

**PERSONAL EXPENSE TRACKER
APPLICATION**

PROJECT REPORT

Submitted by

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1. INTRODUCTION

1.1 PROJECT OVERVIEW

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.

A personal finance app will not only help you with budgeting and accounting but also give you helpful insights about money management.

1.2 PURPOSE

It is very vital to keep track of our finances in today's fast growing tech world with popularization of many digital payments. One of the shortcomings of digitalization of payments is that We do not know how much we spend on things without knowing it's use and the current balance we hold.

Our application aims to keep the user have a healthy usage of their funds, tracking their expenses , alerting them in case of abnormalities by sending them email alerts.

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM

A Study conducted with parents of college students shows that the people prefer and are getting comfortable in managing their finances through a mobile app and evolve from the age old paper system. They have understood the benefits in leveraging digital tools to get better insights and a bigger look over their finances.

Parents are worried that their children lack financial literacy unlike their global counterparts. They are looking for applications where their children can learn about spending money. This financial illiteracy is prevalent even among elders.

EXISTING SOLUTIONS:

Money View - Expense Manager App

MoneyView App reads all of the transactional SMS messages and provides you with real-time visibility into your finances. This app unearths the hidden financial data that sits idly in SMS logs and makes excellent use of it.

Key features of the App:

- Check your bank account balances.
- See the most recent banking transactions.
- The MoneyView app automatically categorises your payments and displays major areas of spending.
- View weekly and monthly summaries to help you avoid overspending and

improve the efficiency of your budget planning.

- It keeps track of your spending, sends personalised bill-paying reminders, finds relevant savings opportunities, and much more.
- Track your financial progress by looking at your spending trends over time.

Goodbudget - Budget & Finance App

This personal finance manager app acts as a proactive budget planner, assisting you in staying on top of your budget, bills, and finances. The personal finance app was designed for simple, real-time budget and financial tracking, making it one of the best expense tracker apps in India.

Key Features of the App:

- Data is backed up automatically and securely to Goodbudget's website.
- Disaggregate expense transactions
- Transactions that are scheduled and envelope fills
- Save time by using intelligent payee and category suggestions.
- Transfer funds between Envelopes and Accounts with ease.
- Match the budget period to the real-life situation.
- Analyse spending with the Spending by Envelope Report.
- Use the Income vs. Spending Report to keep track of your cash flow.
- Export transactions to CSV
- Carryover any unused funds to the next month as a reward for your incredible self-control.
- Plan your finances ahead of time to stay on track with your budget.

Realbyte Money Manager App

You can use the budget planner and spending tracker to keep track of your personal and business financial transactions, review financial data on a daily/weekly/monthly basis, and manage your assets.

Key Features of the App:

- System of double-entry bookkeeping

- Management of budgets and expenses
- Management of credit and debit cards
- Get access to statistics immediately.
- Bookmarking feature
- Backup/restore function

Monefy - Budget Manager and Expense Tracker App

Monefy tracks the user's expenses and compares them to the monthly income and the budget planner. Monefy's money manager app keeps your monthly budget in top shape. As a result, it could also serve as the best expense tracker app.

Key Features of the App:

- With the intuitive and simple-to-use interface, you can quickly add new records.
- Maintain a multi-currency track.
- Backup and export personal finance data with a single click.
- Protect your data with passcode protection.
- View your spending distribution on a simple chart, or get detailed information from the records list.
- Use a budget tracker to save money.
- Use your own Google Drive or Dropbox account to safely synchronise.
- Take control of recurring payments.
- Create multiple accounts.
- Use the built-in calculator to crunch numbers.

Wallet - Money, Budget, Finance & Expense Tracker App

Wallet can automatically track your daily expenses by syncing your bank account, view weekly expense reports, plan your shopping expenses, and share specific features with your loved ones. You can manage your money with a wallet from anywhere and at any time.

Key Features of the App:

- Transactions are automatically and securely synced, then intelligently categorised and budgeted.
- Simple graphs and financial overviews provide actionable insights into the state of your finances, including accounts, credit and debit cards, debts, and cash.
- Arrange your bills and keep track of their due dates.
- Examine upcoming payments and how they will affect your cash flow.
- Selected accounts can be shared with family, friends, or coworkers who need to work together on a budget. Everyone is welcome to contribute from any platform, including Android, iPhone, and the Web.
- Other features include support for multiple currencies, automatic cloud sync, receipt and warranty tracking, categories and templates, geo-mapping transactions, hash-tagging, shopping lists, exports to CSV/XLS/PDF, debt management, PIN security, standing orders, notifications, reports, and more.

Walnut - All Indian Banks Money Manager App

Walnut automates and secures the tracking of your monthly expenses. You can stay within your budget, pay your bills on time, and save more money each month by using the Walnut app. They also provide personal loans.

Key Features of the App:

- Keep a close eye on your credit card balances.
- Use BHIM UPI to send money.
- Locate ATMs that accept cash near you in real-time.
- Export your information and create expense reports (in PDF & CSV format).
- Verify the balance of your bank account.

- Keep track of train, cab, movie, and event reservations, among other things.
- Search and share information about places you visit with friends and social networks.
- Report your bank, card, or any other interesting messages directly from the app.

2.2 REFERENCES

1. <https://moneyview.in/insights/best-personal-finance-management-apps-in-india>
2. <https://www.factmr.com/report/personal-finance-mobile-app-market>
3. <https://www.moneytap.com/blog/best-money-management-apps/>
4. <https://relevant.software/blog/personal-finance-app-like-mint/>
5. <https://www.onmanorama.com/lifestyle/news/2022/01/11/financial-literacy-trend-among-todays-youth-investment.html>
6. <https://www.livemint.com/money/personal-finance/96-indian-parents-feel-their-children-lack-financial-know-how-survey-11661336110855.html>
7. <https://economictimes.indiatimes.com/small-biz/money/importance-of-financial-literacy-amongst-youngsters/articleshow/85655134.cms>
8. <https://www.news18.com/news/education-career/only-27-adults-16-7-of-indian-teenagers-financially-literate-4644893.html>

2.3 PROBLEM STATEMENT DEFINITION

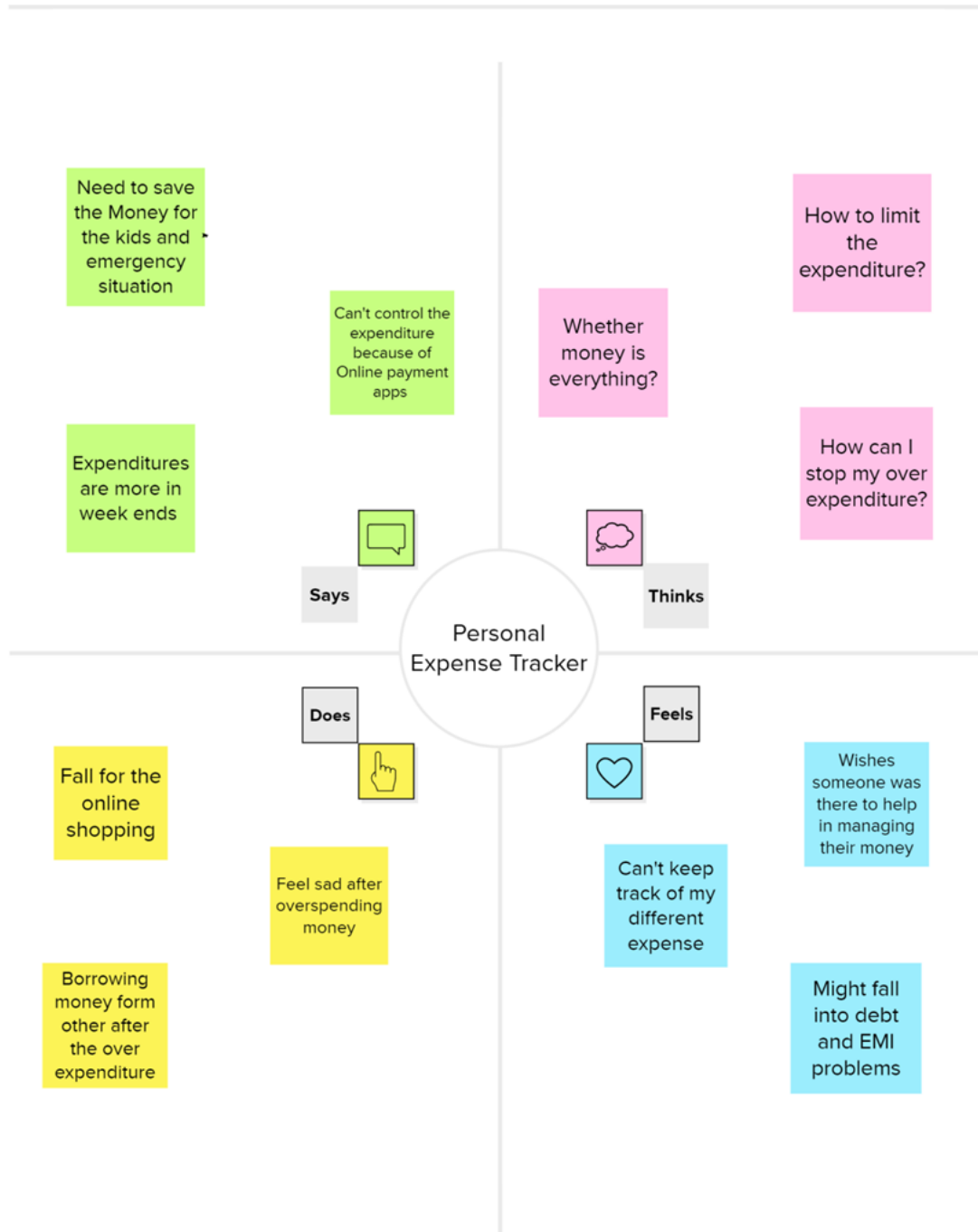
This ExpenseTracker is a web application that facilitates the users to keep track and

manage their personal as well as business expenses. This application helps the users to keep a digital diary. It will keep track of a user's income and expenses on a daily basis. The user will be able to add his/her expenditures instantly and can review them anywhere and anytime with the help of the internet. He/she can easily import transactions from his/her mobile wallets without risking his/her information and efficiently protecting his/her privacy. This expense tracker provides a complete digital solution to this problem. Excel sheets do very little to help in tracking. Furthermore, they don't have the advanced functionality of preparing graphical visuals automatically. Not only it will save the time of the people but also it will assure error free calculations. The user just has to enter the income and expenditures and everything else will be performed by the system.

Keywords: Expense Tracker, budget, planning, savings, graphical visualization of expenditure.

3.IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS



3.2 IDEATION AND BRAINSTORMING

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
3-8 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 as prompts 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

An expense tracking app is an exclusive suite of services for people who seek to handle their earnings and plan their expenses and savings efficiently. It helps you track all transactions like bills, refunds, payrolls, receipts, taxes, etc., on a daily, weekly, and monthly basis.



Related content

Keep it simple!
How to create a simple version of the complex in minutes per week.

[Open example](#)

2

Brainstorm

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

15 minutes

Rohish D

Build Mobile wallets for app

allow categories on expenditure

Send push Notification

Maintain Past History

Pranav Kumar P.S

Responsive Layout

save mobile user

various type of sound to alert

Harsh V Bhandari

allow dark mode

use ML algorithm

display data as CDV

QR code scan

Vignesh R

more login methods

provide multiple login at same time

add monthly limit

3

Group Ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, pick each cluster a representative user. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

30 minutes

Build Mobile wallets for app

allow dark mode

allow categories on expenditure

use ML algorithm

Send push Notification

Maintain Past History

add monthly limit

display data as CDV

QR code scan

provide multiple login at same time

save mobile user

various type of sound to alert

more login methods

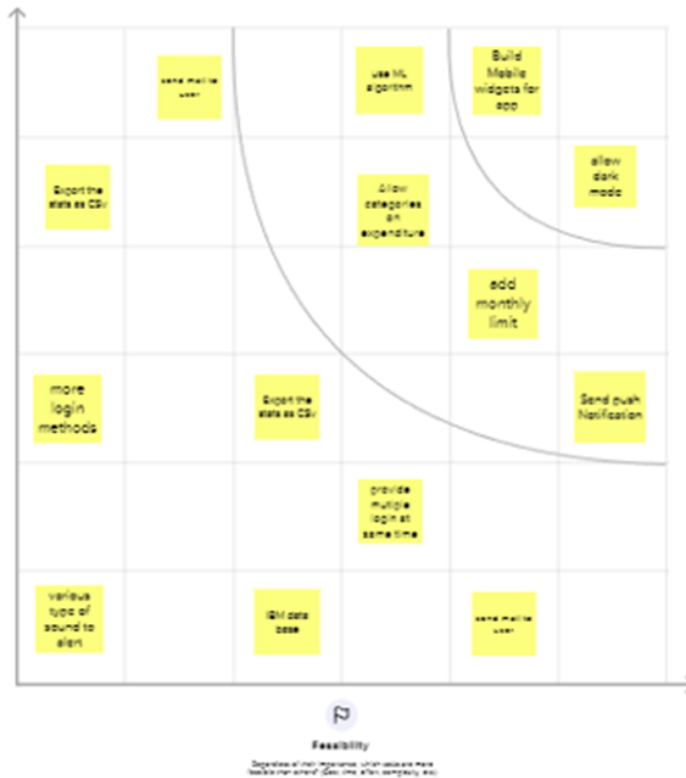




Prioritize

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

55 minutes



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](#)

3.3 PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to besolved)	Building a personal finance tracking application that will imbibe goodspending habits intostudents.

2.	Idea / Solution description	To build a web application that is deployed in IBM cloud and leverage mailing service likesendgrid to implement the same
3.	Novelty / Uniqueness	The stats generated withvisual graphs are more effective than log books. It also helps in using technology to gain better insights from patterns.
4.	Social Impact / Customer Satisfaction	Better financial knowledge is gained. Gamifiedapproach can be used to give self satisfaction. Reduced chances of bad debtin future.
5.	BusinessModel (Revenue Model)	Subscription can be incorporated to accesspremium tools within the app.
6.	Scalability of the Solution	As the application is containerized fr deployment. It can be easily scaledin a cloud service provider like IBM.

3.4 PROBLEM SOLUTION FIT

Project Title: Personal Expense Tracker Application

Project Design Phase-I - Solution Fit Template

Team ID: PNT2022TMD21408

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) Who is your customer? CS Predominantly Engineers who are just starting to earn and manage their personal finance. Typically from middle and lower class family, who badly need financial discipline .	6. CUSTOMER CONSTRAINTS CC What constraints prevent your customers from taking action or limit their choices of solutions? The impulse buying and lacking to awareness to look into bigger picture	5. AVAILABLE SOLUTIONS AS Which solutions are available to the customers when they face the problem Totally shunning to spend even on necessities under the impression that the spending could result in bad financial position. The existing solutions are otherwise over complicated and designed to extract data from user. Manual physical logging in time consuming	Explore AS, differentiate
	2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides. <ul style="list-style-type: none"> Logging expenses into categories Show historical stats Generate insightful charts Alert user to imbibe good discipline 	9. PROBLEM ROOT CAUSE RC What is the real reason that this problem exists? Lack of proper education in financial literacy in school education. More children are not given pocket money to learn by spending/wasting less / saving.	7. BEHAVIOUR BE What does your customer do to address the problem and get the job done? Get frustrated and fall into debt traps by taking unpayable loans for unnecessary items leading to increase in mental stress	
Focus on J&P, tap into BE, understand RC				Focus on J&P, tap into BE, understand RC

Identify strong TR & EM	3. TRIGGERS TR What triggers customers to act? Frequent sales in e-commerce platforms and seamless shopping experience online.	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 behavior.	8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 <ol style="list-style-type: none"> 1. Shop from e-commerce 2. Subscribe to OTT platforms 3. Order food frequently
	4. EMOTIONS: BEFORE / AFTER EM How do customers feel when they face a problem or a job and afterwards? Dejected and paranoid about the future as they would need relatively more money to provide for a family and to handle unexpected financial needs.	Graphical Application with simple UI and to the point clutter free objective. Avoids provision to pay through the app, to minimize the spending and ensure that only necessary spendings are made. The aim is to make the spending process harder throughout the application and keep it clean.	8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. <ol style="list-style-type: none"> 1. Shop in malls during sales 2. Keep the money somewhere around and forget about / lose it

Identify strong TR & EM

4.REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENT

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 Mobile number Registration through E-mail account
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User monthly expense tentative data	Data to be registered in the app
FR-4	User monthly income data	Data to be registered in the app
FR-5	Alert/Notification	Alert through Email Alert through SMS
FR-6	User Budget Plan	Planning and Tracking of user expense vs budget limit

4.2 NON-FUNCTIONAL REQUIREMENT

Non-functional Requirements:

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

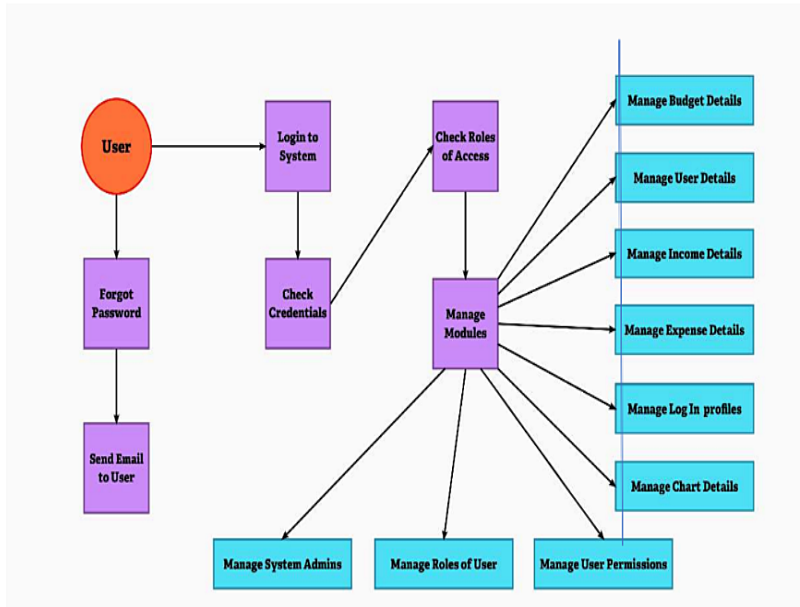
FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Effectiveness,efficiency and overall satisfaction of the user while interacting with our application.
NFR-2	Security	Authentication, authorization, encryption of the application
NFR-3	Reliability	Probability of failure-free operations in a specified environment for a specified time.
NFR-4	Performance	How the application is functioning and how responsive the application is to the end-users.
NFR-5	Availability	Without near 100% availability, application reliability and the user satisfaction will affect the solution.
NFR-6	Scalability	Capacity of the application to handle growth, especially in handling more users.

5.PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



5.2 SOLUTION AND TECHNICAL ARCHITECTURE

Solution Architecture:

Personal Expense Tracker Application

Category: Cloud App Development

Skills Required:

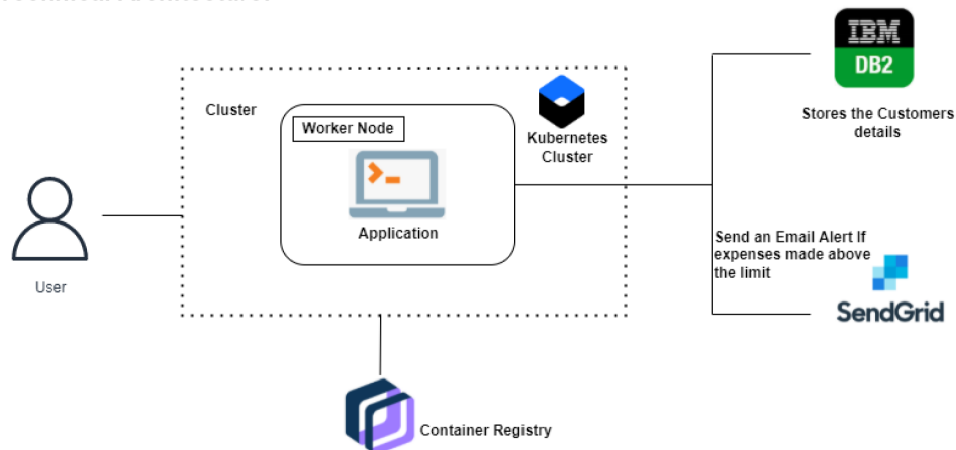
IBM Cloud,HTML,Javascript,IBM Cloud Object Storage,Python-Flask,Kubernetes,Docker,IBM DB2,IBM Container Registry

Project Description:

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.

Technical Architecture:



5.3 USER STORIES

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I can track my expenses and manage my monthly budget.	I can receive confirmation email & click confirm	High	Sprint-3
		USN-3	As a user, I can see if there is an excessive expense and if there is such a condition, I will be notified via email.	I can register & access the dashboard with Facebook Login	Low	Sprint-3
	Login	USN-4	As a user, I can login to the user dashboard and see the information about my incomes and expenses.	I can login to user dashboard and see the information	High	Sprint-1
	Dashboard	USN-5	As a user, I can login to user dashboard and see the information about my incomes and expenses.	I can view my daily expenses.	High	Sprint-2
Customer Care Executive			As a customer care executive, I can solve the log in issues and other issues of the application.	I can provide support or solution at any time 24*7	Medium	Sprint-4
Administrator			As an administrator, I can upgrade or update the application.	I can fix the bug which arises for the customers and users of the application.	Medium	Spring-4

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	Rohith D
		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Vignesh R
	Login	USN-3	As a user, I can log into the application by entering email & password	1	High	Pranav Kumar T S
	Dashboard	USN-4	Logging in takes to the dashboard for the logged user.	2	High	Harsh Bhandari
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	Vignesh R
	Charts	USN-2	Creating various graphs and statistics of customer's data	1	Medium	Pranav Kumar T S
	Connecting to IBM DB2	USN-3	Linking database with dashboard	2	High	Harsh Bhandari
		USN-4	Making dashboard interactive with JS	2	High	Rohith D
Sprint-3		USN-1	Wrapping up the server side works of frontend	1	Medium	Pranav Kumar T S
	Watson Assistant	USN-2	Creating Chatbot for expense tracking and for clarifying user's query	1	Medium	Harsh Bhandari
	SendGrid	USN-3	Using SendGrid to send mail to the user about their expenses	1	Low	Rohith D
		USN-4	Integrating both frontend and backend	2	High	Vignesh R
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	Harsh Bhandari
	Cloud Registry	USN-2	Uploading docker image to IBM Cloud registry	2	High	Rohith D
	Kubernetes	USN-3	Create container using the docker image and hosting the site	2	High	Vignesh R
	Exposing	USN-4	Exposing IP/Ports for the site	2	High	Pranav Kumar T S

6.2 SPRINT DELIVERY SCHEDULE

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	23 Oct 2022	28 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	30 Oct 2022	04 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	06 Nov 2022	11 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	13 Nov 2022	18 Nov 2022	20	19 Nov 2022

7. CODING AND SOLUTIONING

7.1 FEATURE -1

Added Authentication for users.

- User should register first using their name, Email, username, password
- User should login with their username and password.

Code link :

https://github.com/IBM-EPBL/IBM-Project-26798-1660038017/tree/main/Project%20Development%20Phase/Sprint%202/expense_tracker

7.2 FEATURE - 2

Added functionality to add, visualize transactions.

Code link:

https://github.com/IBM-EPBL/IBM-Project-26798-1660038017/blob/main/Project%20Development%20Phase/Sprint%203/expense_tracker/transaction.py

7.3 FEATURE - 3

Added feature to store transaction receipts securely.

Code link:

https://github.com/IBM-EPBL/IBM-Project-26798-1660038017/blob/main/Project%20Development%20Phase/Sprint%203/expense_tracker/storage.py

7.4 FEATURE - 4

Added Email service to alert users when their monthly expense exceeds the limit


Code link:


https://github.com/IBM-EPBL/IBM-Project-26798-1660038017/blob/main/Project%20Development%20Phase/Sprint%203/expense_tracker/mailjet.py

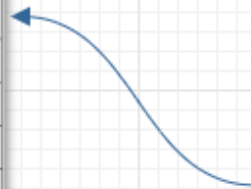
7.5 DATABASE SCHEMA



dbdesigner.net

User		
	id	integer
	name	varchar(255)
	username	varchar(255)
	email	varchar(255)
	password	varchar(255)
	balance	decimal
	limit	decimal

transaction		
	id	integer
	user_id	integer
	category	varchar(255)
	amount	decimal
	date	date
	receipt	varchar(255)



8. TESTING

8.1 TEST CASES

				Date	17-Nov-22
				Team ID	PNT2022TMID21408
				Project Name	Personal Expense Tracker Application
				Maximum Marks	4 marks
Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute
A_TC_OO1	UI	CSS	Verify the login page loads in both Desktop and Mobile devices		1.Enter URL and click go
A_TC_OO2	UI	CSS	Verify dark mode is working		1. Enable dark mode in system setting 2. Enter URL and click go
A_TC_OO1	Functional	Auththentication	Verify user is able to log into application with Valid credentials		1.Enter URL and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button
A_TC_OO2	Functional	Auththentication	Verify user is able to log into application with Invalid credentials		1.Enter URL and click go 2.Click on sign in button 3.Enter InValid username in Username text box 4.Enter valid password in password text box 5.Click on login button
A_TC_OO3	Functional	Auththentication	Verify user is redirected to dashboad if user is already logged in		1.Enter URL and click go 2.Click on sign in button 3. Enter valid username and password then click sign in 4. Enter URL and click go
A_TC_OO4	Functional	Auththentication	Verify user is able to sign up with non unique username		1.Enter URL and click go 2.Click on register button 3.Enter already used username in username text box 4.Enter data in other text box 5.Click on sign up button
T_TC_OO1	Functional / UI	Transactions	Verify user is able to view transactions		1.Enter URL and click go 2.Sign in into account. 3.Click view transactions button
T_TC_OO2	Functional	Transactions	Verify user is able to add transactions		1.Enter URL and click go 2.Sign in into account. 3.Click add transactions button 4. Enter the prompted data related to transaction
D_TC_OO1	Functional	Dashboard	Verify user is able to set monthly expense limit		1.Enter URL and click go 2.Sign in into account. 3.Click set transaction limit 4. Enter max amount
T_TC_OO3	Security	Transactions	Verify the user data are securely stored		1. Enter the URL of transaction page without logging in
T_TC_OO4	Functional	Transactions	Verify user is alerted by email if current month expense exceeds the monthly expense limit		1. Enter user URL of transa1. 2.Sign in into account. 3.Click add transactions button 4. Enter the prompted data related to transaction with amount greater
D_TC_OO2	Functional	Dashboard	Verify user is able to log out		1. Sign into application. 2. Click log out button

Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation(Y/N)	BUG ID	Executed By
	Login/Signup popup should display	Working as expected	Pass				Harsh Bhandari V Pranavkumar T S Rohith D Vignesh R
	Application should load in dark mode	Working as expected	Pass				
Valid username and password	User should navigate to dashboard	Working as expected	Pass				
InValid username and password	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass				
Valid username and password	Application should redirect to dashhboard page	Working as expected	Pass				
Duplicate username	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass				
Valid username and password	Application should show all transactions added	Working as expected along with sun burst chart	Pass				
Valid username and password Transaction details	Application should store the transaction data	Working as expected	Pass				
Valid username and password Monthly max transction limit	Application should store the limit and respond the status	Working as expected	Pass				
URL of transaction page	Application should redirect to login page	Working as expected	Pass				
Valid username and password Transaction details	Application should send email to user	Working as expected	Pass				
Valid username and password	Application should log out	Working as expected	Pass				

8.2 USER ACCEPTANCE TESTING

Acceptance Testing UAT Execution & Report Submission

Date	17 November 2022
Team ID	PNT2022TMID21408
Project Name	Personal Expense Tracker Application
Maximum Marks	4 Marks

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the Personal Expense Tracker Application project at the time of the release to User Acceptance Testing (UAT).

2. Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	5	0	0	0	5
Duplicate	1	0	0	0	1
External	2	0	0	0	2
Fixed	11	2	4	0	17
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	0	1
Won't Fix	0	0	2	0	2
Totals	19	2	9	0	30

3. Test Case Analysis

This report shows the number of test cases that have passed, failed, and untested

Section	Total Cases	Not Tested	Fail	Pass
CSS	2	0	0	2
Authentication	5	0	0	5
Security	1	0	0	1

Transaction	3	0	0	3
Dashboard	1	0	0	1

9. RESULTS

9.1 PERFORMANCE METRICS

TEAM ID		PNT2022TMD21408		Project Name		Personal Expense Tracker Application			
NFT - Risk Assessment									
S.No	Project Name	Scope/feature	Functional Changes	Hardware Changes	Software Changes	Impact of Downtime	Load/Volume Changes	Risk Score	Justification
1	login authentication	New	Moderate		Moderate		>30 to 50 %	ORANGE	Required feature
2	Transaction Management	New	High		Moderate		>30 to 50 %	RED	Indispensable feature
3	Containerization	New	Low		Moderate		>5 to 10%	ORANGE	Feature to make it deployable

NFT - Detailed Test Plan			
S.No	Project Overview	NFT Test approach	Assumptions/Dependencies/Risks
1	Personal Expense Tracker Application	Stress Test	Proper internet Connection User Credentials
			Approvals/SignOff Approved

End Of Test Report				
S.No	Project Overview	NFT Test approach	NFR - Met	Test Outcome
1	Personal Expense Tracker Application	Stress Test		Application is scalable and can be scaled based on available resources
				GO/NO-GO decision
				Recommendations
				Identified Defects (Detected/Closed/Open)
				Approvals/SignOff

Approved

10. ADVANTAGES AND DISADVANTAGES

ADVANTAGES:

One of the major pros of tracking spending is always being aware of the state of one's personal finances. Tracking what you spend can help you stick to your budget, not just in a general way, but in each category such as housing, food, transportation and gifts. While a con is that manually tracking all cash that is spent can be irritating as well as time consuming, a pro is that doing this automatically can be quick and simple. Another pro is that many automatic spending tracking software programs are available for free. Having the program on a hand-held device can be a main pro since it can be checked before spending occurs in order to be sure of the available budget.

DISADVANTAGES:

A con with any system used to track spending is that one may start doing it then taper off until it's forgotten about all together. Yet, this is a risk for any new goal such as trying to lose weight or quit smoking. If a person first makes a budget plan, then places money in savings before spending any each new pay period or month, the tracking goal can help. In this way, tracking spending and making sure all receipts are accounted for only needs to be done once or twice a month. Even with constant tracking of one's spending habits, there is no guarantee that financial goals will be

met. Although this can be considered to be a con of tracking spending, it could be changed into a pro if one makes up his or her mind to keep trying to properly manage all finances.

11. CONCLUSION

A comprehensive money management strategy requires clarity and conviction for decision- making. You will need a defined goal and a clear vision for grasping the business and personal finances. That's when an expense tracking app comes into the picture. An expense tracking app is an exclusive suite of services for people who seek to handle their earnings and plan their expenses and savings efficiently. It helps you track all transactions like bills, refunds, payrolls, receipts, taxes, etc., on a daily, weekly, and monthly basis.

12. FUTURE SCOPE

1. Add a watson assistant chatbot to application which would help give financial advice to user in a personalised manner.
2. Perform analysis of expenses of user with average expenses of all users, so that user can get idea of how is his/her expenses compared to others
3. Ability to provide valuable insights.
4. Optimize sales processes to generate more revenue through enhanced data collection.
5. With the help of AI, your mobile app can predict your next purchase, according to your spending behavior. Moreover, it can recommend products and provide unique insights on saving money. It brings out the factors causing fluctuations in your expenses.

6.

13. APPENDIX:

SOURCE CODE

Link: <https://github.com/IBM-EPBL/IBM-Project-26798-1660038017/tree/main/Final%20Deliverables/Final%20Code>

GITHUB AND PROJECT DEMO LINK

GitHub link: <https://github.com/IBM-EPBL/IBM-Project-26798-1660038017>

Video Demo Link: <https://youtu.be/oMicHFyOboU>