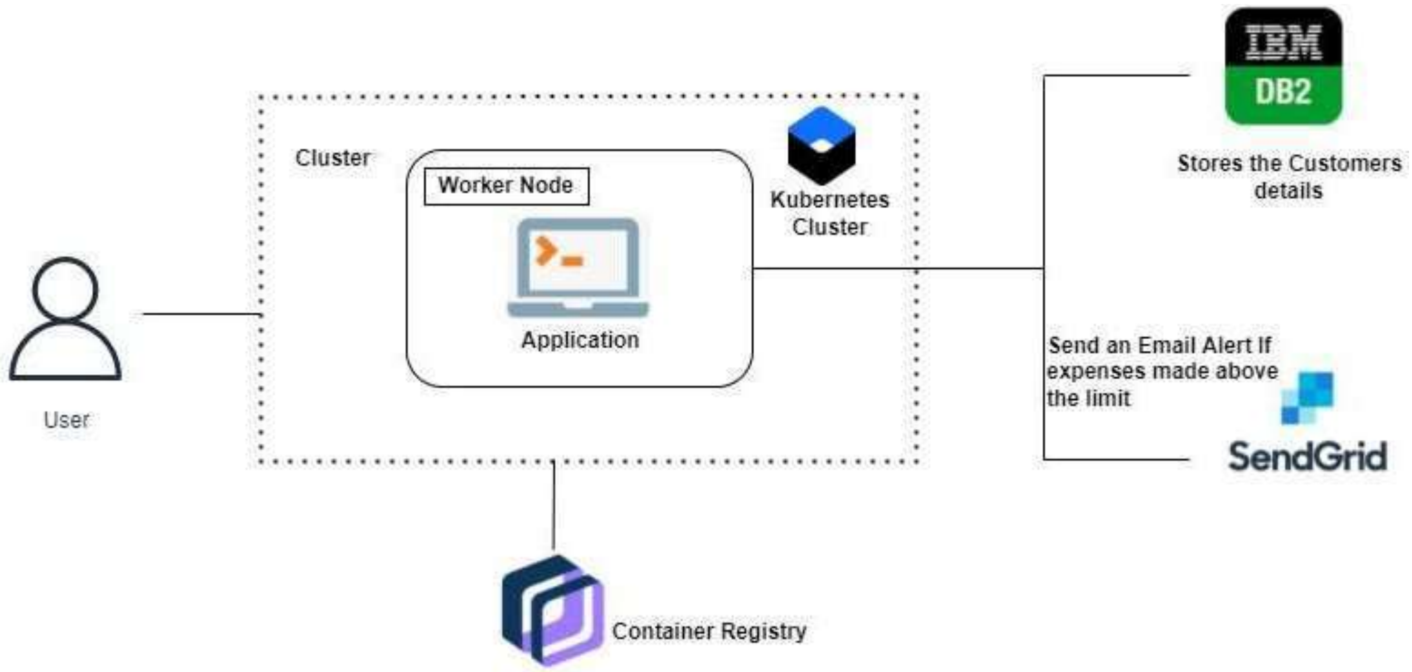
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Most web browsers allow users to access the application. The application's attractive and detailed user interface makes it easier to use. It makes it easier for you to monitor your earnings and expenses.
NFR-2	**Security**	Customers are required to set up an account for themselves using their email, which is secured by a longer password of six characters. This application might prevent you from engaging in online crimes.
NFR-3	**Reliability**	Each data record is kept in an effective database schema that is well built. No chance of data loss exists.
NFR-4	**Performance**	Expense types include categories and an option. The system's throughput is increased thanks to the lightweight database support.

PRODUCT DESIGN

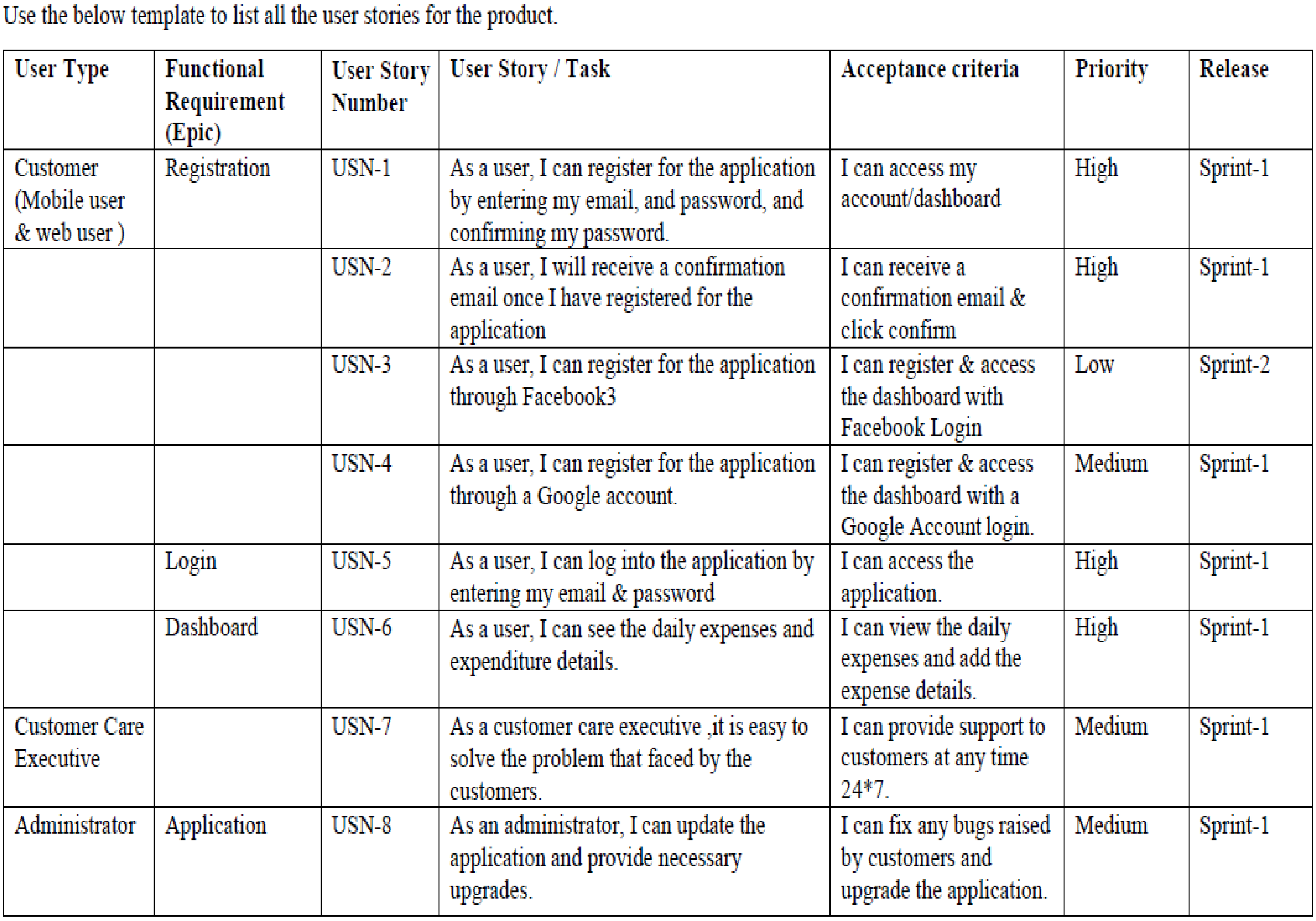
5.1 Data Flow Diagrams

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.

5.2Technical Architecture



5.3 User Stories



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

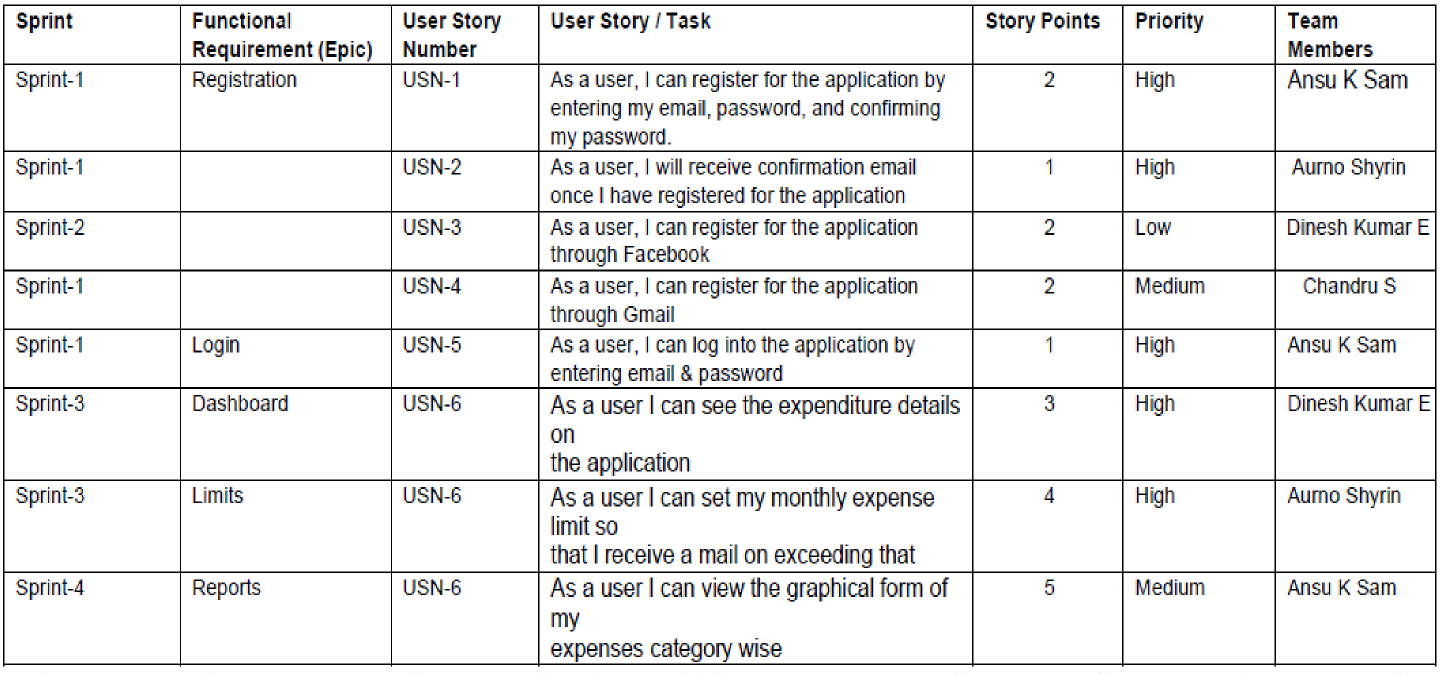
User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user & web user)	Registration	USN-1	As a user, I can register for the application by entering my email, and password, and confirming my password.	I can access my account/dashboard	High	Sprint-1
		USN-2	As a user, I will receive a confirmation email once I have registered for the application	I can receive a confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook3	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through a Google account.	I can register & access the dashboard with a Google Account login.	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering my email & password	I can access the application.	High	Sprint-1
	Dashboard	USN-6	As a user, I can see the daily expenses and expenditure details.	I can view the daily expenses and add the expense details.	High	Sprint-1
Customer Care Executive		USN-7	As a customer care executive ,it is easy to solve the problem that faced by the customers.	I can provide support to customers at any time 24*7.	Medium	Sprint-1
Administrator	Application	USN-8	As an administrator, I can update the application and provide necessary upgrades.	I can fix any bugs raised by customers and upgrade the application.	Medium	Sprint-1

CHAPTER 6

PROJECT PLANNING & SCHEDULING

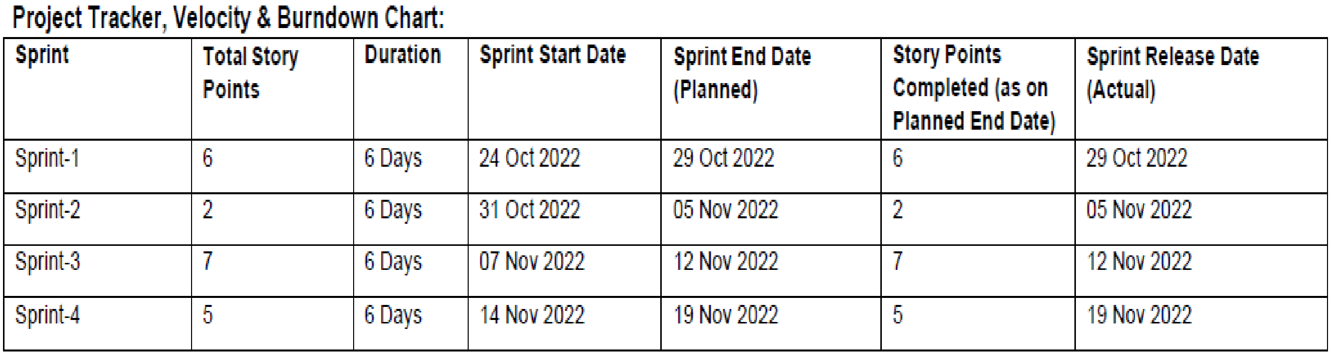
6.1 Sprint Planning & Estimation

Use the below template to create product backlog and sprint schedule.



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	Ansu K Sam
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Aurno Shyrin
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2	Low	Dinesh Kumar E
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium	Chandru S
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	Ansu K Sam
Sprint-3	Dashboard	USN-6	As a user I can see the expenditure details on the application	3	High	Dinesh Kumar E
Sprint-3	Limits	USN-6	As a user I can set my monthly expense limit so that I receive a mail on exceeding that	4	High	Aurno Shyrin
Sprint-4	Reports	USN-6	As a user I can view the graphical form of my expenses category wise	5	Medium	Ansu K Sam

6.2 Sprint Delivery Schedule



Project Tracker, Velocity & Burndown Chart:

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	6	6 Days	24 Oct 2022	29 Oct 2022	6	29 Oct 2022
Sprint-2	2	6 Days	31 Oct 2022	05 Nov 2022	2	05 Nov 2022
Sprint-3	7	6 Days	07 Nov 2022	12 Nov 2022	7	12 Nov 2022
Sprint-4	5	6 Days	14 Nov 2022	19 Nov 2022	5	19 Nov 2022

7.1 Feature 1

1. Expense and revenue tracking.
2. Managing transaction receipts and records.
3. Paying taxes in time.
4. Processing payment and invoices.
5. Create in-depth reports.

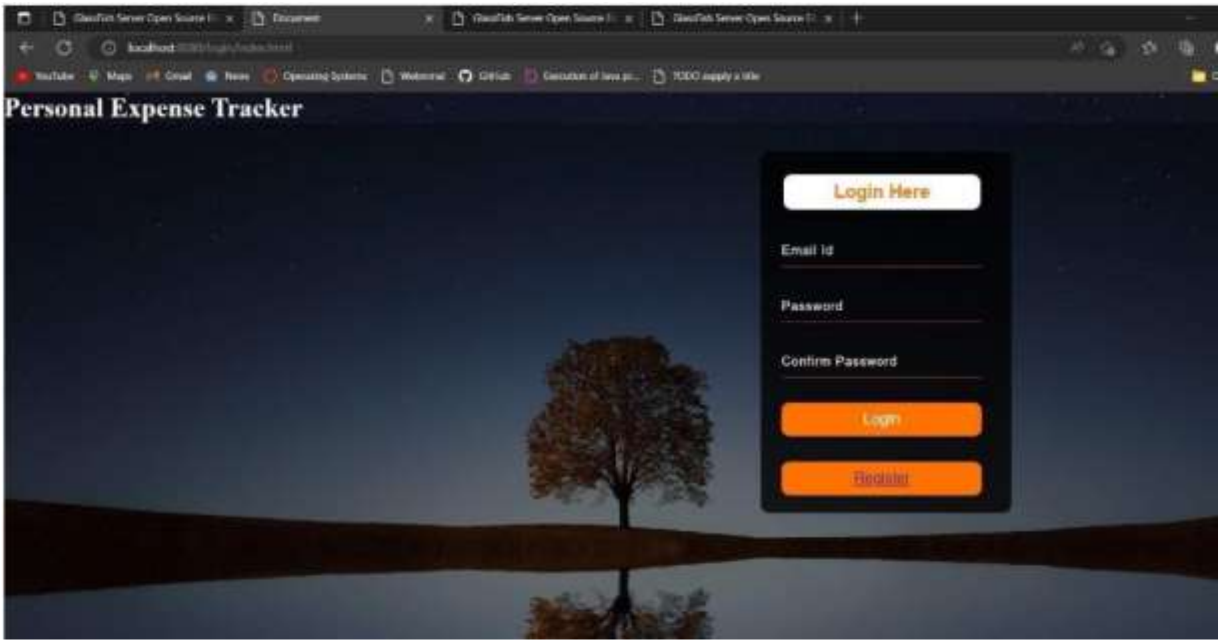
TESTING

8.1 Test Cases

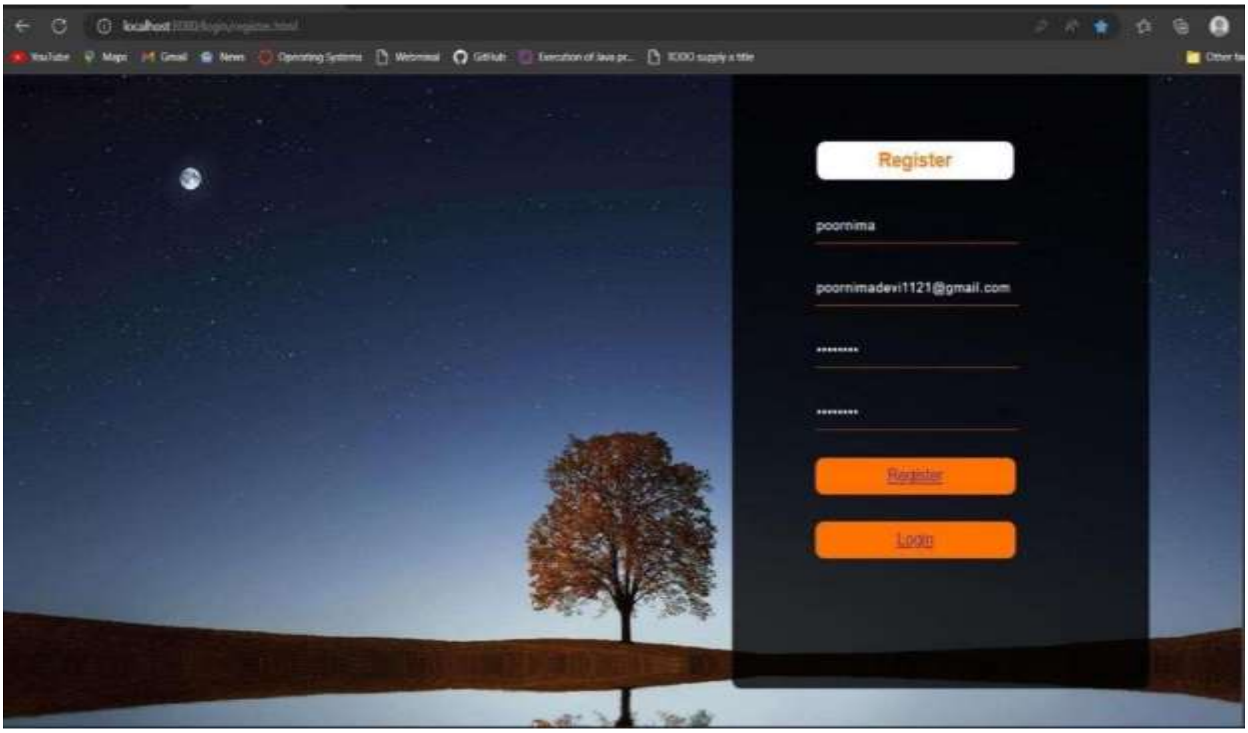
DASHBOARD

```
apiVersion: v1
kind:
ServiceAccount
metadata:
name: admin-
user
namespace:
kubernetes-
dashboard

---

apiVersion: v1
kind: Secret
metadata:
name: admin-
user-token
namespace:
kubernetes-
dashboard
annotations:


kubernetes.io/serv
ice-account.name:
admin-user

type:
kubernetes.io/serv
ice-account-token


---

apiVersion:
rbac.authorization

.k8s.io/v
1kind:

ClusterRoleBinding

metadata:
name: admin-
user

roleRef: apiGroup:
rbac.authorization

.k8s.io
```

```
  kind: ClusterRole
name: cluster-
admin

subjects:

- kind:
ServiceAccount
name: admin-
user
namespace:
kubernetes-
dashboard
```



Personal Expense Tracker



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poornimadevi1121@gmail.com

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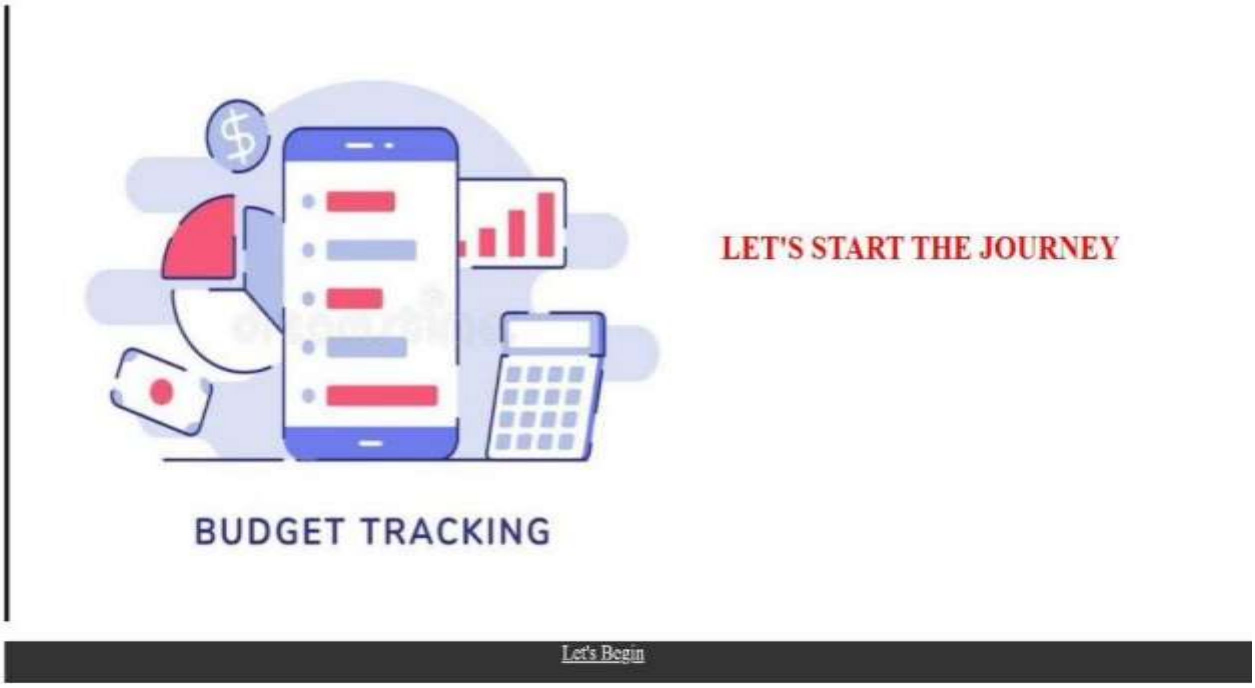
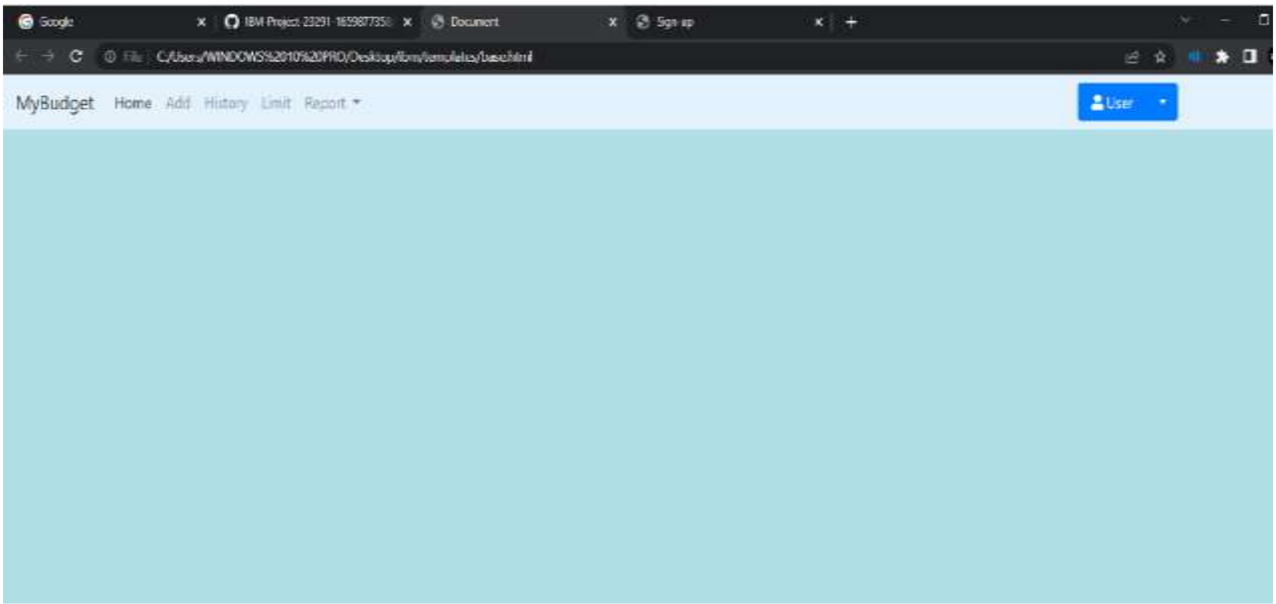


LET'S START THE JOURNEY

Let's Begin


Google
IBM Project 23291-165987735
Document
Sign up
File
C:/Users/WINDOWS%2010%20PRO/Desktop/ibm/templates/base.html
MyBudget
Home
Add
History
Limit
Report
User

9.1 Performance Metrics

RESULTS

An application can be a very powerful tool for businesses if once the app becomes a success. However, the success of an app is measured through numbers, metrics, and analytics. Developing an app takes quite a lot, so once you’ve dedicated much time, money, and effort to the process, it’s mandatory to measure mobile app performance.

10.1 Advantages

1. Maintaining Financial Control

When if comes to personal finance, being out of control is not something anybody would strive for. There's nothing financially worse than feeling like you don't have any idea what's going on with your money.

The good news is, when you make an effort to record every financial transaction you make, you are essentially, taking the reins on anything and everything involving your money. At any one time, you will know exactly how much money is sitting in your bank account, and how much you can spend.

In other words, when you track your expenses, you take complete control over your finances.

Holding Yourself Accountable

If you have any plans on saving, investing, getting out of debt, or building wealth, what is holding you accountable. I mean, we can all set financial goals, and have financial dreams, but if you aren't tracking your expenses, there is nothing to hold you accountable when you make a bad financial decision. 1. Susceptible to costly human errors

Did you know that up to 9 out of 10 spreadsheets consist of human errors?

Unfortunately, even the smallest of mistakes in a spreadsheet can cause catastrophic consequences. Fidelity Magellan Fund once suffered a $2.6 billion overstatement when an accountant accidentally omitted the minus sign on a net capital loss of $1.3 billion.

There is always a greater chance of human error with manual processes, especially when it comes to complex data sets, such as those involved with expense management. Failure to accurately track you company's expenditure and pay invoices on time can wreak havoc on your business's bottom line.

2. Lack of collaboration and access

Because Excel spreadsheets are a single file, only one user at a time may access and modify the data. It can also be challenging to collaborate with other departments because you have to manually share or email a copy of the relevant spreadsheet with your colleagues.

When it comes to expense management data, however, these Excel spreadsheets are frequently shared and proofed across numerous teams and departments. To guarantee that everyone is viewing the current version, users must be rigorous about version control and sharing when updates are made.

3. Time-consuming manual processes

The quantity of expense management data you need to review, analyse, and track will grow as your business evolves. The only way to validate your data when using Excel spreadsheets, however, is to manually double check and re-enter any inaccurate information. This is a time-consuming and labour-intensive task.

As a result, Excel spreadsheets slow workers down and reduce accuracy by requiring them to perform repetitive processes that could be simplified or automated using expense management and invoicing software.

4. Inaccuracy leads to slower decision making

There’s no denying that manual processes which increase the chances of inaccuracy lead to slower decision making within companies. Extracting expense data and invoices from different departments, as well as consolidating them and summarising the information, is incredibly time consuming.

Because spreadsheets are prone to inaccuracies, everyone involved in processing the information must double-check the data as much as possible, which can further slow the process.

5. Lack of version control

The sharing of Excel spreadsheets from team to team might lead to concerns with the data’sversion and validity. You should consider who had the most recent access to the data. Who did what to the spreadsheet and when? Can you confirm that the calculations are correct? If you don’t trust the answers, you may need to start all over again

6. Data isn’t updated in real-time

Excel spreadsheets don’t update in real-time, so each update requires manual input. Because Excel spreadsheets can be difficult to modify, they are usually updated at the end of the day or every few days. Typically, this entails keeping daily paper records and then manually entering them to update the Excel spreadsheet at a later date. Not only is this a waste of time, but it also raises the likelihood of data being entered inaccurately or decisions being made based on out-of-date information.

7. Increased potential to lose important data

If a spreadsheet owner is unfamiliar with best practices for data storage and backup, they might keep just one version of their spreadsheet in a single location, such as on their desktop.

In the event of a technical issue, however, there’s no guarantee of complete data recovery, meaning a company could lose all of their vital data in a split-second.

- Improved customer service
- Cloud-based solution
- Order Fulfillment
- Harness Customer Loyalty and Retention

10.2 Disadvantages

1. Susceptible to costly human errors

Did you know that up to 9 out of 10 spreadsheets consist of human errors?

Unfortunately, even the smallest of mistakes in a spreadsheet can cause catastrophic consequences. Fidelity Magellan Fund once suffered a $2.6 billion overstatement when an accountant accidentally omitted the minus sign on a net capital loss of $1.3 billion.

There is always a greater chance of human error with manual processes, especially when it comes to complex data sets, such as those involved with expense management. Failure to accurately track you company’s expenditure and pay invoices on time can wreak havoc on your business’s bottom line.

2. Lack of collaboration and access

Because Excel spreadsheets are a single file, only one user at a time may access and modify the data. It can also be challenging to collaborate with other departments because you have to manually share or email a copy of the relevant spreadsheet with your colleagues.

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CONCLUSION

Taking proper care of our record is crucial in every business, no matter how big or little, we must understand. We must educate ourselves about the idea of effective inventory management and its applications because we can see that managers do not fully grasp it. A company's inventory management system is one of the reasons for its failure. Many customs to combat failure are present, and we can start from this point. Modern technologies can support us in managing and keeping an eye on our inventory. We may learn, put new ideas into practice, and assess our company**.**

FUTURE SCOPE

1) It will have various options to keep record (for example Food, Travelling Fuel, Salary etc.).

2) Automatically it will keep on sending notifications for our daily expenditure.

3) In today’s busy and expensive life, we are in a great rush to make moneys, but at the end of the month we broke off. As we are unknowingly spending money on title and unwanted things. So, we have come over with the plan to follow our profit.

4) Here user can define their own categories for expense type like food, clothing, rent and bills where they have to enter the money that has been spend and likewise can add some data in extra data to indicate the expense.

APPENDIX

SOURCE CODE:

REGISTRATION PAGE

```
<!DOCTYPE html>

<html>

<head>

<title>Login Form</title>

<link rel="stylesheet" type="text/css" href="..\static\css\login.css">

<link href="https://fonts.googleapis.com/css?family=Poppins:600&display=swap" rel="stylesheet">

<script src="https://kit.fontawesome.com/a81368914c.js"></script>

<meta name="viewport" content="width=device-width, initial-scale=1">

</head>

<body >

<img class="wave" src="..\static\images\wave.png">

<div class="container">

<div class="img">

<div id="png"></div>

</div>

<div class="login-content">

<form action='homepage.html' method="POST">

<div class="msg"></div>

<h2 class="title">Welcome</h2>

<div class="input-div one">
```

```html
<div class="i">
<i class="fas fa-user"></i>
</div>
<div class="div">
<h5>Username</h5>
<input type="text" name="username" class="input" required>
</div>
</div>
<div class="input-div pass">
<div class="i">
<i class="fas fa-lock"></i>
</div>
<div class="div">
<h5>Password</h5>
<input type="password"  name="password" class="input" required>
</div></div>
<a href="#">Forgot Password?</a>
<input type="submit" class="btn" value="Login">
<span>OR</span>
<div><b>Login with</b></div>
<div>
<ul>
<li><a href="#"><i class="fab fa-facebook" aria-hidden="true"></i></a></li>
<li><a href="#"><i class="fab fa-twitter" aria-hidden="true"></i></a></li>
<li><a href="#"><i class="fab fa-google"  aria-hidden="true"></i></a></li>
```

```
<li><a href="#"><i class="fab fa-linkedin" aria-hidden="true"></i></a></li>

<li><a href="#"><i class="fab fa-instagram" aria-hidden="true"></i></a></li>

</ul>

</div>

<div class="app" ><b>Don't have an account?</b><a id="app1" href="signup.html">REGISTER</a></div>

</form>

</div>

</div>

<script type="text/javascript" src="..\static\js\login.js"></script>

</body>

</html>
```

The python code to Connect with DB

```
from flask import Flask, render_template, request, redirect, session

import ibm_db

import re

app = Flask(__name__)

app.secret_key = 'a'

conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=19af6446-6171-4641-8aba-9dcff8e1b6ff.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=30699;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=mbs46040;PWD=MIEpZ1DoqwMRpGvs",'','')

#HOME--PAGE

@app.route("/home")

def home():

    return render_template("homepage.html")
```

```
@app.route("/")
def add():
    return render_template("home.html")
#SIGN--UP--OR--REGISTER
@app.route("/signup")
def signup():
    return render_template("signup.html")
@app.route('/register', methods =['GET', 'POST'])
def register():
    msg = ''
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']
        password = request.form['password']
        cursor = mysql.connection.cursor()
        cursor.execute('SELECT * FROM register WHERE username = % s',
(username, ))
        account = cursor.fetchone()
        print(account)
        if account:
            msg = 'Account already exists !'
        elif not re.match(r'[^@]+@[^@]+\.[^@]+', email):
            msg = 'Invalid email address !'
        elif not re.match(r'[A-Za-z0-9]+', username):
            msg = 'name must contain only characters and numbers !'
        else:
            cursor.execute('INSERT INTO register VALUES ( % s, % s, % s)', (username,
email,password))
            mysql.connection.commit()
            msg = 'You have successfully registered !'
            return render_template('signup.html', msg = msg)
 #LOGIN--PAGE


@app.route("/signin")
def signin():
    return render_template("login.html")
@app.route('/login',methods =['GET', 'POST'])
def login():
    global userid
    msg = ''
    if request.method == 'POST' :
        username = request.form['username']
        password = request.form['password']
        cursor = mysql.connection.cursor()
        cursor.execute('SELECT * FROM register WHERE username = % s AND
password = % s', (username, password ),)
        account = cursor.fetchone()
        print (account)
        if account:
            session['loggedin'] = True
            session['id'] = account[0]
            userid=  account[0]
            session['username'] = account[1]
            return redirect('/home')
        else:
            msg = 'Incorrect username / password !'
    return render_template('login.html', msg = msg)
```

```
#ADDING--- DATA
@app.route("/add")
def adding():
    return render_template('add.html')
@app.route('/addexpense',methods=['GET', 'POST'])
def addexpense():
    date = request.form['date']
    expensename = request.form['expensename']
    amount = request.form['amount']
    paymode = request.form['paymode']
    category = request.form['category']
    cursor = mysql.connection.cursor()
    cursor.execute('INSERT INTO expenses VALUES ( % s, % s, % s, % s, % s, % s)',
(session['id'] ,date, expensename, amount, paymode, category))
    mysql.connection.commit()
    print(date + " " + expensename + " " + amount + " " + paymode + " " +
category)
    return redirect("/display")
#DISPLAY-- graph
@app.route("/display")
def display():
    print(session["username"],session['id'])
    cursor = mysql.connection.cursor()
    cursor.execute('SELECT * FROM expenses ORDER BY date
DESC'.format(str(session['id'])))
    expense = cursor.fetchall()
    return render_template('display.html' ,expense = expense)
```

```
#delete---the--data
@app.route('/delete/<string:id>', methods = ['POST', 'GET' ])
def delete(id):
    cursor = mysql.connection.cursor()
    cursor.execute('DELETE FROM expenses WHERE userid = %s', (id,))
    mysql.connection.commit()
    print('deleted successfully')
    return redirect("/display")

#UPDATE---DATA

@app.route('/edit/<id>', methods = ['POST', 'GET' ])
def edit(id):
   cursor = mysql.connection.cursor()
   cursor.execute('SELECT * FROM expenses WHERE userid = %s', (id,))
   row = cursor.fetchall()
   print(row[0])
   return render_template('edit.html', expenses = row[0])
@app.route('/update/<id>', methods = ['POST'])
def update(id):
  if request.method == 'POST' :
     date = request.form['date']
     expensename = request.form['expensename']
     amount = request.form['amount']
     paymode = request.form['paymode']
     category = request.form['category']
```

```
      cursor = mysql.connection.cursor()
      cursor.execute("UPDATE `expenses` SET `date` = % s , `expensename` = % s ,
`amount` = % s, `paymode` = % s, `category` = % s WHERE `expenses`.`userid` = %
s ",(date, expensename, amount, str(paymode), str(category),id))
      mysql.connection.commit()
      print('successfully updated')
      return redirect("/display")


 #limit
@app.route("/limit" )
def limit():
       return redirect('/limitn')
@app.route("/limitnum" , methods = ['POST' ])
def limitnum():
     if request.method == "POST":
         number= request.form['number']
         cursor = mysql.connection.cursor()
         cursor.execute('INSERT INTO limits VALUES (% s, % s) ',(session['id'],
number))
         mysql.connection.commit()
         return redirect('/limitn')
@app.route("/limitn")
def limitn():
    cursor = mysql.connection.cursor()
    cursor.execute('SELECT limits FROM limits ORDER BY `limits`.`id` DESC LIMIT 1')
    x= cursor.fetchone()
    s = x#[0]



    return render_template("limit.html" , y= s)
```

```
#REPORT


@app.route("/today")
def today():
    cursor = mysql.connection.cursor()
    print ("HI")
    #cursor.execute('SELECT TIME(date) , amount FROM expenses WHERE userid = {0} AND DATE(date) = DATE(NOW()) '.format(str(session['id'])))
    cursor.execute('SELECT TIME(date)  , amount FROM expenses  WHERE userid = %s AND DATE(date) = DATE(NOW()) ',(id,))


    texpense = cursor.fetchall()
    print(texpense)


    cursor = mysql.connection.cursor()
    print("HIII")
    #cursor.execute('SELECT * FROM expenses WHERE userid = {0} AND DATE(date) = DATE(NOW()) AND date ORDER BY `expenses`.`date` DESC'.format(str(session['id'])))
    cursor.execute('SELECT * FROM expenses WHERE userid = %s AND DATE(date) = DATE(NOW()) AND date ORDER BY `expenses`.`date` DESC',(id,))


    expense = cursor.fetchall()


    total=0
    t_food=0
    t_entertainment=0
    t_business=0
    t_rent=0
```

```
t_EMI=0
t_other=0


for x in expense:
    total += x[4]
    if x[6] == "food":
        t_food += x[4]

    elif x[6] == "entertainment":
        t_entertainment  += x[4]

    elif x[6] == "business":
        t_business  += x[4]
    elif x[6] == "rent":
        t_rent  += x[4]

    elif x[6] == "EMI":
        t_EMI  += x[4]

    elif x[6] == "other":
        t_other  += x[4]

print(total)

print(t_food)
print(t_entertainment)
print(t_business)
print(t_rent)
```

```
    print(t_EMI)
    print(t_other)



    return render_template("today.html", texpense = texpense, expense = expense,  total = total ,
                           t_food = t_food,t_entertainment = t_entertainment,
                           t_business = t_business,  t_rent =  t_rent,
                           t_EMI =  t_EMI,  t_other =  t_other )


@app.route("/month")
def month():
    cursor = mysql.connection.cursor()
    cursor.execute('SELECT DATE(date), SUM(amount) FROM expenses WHERE userid= %s AND MONTH(DATE(date))= MONTH(now()) GROUP BY DATE(date) ORDER BY DATE(date) ',(str(session['id'])))
    texpense = cursor.fetchall()
    print(texpense)

    cursor = mysql.connection.cursor()
    cursor.execute('SELECT * FROM expenses WHERE userid = % s AND MONTH(DATE(date))= MONTH(now()) AND date ORDER BY `expenses`.`date` DESC',(str(session['id'])))
    expense = cursor.fetchall()

    total=0
    t_food=0
    t_entertainment=0
```

```
t_business=0
t_rent=0
t_EMI=0
t_other=0


for x in expense:
    total += x[4]
    if x[6] == "food":
        t_food += x[4]

    elif x[6] == "entertainment":
        t_entertainment  += x[4]

    elif x[6] == "business":
        t_business  += x[4]
    elif x[6] == "rent":
        t_rent  += x[4]

    elif x[6] == "EMI":
        t_EMI  += x[4]

    elif x[6] == "other":
        t_other  += x[4]

print(total)

print(t_food)
print(t_entertainment)
```

```
    print(t_business)

    print(t_rent)

    print(t_EMI)

    print(t_other)




    return render_template("today.html", texpense = texpense, expense = 
expense,  total = total ,

                         t_food = t_food,t_entertainment = t_entertainment,

                         t_business = t_business,  t_rent =  t_rent,

                         t_EMI =  t_EMI,  t_other =  t_other )


@app.route("/year")

def year():

    cursor = mysql.connection.cursor()

    cursor.execute('SELECT MONTH(date), SUM(amount) FROM expenses WHERE 
userid= %s AND YEAR(DATE(date))= YEAR(now()) GROUP BY MONTH(date) 
ORDER BY MONTH(date) ',(str(session['id'])))

    texpense = cursor.fetchall()

    print(texpense)


    cursor = mysql.connection.cursor()

    cursor.execute('SELECT * FROM expenses WHERE userid = % s AND 
YEAR(DATE(date))= YEAR(now()) AND date ORDER BY `expenses`.`date` 
DESC',(str(session['id'])))

    expense = cursor.fetchall()


    total=0

    t_food=0
```

```
t_entertainment=0

t_business=0

t_rent=0

t_EMI=0

t_other=0



for x in expense:

    total += x[4]

    if x[6] == "food":

        t_food += x[4]


    elif x[6] == "entertainment":

        t_entertainment  += x[4]


    elif x[6] == "business":

        t_business  += x[4]

    elif x[6] == "rent":

        t_rent  += x[4]


    elif x[6] == "EMI":

        t_EMI  += x[4]


    elif x[6] == "other":

        t_other  += x[4]


print(total)


print(t_food)
```

```
      print(t_entertainment)
      print(t_business)
      print(t_rent)
      print(t_EMI)
      print(t_other)



      return render_template("today.html", texpense = texpense, expense =
expense,  total = total ,
                         t_food = t_food,t_entertainment = t_entertainment,
                         t_business = t_business,  t_rent =  t_rent,
                         t_EMI =  t_EMI,  t_other =  t_other )

#log-out

@app.route('/logout')

def logout():
   session.pop('loggedin', None)
   session.pop('id', None)
   session.pop('username', None)
   return render_template('home.html')



if__name__== "__main__":
    app.run(debug=True)
```

CONCLUSION

Thus we conclude with our final deliverables of the project Personal expense tracker.