PERSONAL EXPENSE TRACKER APPLICATION

TEAM ID: PNT2022TMID48723

NALAIYA THIRAN PROJECT BASED LEARNING ON PROFESSIONAL READINESS FOR INNOVATION EMPLOYMENT AND ENTERPRENEURSHIP.

A PROJECT REPORT BY

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1. INTRODUCTION

1.1. PROJECT OVERVIEW

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

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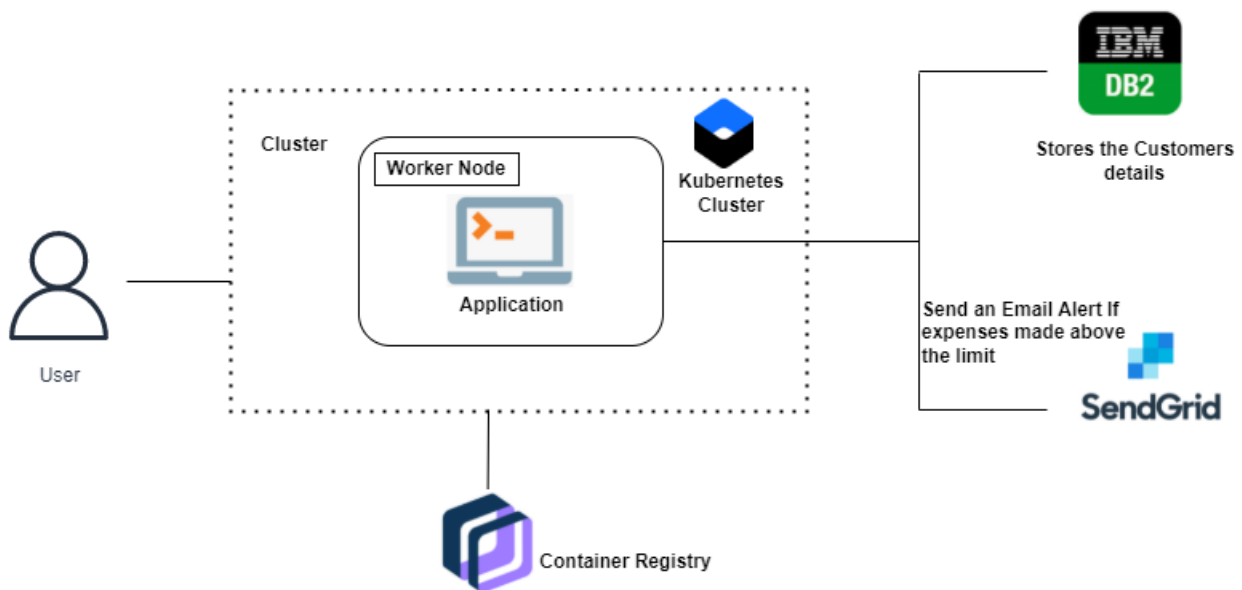
1.2. PURPOSE

Now a day's people are concerned about regularity of their daily expenses. This is done mainly for keep a track of the users' daily expenses to have a control of users' monthly expenses. We have developed an application named as "Personal Expense Tracker Application" and this application is used to manage the user's daily expenses in a more coherent and manageable way. This application will help us to reduces the manual calculations for their daily expenses and also keep the track of the expenses. With the help of

this application, user can calculate his total expenses per day and these results will stored for unique user. As the traditional methods of budgeting, we need to maintain the Excel sheets, Word Documents, notes, and files for the user daily and monthly expenses. There is no as such full-fledged solution to keep a track of our daily expenses easily. Keeping a log in diary is a very monotonous process and also may sometimes lead into problems due to the manual calculations. Looking on all the above given conditions, we are trying to satisfy the user requirements by building a mobile application which will help them reduces their burdens. "Personal Expense Tracker Application" is an application where one can enter their daily expenses and end of the day, they know their expenses in charts.

The idea of developing this project in mobile platform for user convenience. Because whenever they make expenses immediately, they add in mobile application. Some of the concerns maintaining a personal expense is a BIG problem, in daily expenses many times we don't know where the money goes. Some of the conventional methods used to tackle this problem in normal circumstances are like making use of a sticky notes by common users, Proficient people deals with this kind of problems by using spreadsheets to record expense and using a ledger to maintains the large amounts data by especially by expert people. As this shows that it is various methods used by different people. This makes using this data contrary. There is still complication in areas like there is no assurance for data compatible, there are chances of crucial inputs can be missed and the manual errors may sneak in. The Data recorders are not always handled, and it could be hectic process to have overall view of those expenses. We believe a handy design and a handy mobile application which handles these troubles. Such that app is capable of recording the expenditure and giving broad view with easy to use the user interface and this application is intelligent enough to shows the history of expenses noted in the app.

2. LITERATURE SURVEY

2.1. EXISTING PROBLEM

The Expense tracker existing system does not provide the user portable device management level, existing system only used on desktop software so unable to update anywhere expenses done and unable to update the location of the expense details disruptive that the proposed system provides. In existing, we need to maintain the Excel sheets, CSV files for the user daily, weekly and monthly expenses. In existing, there is no as such complete solution to keep a track of its daily expenses easily. To do so a person as to keep a log in a diary or in a computer system, also all the calculations need to be done by the user which may sometimes results in mistakes leading to losses. The existing system is not user friendly because data is not maintained perfectly. But this project will not have any reminder to remain a person in a specific date, so that is the only drawback in which the remainder is not present. This project will be an unpopulated information because it has some disadvantages by not remind a person for each and every month. But it can used to perform calculation on income and expenses to overcome this problem we propose the new project.

2.2. REFERENCES

- https://nevonprojects.com/daily-expense-tracker-system/
- https://data-flair.training/blogs/expense-tracker-python/
- https://phpgurukul.com/daily-expense-tracker-using-php-and-mysql/
- https://ijarsct.co.in/Paper391.pdf
- https://kandi.openweaver.com/?landingpage=python_all_projects&utm_source=google&utm_medium=cpc&utm_campaign=promo_kandi_ie&utm_content=kandi_ie_search&utm_term=python_devs&gclid=Cj0KCQiAgribBhDkARIsAASA5bukrZgbI9UZxzpoyf0PofB1mZNxzcokUP 3TchpYMclHTYFYiqP8aAmmwEALw_wcB

2.3. PROBLEM STATEMENT DEFINITION

To be a Customer, Searching for good expense tracking and user friendly budgeting application. The application needs to manage money and expenses efficiently and also it needs to compare monthly expenses spent by the individual. Still now, we didn't get any user friendly resource for our expectation and also we expect some notification about how much we spend and with encryption option for some secret transaction. Because, we want to store the copy of our cash and online transaction bills in one place and here the problem is spending the money lavishly and have some personal transaction details which makes stressed to handle those things in alternate places and Insecure to my personal transaction and uncomfortable to spend money.

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	Searching for good expense tracking application	Manage my money and expenses efficiently	I didn't get any user friendly resource for my expectation	I want to store the copy of my cash and online transaction bills in one place	Stressed to handle those things in alternate places
Ps-II	Looking for user friendly budgeting application	Save money and compare my monthly expenses	I expect some notificatio n about how much i spend and with encryption option for some secret transaction	Here the problem is I spend the money lavishly and have some personal transaction details	Insecure to my personal transaction and uncomfortable to spend money

3. IDEATION AND PROPOSED SOLUTION

3.1. EMPATHY MAP CANVAS
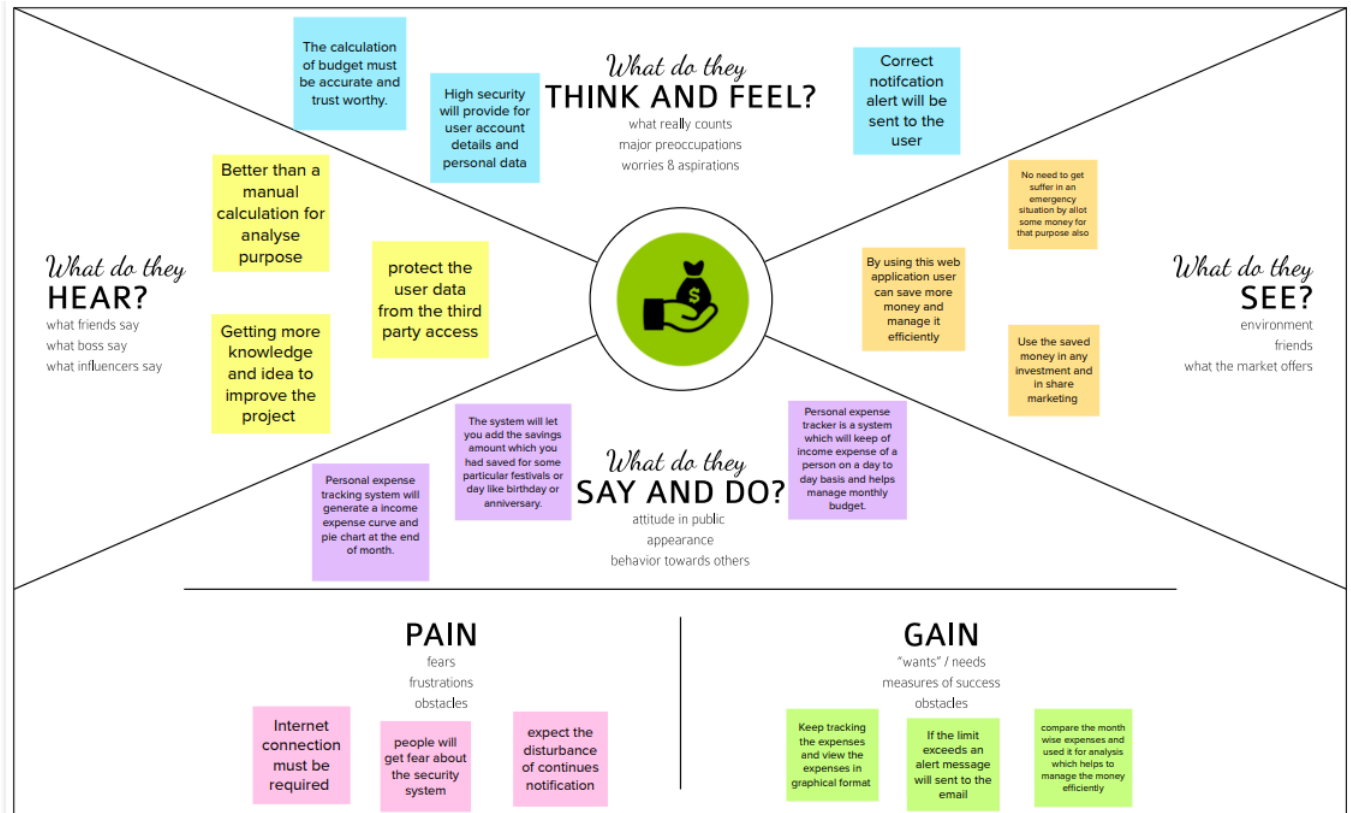
3.2. IDEATION & BRAINSTORMING

Group ideas
Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

⏱ 20 minutes

TIP
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

Secret option for personal expenditures

Store the photocopy of cash receipt and online transaction screenshots

Default categories and Add category options for user's need

User can choose the chart type

User can login anywhere virtually

Select language for Easy understand

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

⏱ 20 minutes

♡ Importance
If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

User can choose the chart type

Secret option for personal expenditures

Store the photocopy of cash receipt and online transaction screenshots

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.

⚑ Feasibility
Regardless of their importance, which tasks are more feasible (transition / (cost, time, effort, complexity, etc.)

After you collaborate
You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

Share the mural
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.

Export the mural
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

Strategy blueprint
Define the components of a new idea or strategy.
Open the template →

Customer experience journey map
Understand customer needs, motivations, and obstacles for an experience.
Open the template →

Strengths, weaknesses, opportunities & threats
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
Open the template →

Share template feedback

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

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

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

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

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 might we [your problem statement]?

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.

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

⏱ 10 minutes

TIP
You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Govindraj
User can add more accounts
Store the photocopy of cash receipt and online transaction screenshots
User can choose the chart type

Padmesh
Compact month wise expenses in graphical format
Default categories and Add category options for user's need
Select language for Easy understand

Vishnu
User can login anywhere virtually
High security will be provided for own data to avoid their loss
User can modify their page

Panneers elvam
User friendly and no difficulties to understand
Secret option for personal expenditures
Email will be send to user if the limit exceeds

Need some inspiration?
See a finished version of this template to kickstart your work.
Open example →

3.3. PROPOSED SOLUTION

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	Personal expense tracker applications will ask users to add their expenses and based on their expenses wallet balance will be updated. User will be notified if they exceeded their limit which is set by them.
2.	Idea / Solution description	User can compare the month wise expenses in graphical representation by the chart format which they want. User have to set their monthly budget. If the limit exceeded an email alert will be send.
3.	Novelty / Uniqueness	The photocopy of the cash receipt and screenshots of online transactions can be stored.
4.	Social Impact / Customer Satisfaction	To satisfy the user there is an option available to keep some expenses as secret record.
5.	Business Model (Revenue Model)	The personal expense tracker will allow the user to compare the month wise expenses and view that in a graphical representation for use the money efficiently, which will be accepted by people.
6.	Scalability of the Solution	The individuals will get the seamless service by login their profile anywhere and at any device with highly secure provisions.

3.4. PROBLEM SOLUTION FIT

Define CS. fit into	1. CUSTOMER SEGMENT(S) **CS**	6. CUSTOMER **CC**	5. AVAILABLE SOLUTIONS **AS**	Explore AS,
	People thinks to use User friendly application for budgeting with efficient features	They want's the System should be more secure and use the services anywhere	User can Store their receipts in the application itself for later analysis	

Focus on J&P, tap into BE, understand	2. JOBS-TO-BE-DONE / PROBLEMS **J&P**	9. PROBLEM ROOT CAUSE **RC**	7. BEHAVIOUR **BE**	Focus on J&P, tap into BE, understand
	The system will store the basic profile details and salary information of user and perform some operations to budgeting	Due to the urge world, people don't have time to keep the records safely	Initially it collects the necessary information and start calculates budgeting then Stores the data in the database after that it will use for analysing month wise budget with graphical format	

Identify strong TR & EM	3. TRIGGERS **TR**	10. YOUR SOLUTION **SL**	8. CHANNELS of BEHAVIOUR **CH**	Extract online & offline CH of BE
	User can set their monthly expenses limit and if the limit exceeded, a notification will send to them	To evacuate people from those problem, the application will provide security for some specific transaction and comparison of month wise data with preferrable language based on the facility of user	User can choose the type of graph as per their need.	
	4. EMOTIONS: BEFORE / AFTER **EM**			
	Now a day people feel difficult to store the receipts of cash and online transactions, which will be avoided after making use of the application.			

4. REQUIREMENT ANALYSIS

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 through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User login	Login through Email Login through Password
FR-4	Amount spent in categories	This application will allow adding the amount spent in a particular category
FR-5	Total amount	Personal expense tracker application will allow seeing the total amount,the amount spent in different category and balance left
FR-6	Gragh,pie chart,bar representation	This application will show the graph/pie chart/bar which will help the users to visualize the budget

4.2. NON-FUNCTIONAL REQUIREMENTS:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	This Application has been developed to help the customer in processing their complaints
NFR-2	**Security**	This application ensures the security and the integrity of data. This is done by providing a password login system for each authorized user
NFR-3	**Reliability**	The customer information and complaints are stored carefully. There is no risk and loss of data.
NFR-4	**Performance**	An Agent will be assigned to the Customer to solve the problem. Whenever the agent is assigned to a customer they will be notified with an email alert. Customers can view the status of the ticket till the service is provided.
NFR-5	**Availability**	The system is available all the time, no time constraint and the user can login it from anywhere.
NFR-6	**Scalability**	Each user will be assigned with an agent the complaints will be rectified easily so it is highly scalable.

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.

Example: DFD   Level   0 (Industry   Standard)
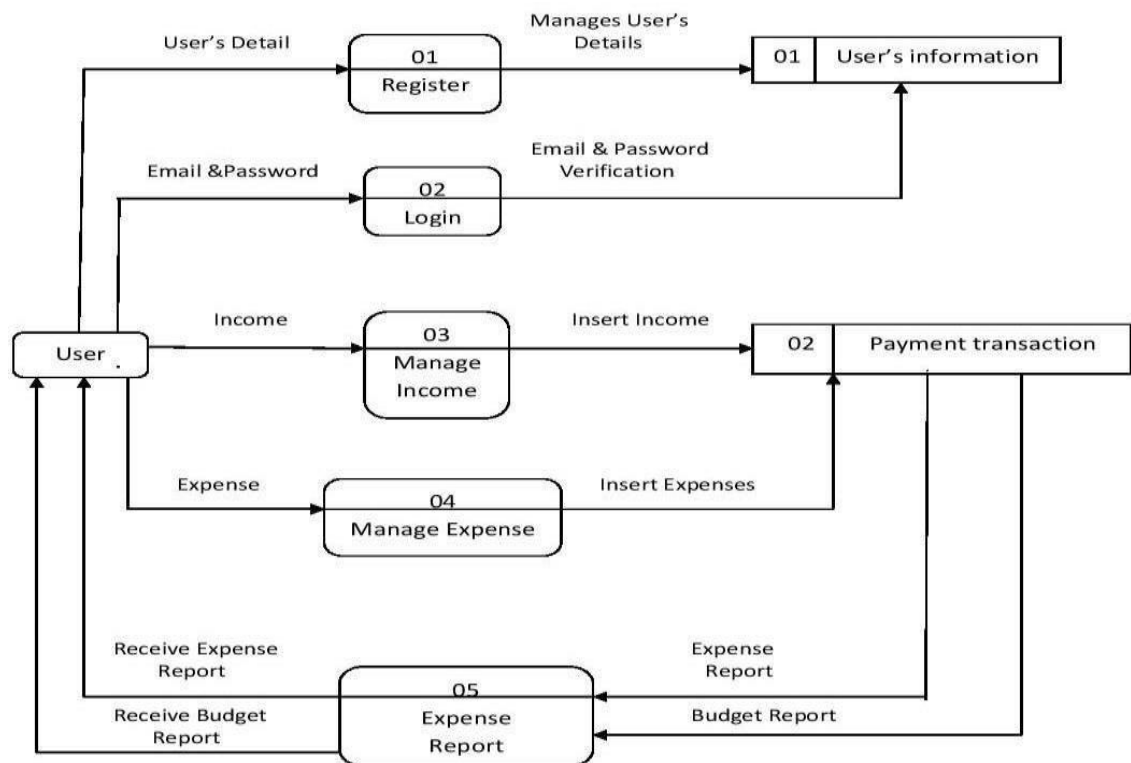
5.2 SOLUTION AND TECHNICAL ARCHITECTURE

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

• Find the best tech solution to solve existing business problems.

• Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.

• Define features, development phases, and solution requirements.

• Provide specifications according to which the solution is defined, managed, and delivered.
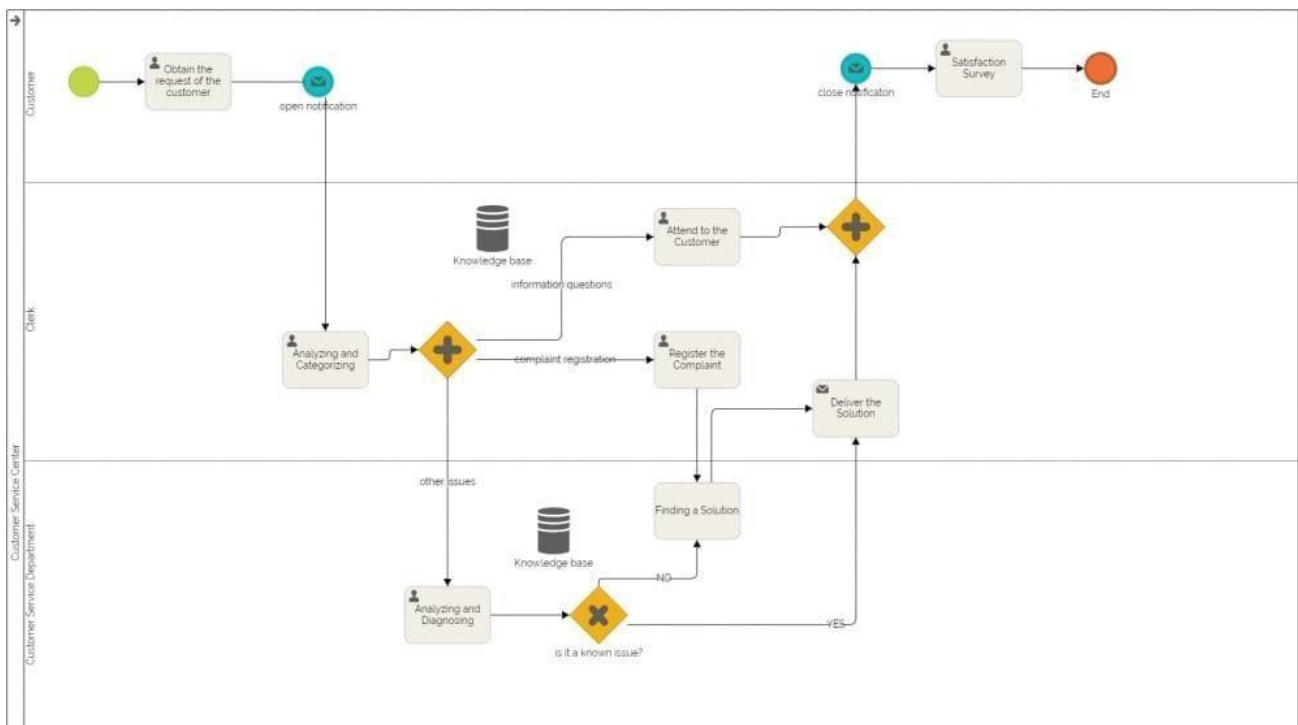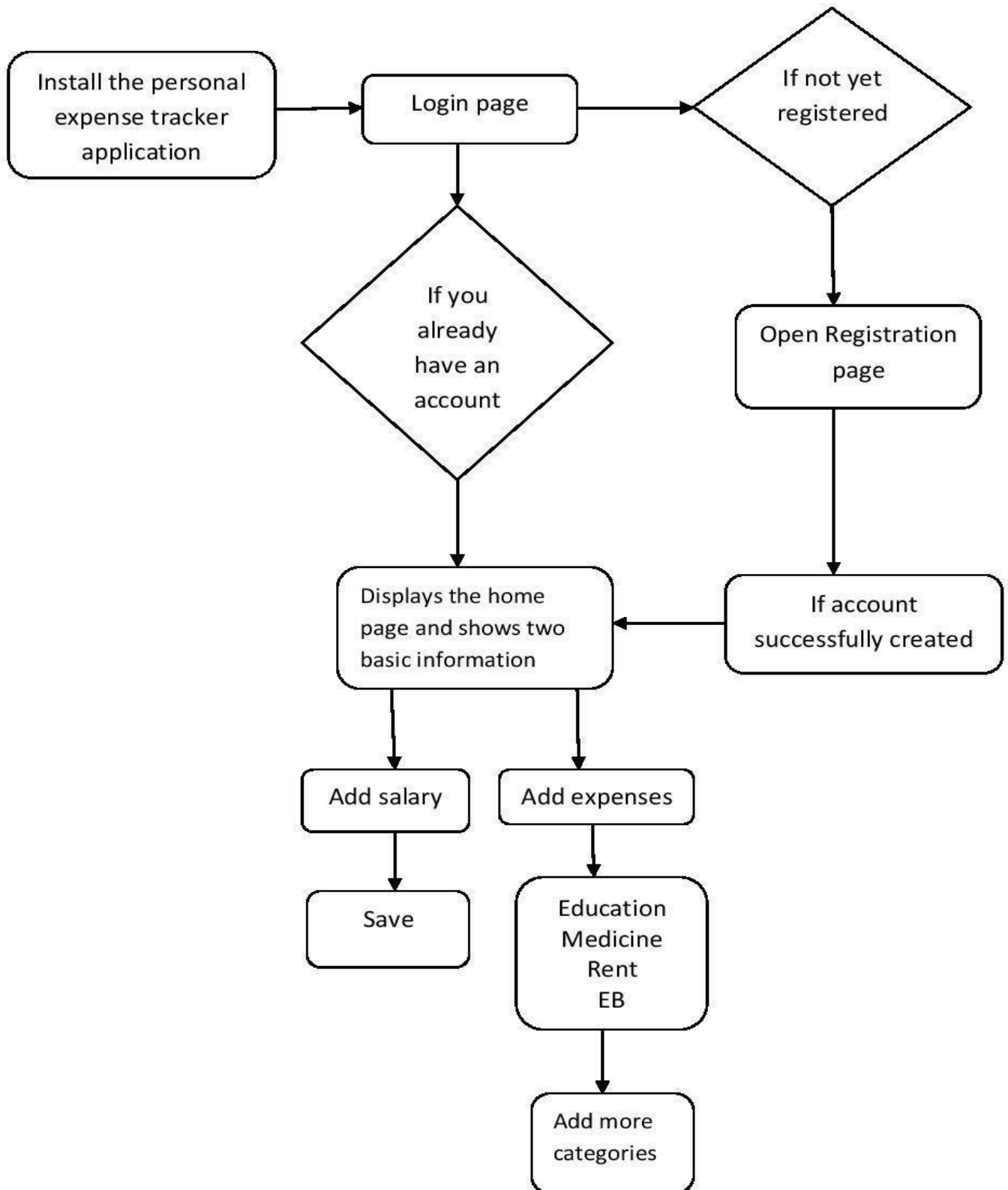
Example - Solution Architecture Diagram:

Figure 1: Architecture and data flow of the customer care registry

Reference: https://www.heflo.com/blog/workflow/customer-service-process-flow-chart/

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
Personal expense manager(Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application		Medium	Sprint-1

			through Gmail			
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-6	As a user, to able to see the basic features of the application can be viewed	I can see the particular feature by click on it	High	Sprint-1
Customer (Web user)		USN-7	As a customer is able to setup his salary and save his expenses screenshots	I can manage and control my expenses made	Medium	Sprint-1
Customer Care Executive		USN-8	Customer I can execute want to access the data	I can change data in database to calculate expenses made	Medium	Sprint-1

Administrator		USN-9	As a administrator, to be able to amend standing data	I can manage changes easily	High	Sprint-1
Budget Holder		USN-10	As a budget holder, pre-approved expense capability	I can set out a fixed value I know must be incurred (i.e. standing expenses).	High	Sprint-1
School Administrator		USN-11	As a school administrator, to see all outstanding claims in my department	I can take action if an approver is unable to action a claim.Or so that I can verify claim details myself	Medium	Sprint-1
Auditor		USN-12	As a auditor, control over what is claimed, each backed with original receipt	I know all claims are legitimate	Medium	Sprint-1

6. PROJECT PLANNING AND SCHEDULING

6.1. SPRINT PLANNING AND ESTIMATION

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	Vishnu MS
		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Govindharaj V
	Login	USN-3	As a user, I can log into the application by entering email & password	1	High	Govindharaj V
	Dashboard	USN-4	Logging in takes to the dashboard for the logged user.	2	High	Padmesh G
Bug fixes, routine checks and improvisation by everyone in the team *Intended bugs only						
Sprint 2	Workspace	USN-1	Workspace for personal expense tracking	2	High	Panneerselvam K
	Charts	USN-2	Creating various graphs and statistics of customer's data	1	Medium	Govindharaj V

	Connecting to IBM DB2	USN-3	Linking database with dashboard	2	High	Padmesh G
		USN-4	Making dashboard interactive with JS	2	High	Vishnu M S
Sprint-3		USN-1	Wrapping up the server side works of frontend	1	Medium	Panneerselvam K
	Watson Assistant	USN-2	Creating Chatbot for expense tracking and for clarifying user's query	1	Medium	Padmesh G
	SendGrid	USN-3	Using SendGrid to send mail to the user about their expenses	1	Low	Vishnu M S
		USN-4	Integrating both frontend and backend	2	High	Govindharaj V
Bug fixes, routine checks and improvisation by everyone in the team *Intended bugs only						
Sprint-4	Docker	USN-1	Creating image of website using docker/	2	High	Govindharaj V
	Cloud Registry	USN-2	Uploading docker image to IBM Cloud registry	2	High	Padmesh G
	Kubernetes	USN-3	Create container using the docker image and hosting the site	2	High	Vishnu M S
	Exposing	USN-4	Exposing IP/Ports for the site	2	High	Panneerselvam K

6.2 SPRINT DELIVERY SCHEDULE

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

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	Vishnu M S
Sprint-2		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Govindharaj V
Sprint-3		USN-3	As a user, I can register for the application through Form	2	Low	Padmesh G
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium	Panneerselvam K
Sprint-1	Login	USN-5	As a user, I can log into the application	1	High	Govindharaj V

			by entering email & password			
Dashboard	USN-6	As a user, I access my detail, manage my expense, add budget, expense report from the Application etc..	2	High	Padmesh G

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	18	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	15	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	19	19 Nov 2022

Velocity:

Imagine we have a 10-day 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)

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

Av = 1.8

6.3 Reports from JIRA

7.CODING & SOLUTIONING

7.1 Feature

- Feature 1: Add Expense

- Feature 2: Update Expense

- Feature 3: Delete Expense

- Feature 4: Set Limit

- Feature 5: Send Alert Emails to users

7.2 Feature

Track your expenses anywhere, anytime. Seamlessly manage your money and budget without any financial paperwork. Just click and submit your invoices and expenditures. Access, submit, and approve invoices irrespective of time and location. Avoid data loss by scanning your tickets and bills and saving in the app. Approval of bills and expenditures in real-time and get notified instantly. Quick settlement of claims and reduced human errors with an automated and streamlined billing process.

MyBudget   Home Add History LIMIT Report ▼   👤 User ▼
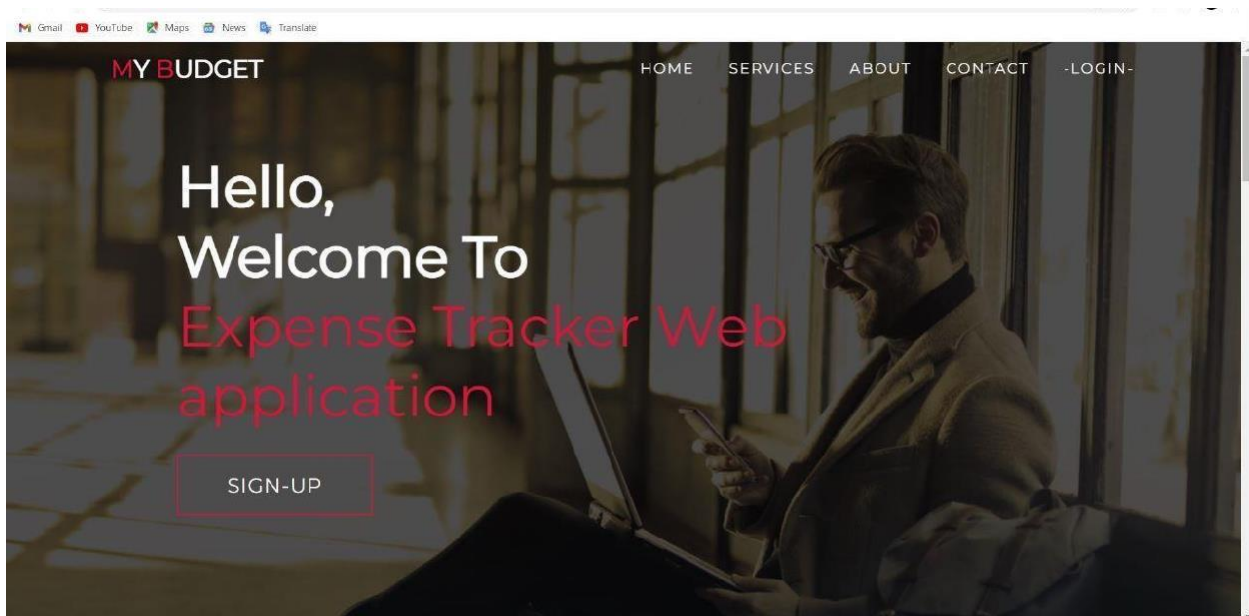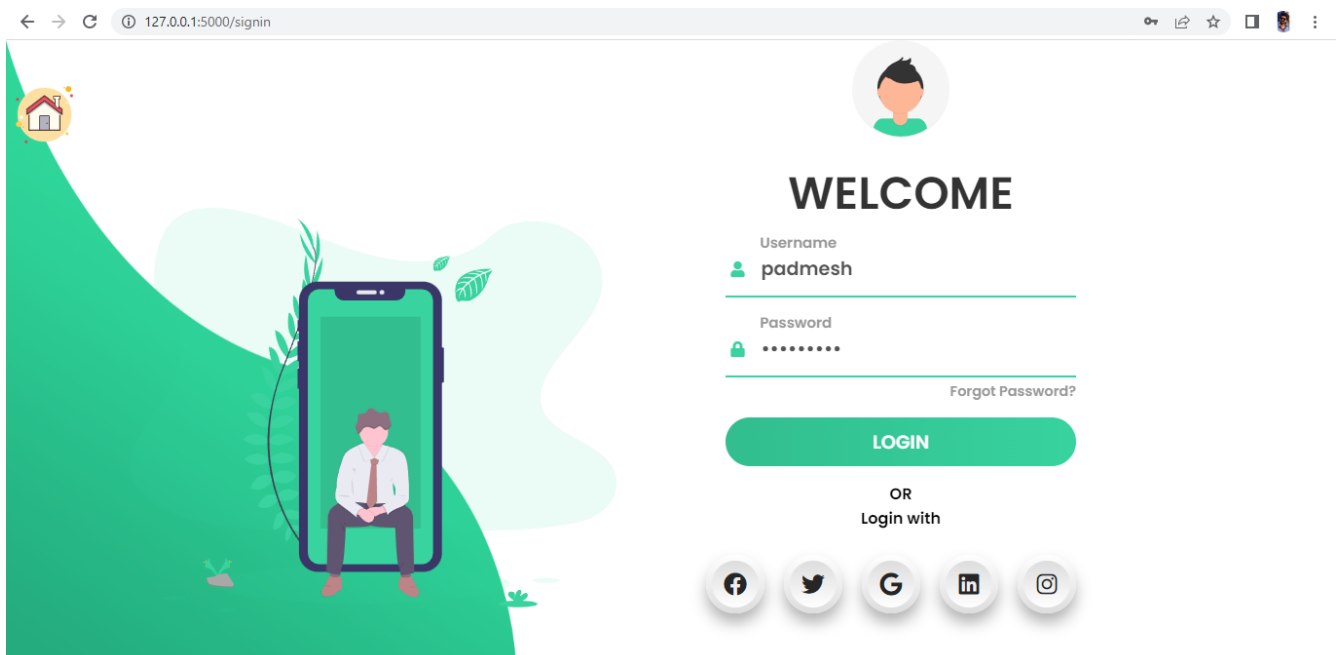
Add Expense

Date

14/11/2022 --:-- --   📅

Expense name

Cake

Expense Amount

1200

creditcard   ˅

food   ˅

Add

← → C ① 127.0.0.1:5000/display   ☆ ✦ 🔲 🐱 ⋮

Personal Expense Tracker   Home Add History LIMIT Report ▼   👤 User ▼

EXPENSES

TV	2000	₹ creditcard	EMI		Edit	Delete
home rent	5000	₹ cash	rent		Edit	Delete
Rent	1000	₹ cash	rent		Edit	Delete
chocolate	400	₹ epayment	food		Edit	Delete
Loan	3000	₹ onlinebanking	business		Edit	Delete

EXPENSE BREAKDOWN

Personal Expense Tracker   Home   Add   History   LIMIT   Report ▾

👤 User   ▾

Currently your MONTHLY limit is ₹ (50000,)

ENTER the MONTHLY LIMIT to avoid over EXPENSES

ENTER

EXPENSE TRACKER   Home   Add   History   LIMIT   Report ▾   Logout

Year Expense Breakdown

YEAR	AMOUNT
2022	52800

Expense Breakdown By Category

Food	1700
Entertainment	700
Business	0
Rent	10000
EMI	40000
Other	0

EXPENSE BREAKDOWN

EMI: 40,000

■ Food   ■ Entertainment   ■ Business   ■ Rent   ■ EMI

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

Q 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

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

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

- Tracking income and expenses: Monitoring the income and tracking all expenditures (through bank accounts, mobile wallets, and credit & debit cards).

- Transaction Receipts: Capture and organize your payment receipts to keep track of your expenditure.

- Organizing Taxes: Import your documents to the expense tracking app, and it will streamline your income and expenses under the appropriate tax categories.

- 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.

- Reports: The expense tracking app generates and sends reports to give a detailed insight about profits, losses, budgets, income, balance sheets, etc.,

- E-commerce integration: Integrate your expense tracking app with your eCommerce store and track your sales through payments received via multiple payment methods.

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

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

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

- 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.

- 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.

- 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 AND DISADVANTAGES

Advantages :

- This system helps a person to reduce their expenses.

- Easy to use.

- You'll have better insight into your spending habits.

- It provides a better overview and comprehensive analysis.

- Saving and Investment.

Disadvantages :

- May get inaccurate results if data is not inserted in correct manner.

- User have to entry every record manually.

- Person who is handling system must have some technical knowledge.

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 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

In further days, there will be calendar based reports and pay mode embedded with the app. Also, backup details will be recorded on cloud. Not only can you track your expenses, you can categorise them too. So, you know exactly how much of money you are spending under each of these categories.

The project assists well to record the income and expenses in general. However, this project has some limitations:

- The application is unable to maintain the backup of data once it is uninstalled.

- This application does not provide higher decision capability.
- To further enhance the capability of this application, we recommend the following features to be incorporated into the system:
- Multiple language interface.
- Provide backup and recovery of data.
- Provide better user interface for user.
- Mobile apps advantage.

13. APPENDIX

SOURCE CODE:

```python
from flask import Flask, render_template, request, redirect, session
from flask_mysqldb import MySQL
import MySQLdb.cursors
import re

app = Flask(__name__)

app.secret_key = 'a'
"""
dsn_hostname = "2d46b6b4-cbf6-40eb-bbce-
6251e6ba0300.bs2io90l08kqb1od8lcg.databases.appdomain.cloud"
dsn_uid = "qbs37391"
dsn_pwd = "Qe0BUshQSIcc66gG"
dsn_driver = "{IBM DB2 ODBC DRIVER}"
dsn_database = "bludb"
dsn_port = "32328"
dsn_protocol = "tcpip"

dsn = (
    "DRIVER={0};"
    "DATABASE={1};"
    "HOSTNAME={2};"
    "PORT={3};"
    "PROTOCOL={4};"
    "UID={5};"
    "PWD={6};"
).format(dsn_driver, dsn_database, dsn_hostname, dsn_port, dsn_protocol, dsn_uid,
dsn_pwd) """

# app.config['DB2_DRIVER'] = '{IBM DB2 ODBC DRIVER}'
```

```python
app.config['database'] = 'bludb'
app.config['hostname'] = '2d46b6b4-cbf6-40eb-bbce-
6251e6ba0300.bs2io90l08kqb1od8lcg.databases.appdomain.cloud'
app.config['port'] = '32328'
app.config['protocol'] = 'tcpip'
app.config['uid'] = 'qbs37391'
app.config['pwd'] = 'Qe0BUshQSIcc66gG'
app.config['security'] = 'SSL'
try:
    mysql = DB2(app)


    conn_str=database=bludb;
    hostname='2d46b6b4-cbf6-40eb-bbce
     6251e6ba0300.bs2io90l08kqb1od8lcg.databases.appdomain.cloud';
    port=32328;
    protocol=tcpip;
    uid=qbs37391;
    pwd=Qe0BUshQSIcc66gG;
    security=SSL
    ibm_db_conn = ibm_db.connect(conn_str,'','')


    print("Database connected without any error !!")
except:
    print("IBM DB Connection error   :     " + DB2.conn_errormsg())


#HOME--PAGE
@app.route("/home")
def home():
    return render_template("homepage.html")


@app.route("/")
def add():
```

```python
    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 (NULL, % s, % s, % s)',
            (username, email,password))
            mysql.connection.commit()
            msg = 'You have successfully registered !'
            return render_template('signup.html', msg = msg)
```

```python
#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)
```

continues ………

Source Code Github Link :

https://github.com/IBM-EPBL/IBM-Project-47606-1660800427

Project Demo Link :

Google Drive :

https://drive.google.com/file/d/1EpjBiRYxvnmS7_DBnv82DytNri0OoY9P/view?usp=drive sdk

Github :

https://github.com/IBM-EPBL/IBM-Project-47606-1660800427/blob/6f7e93326103edc7cc5023c16bde159e03f99b8d/Demo/Demo_Video.mp4