Project Report Format

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1. Introduction

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.

1.1 Project Overview

Our application will help the user to track the expense of the user and give a report of the expense in a month or fixed duration. I also help to set budget and send an alert message if the budget is exceeded. We can add income and expenses manually. Our app helps people to make budget plan and make things digitalized.

Our project will help people to take care of expenses and help them to know themselves. The amount spent by a person is given as report and the person can verify his expenses and plan accordingly foe the next time. This help people to understand the art of money management.

1.2 Purpose

The purpose of the app is to track expenses of the user and give detailed report of the user's expenses. The app helps user to enter the income and also helps them to allocate budget for them. It sends message to the user if the expenses exceed the budget allocated by the user.

Personal finance management is an important part of people's lives. However, everyone does not have the knowledge or time to manage their finances in a proper manner. And, even if a person has time and knowledge, they do not bother with tracking their expenses as they find it tedious and time-consuming. Now, you don't have to worry about managing your expenses, as you can get access to an expense tracker that will help in the active management of your finances.

2 Literature survey

A literature review is a survey of scholarly source on a specific topic. It provides an overview of current knowledge, allowing you to identify relevant theories, methods, and gaps in the existing research that you can later apply to your paper, thesis, or dissertation topic.

A literature survey or a literature review in a project report is that section which shows the various analyses and research made in the field of your interest and the results already published, taking into account the various parameters of the project and the extent of the project.

2.1 Existing problem

Traditional cost accounting systems maintain all overheads in one pool and give equal weight to all activities and costs in it We always have known that "pen is mightier than sword" but that thing doesn't fit with every specific tasks it varies from need-to-need or tasks-to-tasks these days when the amount data is quite enormous. It becomes way more difficult to handle them off. Soon excel also become a way on maintain a record of expenses and analysis.

Intelligent online budget that manages the expenses and used to give the graphica analysis of data.it uses a Rational Unified Method (RUP) which was way more efficient and advantageous in the way it used to promote code reuse and encapsulation.in which CSS and xml technologies has been used.

2.2 References

1. (Babad and Balachandran, 1993) states that **traditional cost accounting systems** maintain all overheads in one pool and give equal weight to all activities and costs in it We always have known that "pen is mightier than sword" but that thing doesn't fit with every specific tasks it varies from need-to-need or tasks-to-tasks these days when the amount data is quite enormous. It becomes way more difficult to handle them off. Soon excel also become a way on maintain a record of expenses and analysis

2. (Girish Bekaroo, 2007) did a research on **intelligent online budget** that manages the expenses and used to give the graphical analysis of data.it uses a Rational Unified Method (RUP) which was way more efficient and advantageous in the way it used to promote code reuse and encapsulation.in which CSS and xml technologies has been used.

3. Students of Sikkim Manipal University an "**income expense for housewives**" which not just counts the amount but also maintains date and calendar record of the person as well they used the clustering technique to maintain their data storage.

4. (Stephan snow and Dhayal Vyas, 2015) mentioned in his paper. "Managing finances is a practice carried out daily in homes across the world. Despite this, the practice is not yet a strong focus for HCI work in the home".

5.Researchers of Nandha and Anna university (2016) created an android version of **expense manager** in with they used post and remark techniques for underlining the expenses and some of the data mining features for analyzing the market value well.
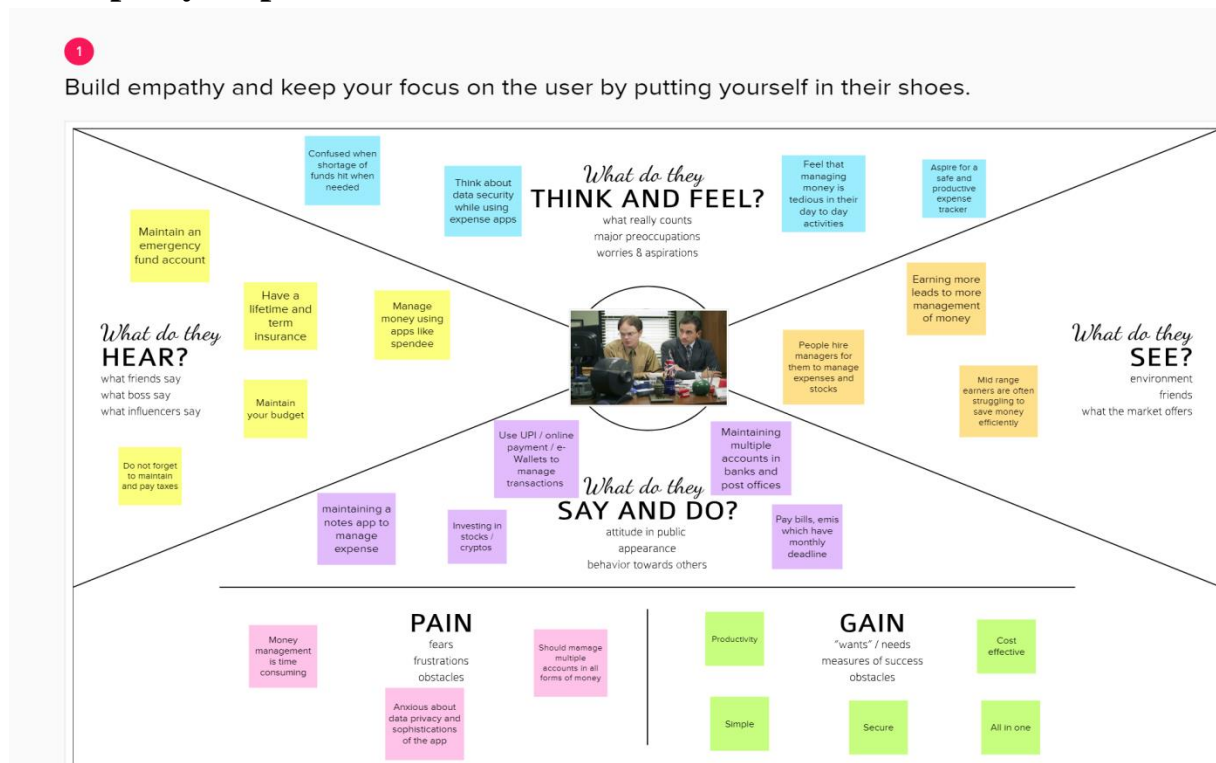
2.3 Problem Statement definition

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

3. Ideation

In this activity you are expected to list the by organizing the brainstorming session and prioritize the top 3 ideas based on the feasibility & importance.

3.1 Empathy map and canvas
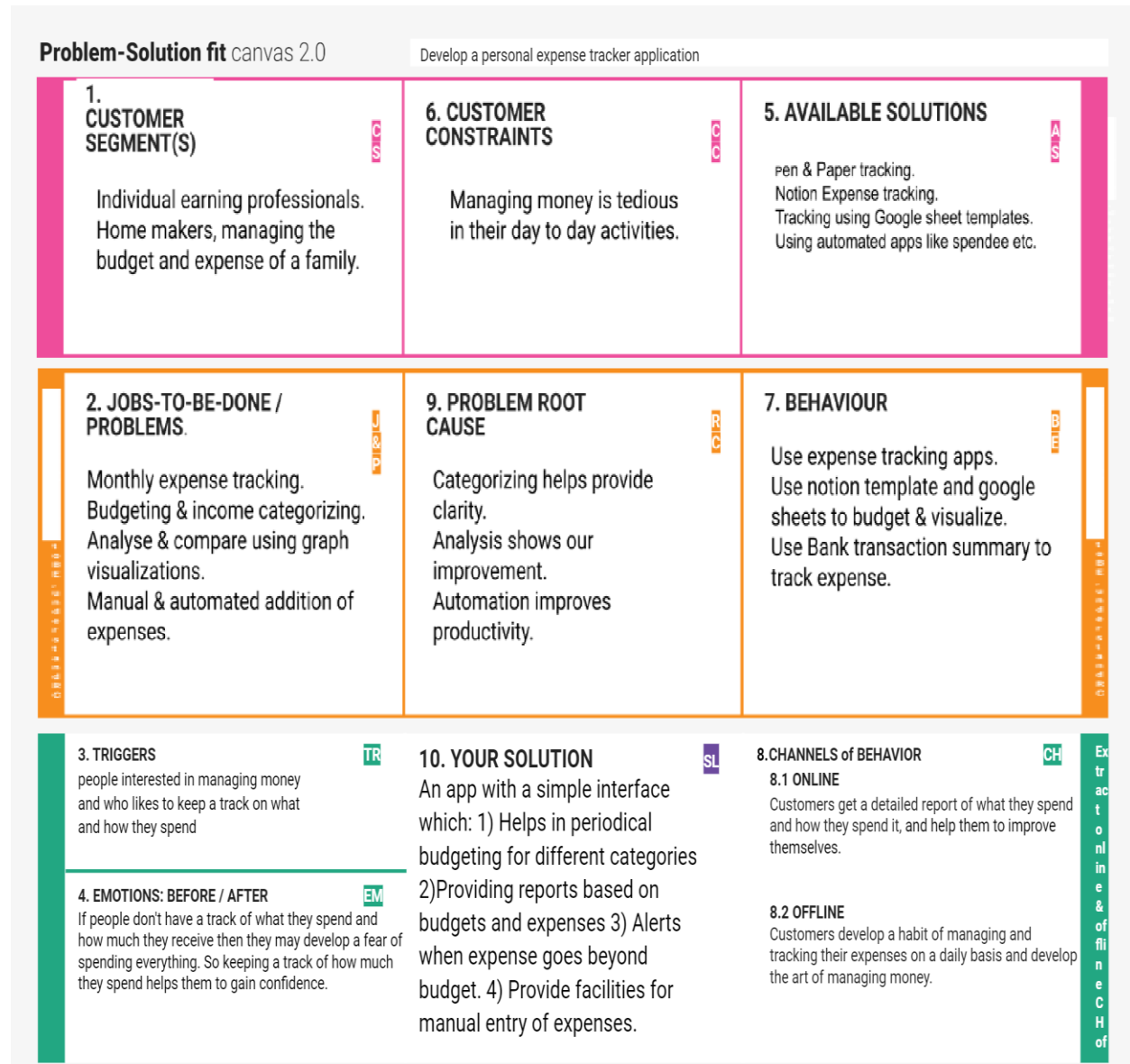
3.3Ideation and Brainstorming

3.3 Proposed solution

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Earning professionals need a way to track their expenses in terms of money, so that they can increase their productivity and savings
2.	Idea / Solution description	An app with a simple interface which: 1) Helps in periodical budgeting for different categories. 2) Provide reports based on budgets and expenses. 3) Alerts when expense goes beyond budget. 4) Provide facilities for manual entry of expenses.
3.	Novelty / Uniqueness	Periodical reports with visualizations based on their expenses. Provide manual addition of expenses where we use scanning facility simplifies tracking.
4.	Social Impact / Customer Satisfaction	In this digital era, the number of ways one can spend money has drastically transformed into different forms. Nonetheless, it has become automated, easy and by the same time it becomes difficult to track. By this tracking app people can increase their productivity, savings and personalized reports to improve how they spend money.
5.	Business Model (Revenue Model)	As this app is for any earning individual, the potential consumer space is huge. Featuring ads on apps over time. Subscription for added features after the app gets more consumers.
6.	Scalability of the Solution	As the prescribed app runs on cloud server, scaling is flexible based on our customers over time. Hence scalable.

3.4 Problem Solution fit

Problem-Solution fit canvas 2.0   Develop a personal expense tracker application

1. CUSTOMER SEGMENT(S) — CS

Individual earning professionals. Home makers, managing the budget and expense of a family.

6. CUSTOMER CONSTRAINTS — CC

Managing money is tedious in their day to day activities.

5. AVAILABLE SOLUTIONS — AS

Pen & Paper tracking.
Notion Expense tracking.
Tracking using Google sheet templates.
Using automated apps like spendee etc.

2. JOBS-TO-BE-DONE / PROBLEMS. — J&P

Monthly expense tracking.
Budgeting & income categorizing.
Analyse & compare using graph visualizations.
Manual & automated addition of expenses.

9. PROBLEM ROOT CAUSE — RC

Categorizing helps provide clarity.
Analysis shows our improvement.
Automation improves productivity.

7. BEHAVIOUR — BE

Use expense tracking apps.
Use notion template and google sheets to budget & visualize.
Use Bank transaction summary to track expense.

3. TRIGGERS — TR

people interested in managing money and who likes to keep a track on what and how they spend

4. EMOTIONS: BEFORE / AFTER — EM

If people don't have a track of what they spend and how much they receive then they may develop a fear of spending everything. So keeping a track of how much they spend helps them to gain confidence.

10. YOUR SOLUTION — SL

An app with a simple interface which: 1) Helps in periodical budgeting for different categories 2)Providing reports based on budgets and expenses 3) Alerts when expense goes beyond budget. 4) Provide facilities for manual entry of expenses.

8.CHANNELS of BEHAVIOR — CH

8.1 ONLINE
Customers get a detailed report of what they spend and how they spend it, and help them to improve themselves.

8.2 OFFLINE
Customers develop a habit of managing and tracking their expenses on a daily basis and develop the art of managing money.

Extract online & offline CH of

4. Requirement Analysis

In this activity you are expected to prepare the functional requirement document.

4.1 Functional Requirements:

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 Email/SignUp Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Add expenses	Enter the everyday expenses Split it into categories(example : food, petrol,movies)
FR-4	Reminder mail	Sending reminder mail on target (for ex : if user wants a reminder when his/her balance reaches some amount(5000)) Sending reminder mail to the user if he/she has not filled that day's expenses.
FR-5	Creating Graphs	Graphs showing everyday and weekly expenses. Categorical graphs on expenditure.
FR-6	Add salary	Users must enter the salary at the start of the month.

4.2 Non- Functional Requirement:

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	A simple web application which is accessible across devices
NFR-2	Security	The OAuth Google sign in and email login are secure with hashed and salted secure storage of credentials.
NFR-3	Reliability	Containerized service ensures that new instance can kick up when there is a failure
NFR-4	Performance	The load is managed through the load balancer used with docker. Thus ensuring good performance
NFR-5	Availability	With load balancing and multiple container instances, the service is always available.

5. Project Design

From this milestone we will be continue working on the project design phase.
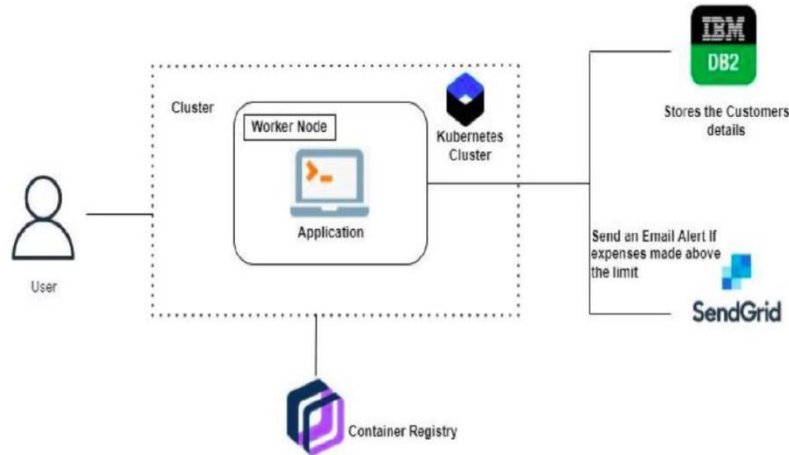
5.1 Dataflow Diagram

Data Flow Diagram of Personal Expense Tracker: DFD Level 2
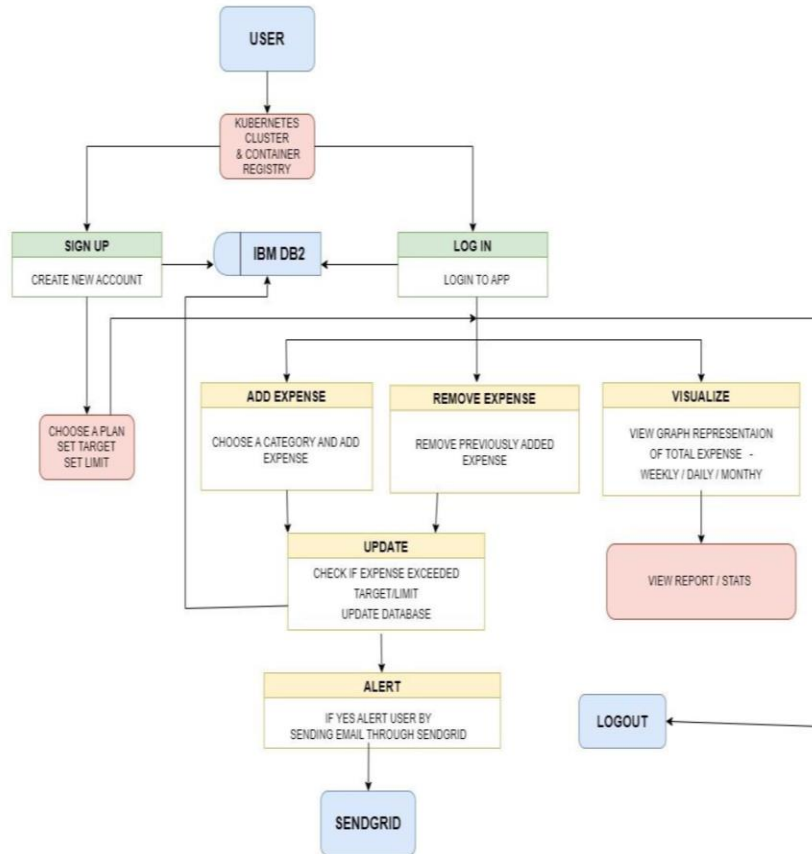
5.2 Solution and Technical Architecture

Technical Architecture:

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

5.3 User Stories

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.
	Login	USN-2	As a user, I can log into the application by entering email & password
	Add	USN -3	As a user , I can add in new expenses.
	Remove	USN – 4	As a user , I can remove previously added expenses.
	View	USN - 5	As a user , I can view my expenses in the form of graphs and get insights.
	Get alert message	USN - 6	As a user , I will get alert messages if I exceed my target amount.
Administrator	Add / remove user	USN – 7	As admin , I can add or remove user details on db2 manually.
		USN - 8	As admin , I can add or remove user details on sendgrid.

6. Project Planning and Schedule:

In this milestone we are expected to prepare milestones & tasks, sprint schedules.

6.1Sprint Planning & Estimation

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	Vinodhini
		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	
	Login	USN-4	As a user, I can log into the application by entering email & password	1	High	Varun
	Dashboard	USN-5	Logging in takes the user to their dashboard	1	Low	
Sprint-2	Add	USN-6	As a user, I can add in new expenses.	1	Medium	Shobana
	Remove	USN-7	As a user, I can remove previously added expenses.	1	Medium	
	View	USN-8	As a user, I can view my expenses in the form of graphs and get insights.	2	High	Shyam
	Set	USN-9	As a user, I will set a target/limit to keep track of my expenditure.	1	High	

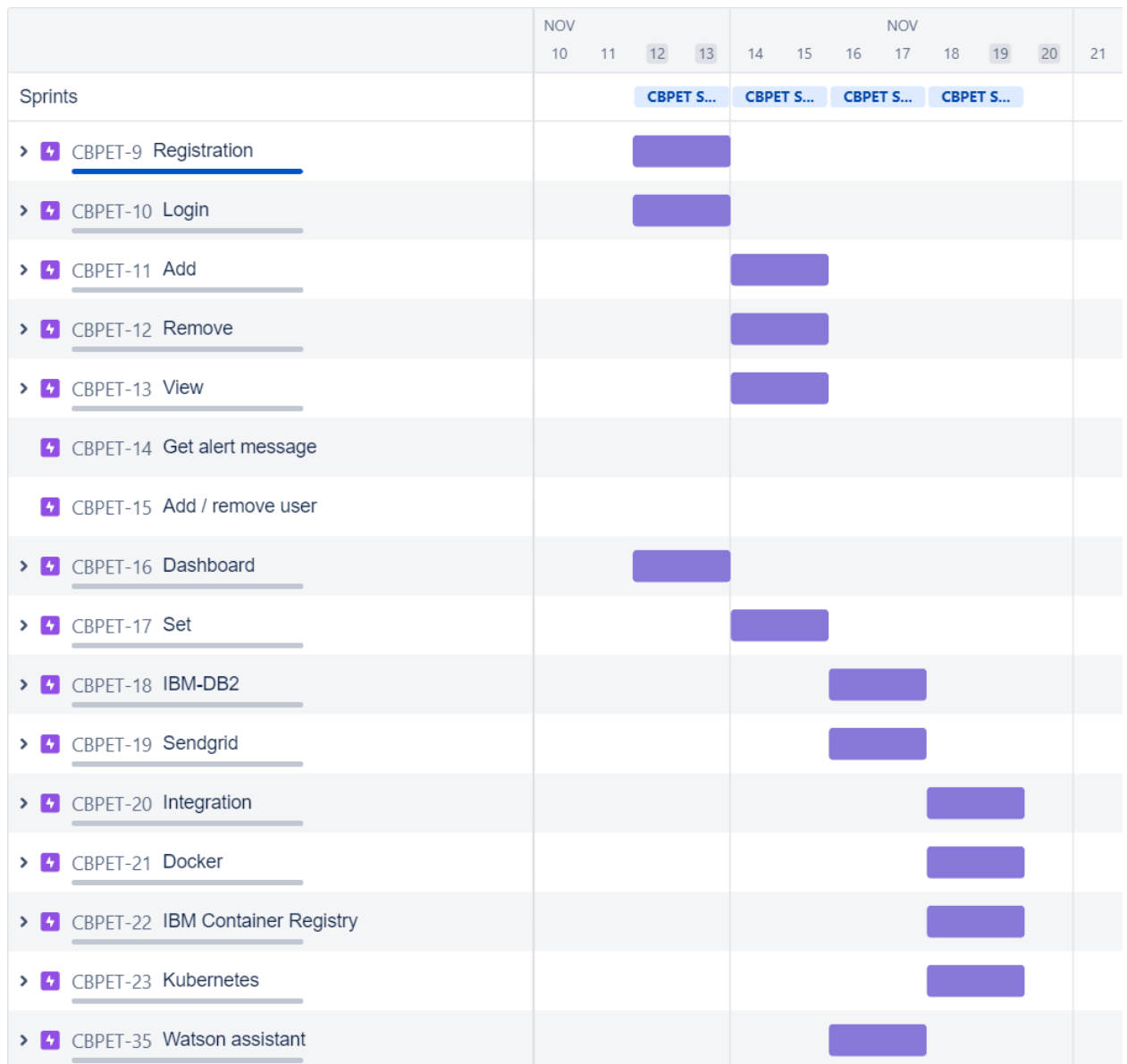| Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint 3	IBM-DB2	USN-10	Linking database with dashboard,	2	High	Shobana
	Watson Assistant	USN-11	Embedding Chatbot to clarify user's queries.	1	Medium	Vinodhini
	SendGrid	USN-12	Using SendGrid to send mail to the user	1	Medium	Varun
Sprint-4	Integration	USN-13	Integrating frontend and backend.	2	High	
	Docker	USN-14	Creating Docker image of web app.	2	High	Shyam
	IBM Container Regsitry	USN-15	Uploading docker image to IBM cloud registry.	2	High	
	Kubernetes	USN-16	Creating container using docker and hosting the webapp.	2	High	

6.2 Sprint Delivery Schedule

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	5	2 Days	12 Nov 2022	13 Nov 2022	5	13 Nov 2022
Sprint-2	5	2 Day	14 Nov 2022	15 Nov 2022	5	15 Nov 2022
Sprint-3	4	2 Day	16 Nov 2022	17 Nov 2022	4	17 Nov 2022
Sprint-4	8	2 Days	18 Nov 2022	19 Nov 2022	8	19 Nov 2022

Average Velocity = 5.5/2 = 2.75

6.3 Report from JIRA file

Sprints	NOV 10	11	12	13	NOV 14	15	16	17	18	19	20	21
			CBPET S...		CBPET S...		CBPET S...		CBPET S...			
⟩ ⚡ CBPET-9 Registration			▮▮									
⟩ ⚡ CBPET-10 Login			▮▮									
⟩ ⚡ CBPET-11 Add					▮▮							
⟩ ⚡ CBPET-12 Remove					▮▮							
⟩ ⚡ CBPET-13 View					▮▮							
⚡ CBPET-14 Get alert message												
⚡ CBPET-15 Add / remove user												
⟩ ⚡ CBPET-16 Dashboard			▮▮									
⟩ ⚡ CBPET-17 Set					▮▮							
⟩ ⚡ CBPET-18 IBM-DB2							▮▮					
⟩ ⚡ CBPET-19 Sendgrid							▮▮					
⟩ ⚡ CBPET-20 Integration									▮▮			
⟩ ⚡ CBPET-21 Docker									▮▮			
⟩ ⚡ CBPET-22 IBM Container Registry									▮▮			
⟩ ⚡ CBPET-23 Kubernetes									▮▮			
⟩ ⚡ CBPET-35 Watson assistant							▮▮					

7. CODING & SOLUTIONING

In this milestone wewill start the project development and expected to perform the coding & solutioning, acceptance testing, performance testing based as per the sprint and submit them.

7.1 Feature 1

4) ADD EXPENSE

5) HISTORY(DISPLAY THE EXPENSE)

7.2 Feature 2

6) EDIT / DELETE(THE EXPENSE DETAILS)

7.3 Feature 3

8) LIMIT (SET MONTHLY EXPENSE)

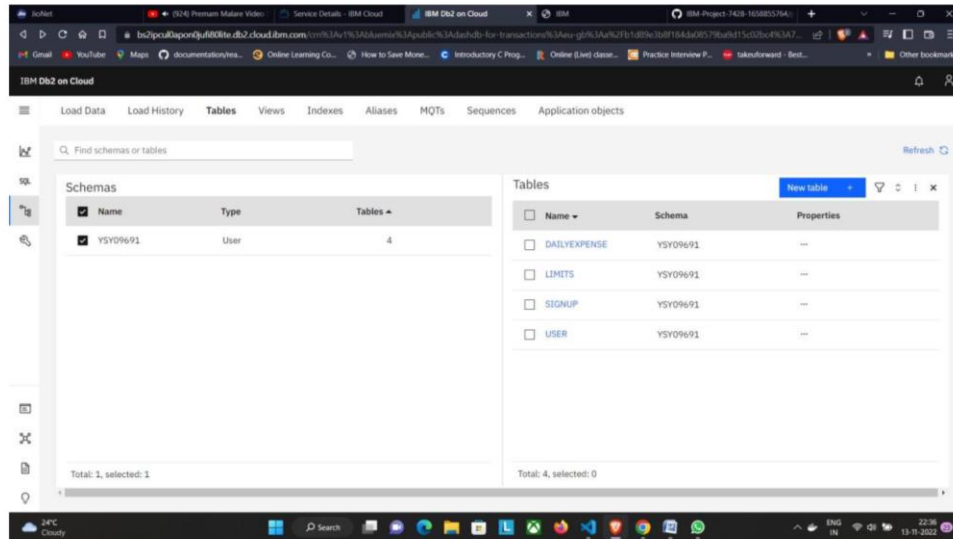### 9) GENERATE REPORT-(TODAY /DAILY EXPENSE DETAILS)
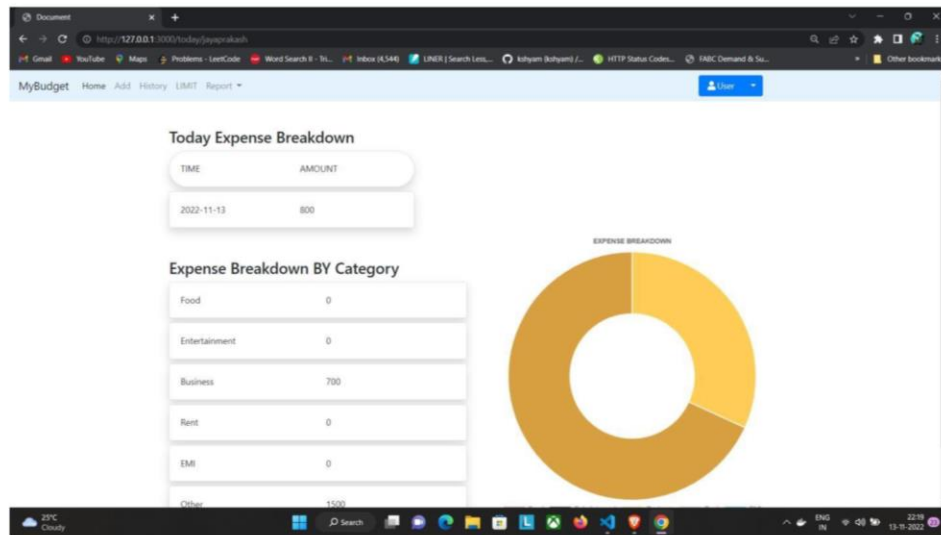
7.4 Database Schema

8. ADVANTAGES & DISADVANTAGES

Advantages

- Used to tracker our expenses

- Used to budget our plans

- Used to teach us the art of money management

- Used to keep track and show our expenses in graphical way.

- Warn us when we spend above our budget.

Disadvantages

- Any human emergency cannot be understood by the system and thus send

  warnings

- Our habit to sue traditional methods may disappear

9. Conclusion

Thus the app is deployed using cloud. The featur4es are added. The features include adding expenses manually, adding income, setting budget, sending warning when expenses exceeds the budget. The app uses db2 to store data of the user. The app is deployed and has run successfully.

This app can be used by the people to track their expenses. It can be used for people of any age and any income. The app help the users to keep track as we cannot carry a pen and paper all the time to record our expenses.

10. Future Scope

In this app we can link our bank account, so if any transaction via online it can easily be detected without us manually entering the expenses. We can connect our bank balance and thus from subtracting the expenses from that we can track our expenses and give graph based on that.

11. Appendix

Github link

https://github.com/IBM-EPBL/IBM-Project-19356-1659696546.git