GOVERNMENT COLLEGE OF ENGINEERING
(Formerly IRTT)
ERODE-638 316

BONAFIDE CERTIFICATE

Certified that this project titled **"Personal Expense Tracker Application"** is the bonafide work done by **"Ganapathi I(731119104012),Gopi G(731119104014), Jayaprakash R(731119104020), Anbu Selvam A (731119104005)"** of the VII semester of **COMPUTER SCIENCE & ENGINEERING** branch during the academic year **2022-23** in the **HX8001 – Professional Readiness for Innovation , Employability and Entrepreneurship**

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PERSONAL EXPENSE TRACKER

1 INTRODUCTION

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.

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.

1.2 Purpose

- **No Need to install web application:** the problem of installing web application avoided on any device. So, reducing space and time related problems.
- **Remotely Accessible:** a web-based application can be used remotely via a network connection that is platform independent.
- **Movability and Repository:** to reduce the problem of movability and repository field by using to make the concept of web-based application.
- **Cloud Storage:** Cloud Storage allows developers to store and retrieve data from the cloud database. The data stored in cloud will not expire. This means that data will persist even if the tab or the browser window is closed.

➤ **Voice Features:** we have used Speechly for building real-time multimodal voice user interfaces. It enables developers and designers to enhance their current touch user interface with voice functionalities for better user experience.

2. LITERATURE SURVEY

2.1. Existing problem

- Lack of proper planning of out income.
- Person has to keep a log in a diary or in a computer.
- All the calculations need to be done by the user.
- Overload to rely on the daily entry of the expenditure
- At the end of the month, we start to have money crisis.

2.2. Reference

S. NO	**TITLE OF THE PAPER**	**AUTHOR**	**PUBLISHED YEAR**	**ABSTRACT**
1.	Expense Tracker	Aman Garg, Mukul Goel, Sagar Mittal, Mr.Shekhar Singh	April 2021	This Expense Tracker 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 digitaldiary. It will keep track of a user&#39;s income and expenses daily. Tracking your expenses daily can not only save your amount, but it can also

				assist you set financial goals for the longer term. If you know exactly where your amount goes every month, you will easily see where some cutbacks and compromises can be made.
2.	Family Expense Manager Applicat io n	Rajaprabh a M N	2017	The user can make use of this application in his/her daily life. After being used it can be a part of daily life to update and view daily expenses and family expenses. This helps to keep track of expenses &amp; manage it for the user as they are busy in their daily routine, they are not able to keep track of their incomes &amp; expenses
3.	Daily	Nuura	2021	This application is an

	Expense Tracker Mobile Applicat io n	Najati Binti Mustafa		easier alternative to keeping track of users' use of money than the traditional way of writing their expenses in their diary. This application implements least squares method which helps to predict an outcome by finding the best fit line for a set of data. The use of the least squares method will help users in obtaining a successful budget planned with the prediction of the outcome of the budget based on expenses
4.	Daily Expense Tracker	Shivam Mehra, Prabhat Parashar	2021	This paper represents a Daily Expense Tracker is a tool that resides on a remote server and is accessible via browsers. It creates a digital record of the income and expense of the user. It input from the user a income, source of this income and the date of earning that income

				and creates a transaction entry under income category sums to the total amount of income and making real time changes. The web application will also be voice powered and all the functionalities can be used with voice commands.
5.	Expendit ur e manage me nt system	Dr.V.Geeth a, G. Nikhitha.	2022	In this method this device can be utilized by any individual to govern their income expenditure from each day to annual basis and to hold an eye on their spending, Including the person to whom the payments were made and the purpose for the payment. On a weekly, monthly, and yearly basis, details of expenses will be displayed in the form of a pie chart. It aids us in remembering and adding information about what

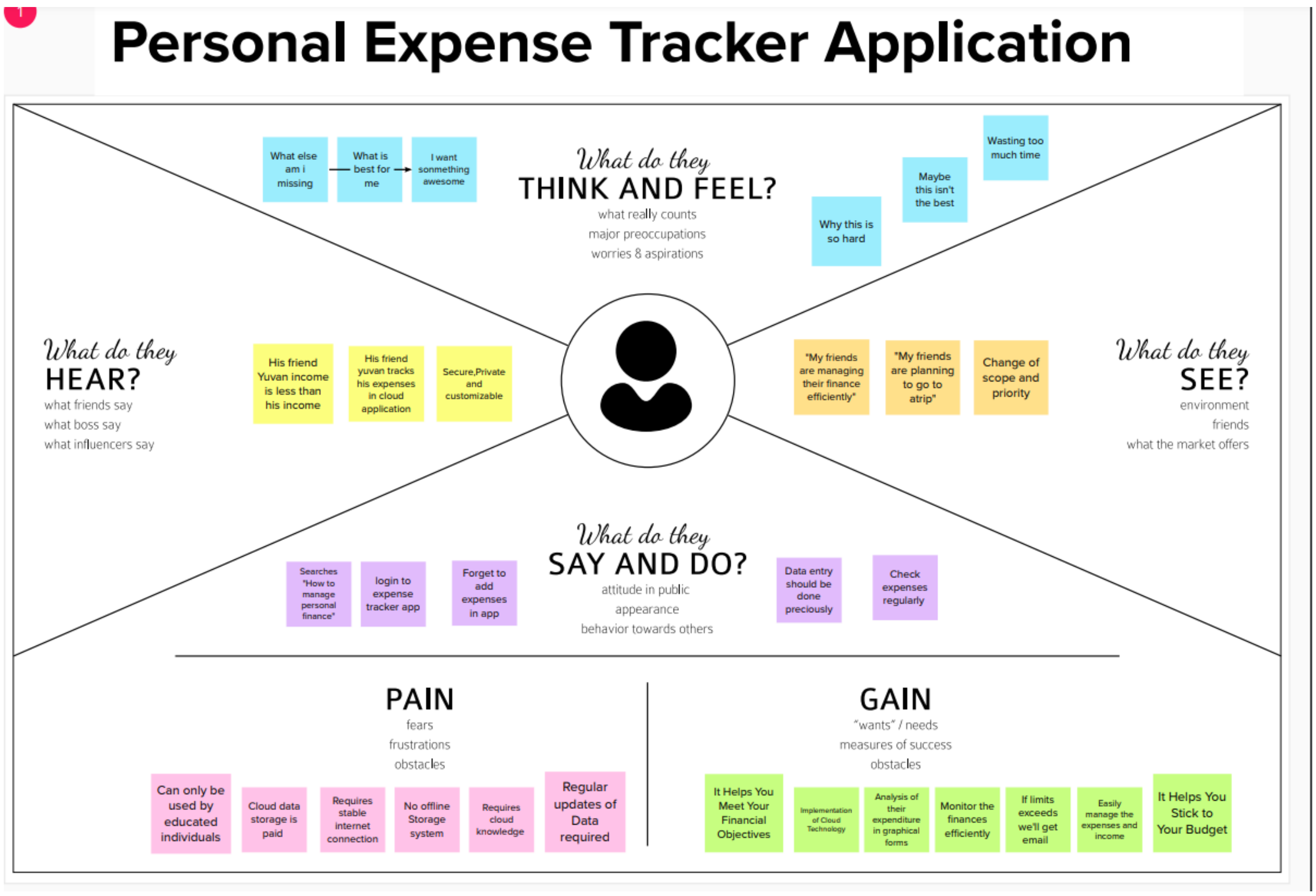
				money we receive from others and what costs or payments we must make on a given date or month.

2.3. Problem Statement Definition

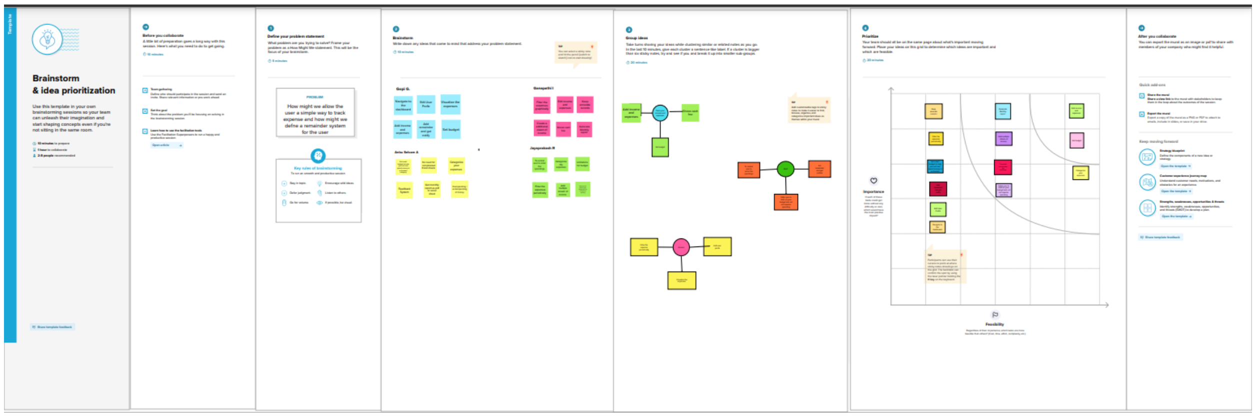
Many organizations have their own system to record their income and expenses, which they feel is the main key point of their business progress. It is a good habit for a person to record daily expenses and earning but due to unawareness and lack of proper applications to suit their privacy, lacking decision making capacity people are using traditional note keeping methods to do so. Due to lack of a complete tracking system, there is a constant overload to rely on the dailyentry of the expenditure and toestimation till the end of the month.

3. IDEATION & PROPOSED SOLUTION

3.1. Empathy Map Canvas


Personal Expense Tracker Application
What do they THINK AND FEEL?
what really counts
major preoccupations
worries & aspirations
What else am i missing
What is best for me
I want sonmething awesome
Why this is so hard
Maybe this isn't the best
Wasting too much time
What do they HEAR?
what friends say
what boss say
what influencers say
His friend Yuvan income is less than his income
His friend yuvan tracks his expenses in cloud application
Secure,Private and customizable
What do they SEE?
environment
friends
what the market offers
"My friends are managing their finance efficiently"
"My friends are planning to go to atrip"
Change of scope and priority
What do they SAY AND DO?
attitude in public
appearance
behavior towards others
Searches "How to manage personal finance"
login to expense tracker app
Forget to add expenses in app
Data entry should be done preciously
Check expenses regularly
PAIN
fears
frustrations
obstacles
Can only be used by educated individuals
Cloud data storage is paid
Requires stable internet connection
No offline Storage system
Requires cloud knowledge
Regular updates of Data required
GAIN
"wants" / needs
measures of success
obstacles
It Helps You Meet Your Financial Objectives
Implementation of Cloud Technology
Analysis of their expenditure in graphical forms
Monitor the finances efficiently
If limits exceeds we'll get email
Easily manage the expenses and income
It Helps You Stick to Your Budget

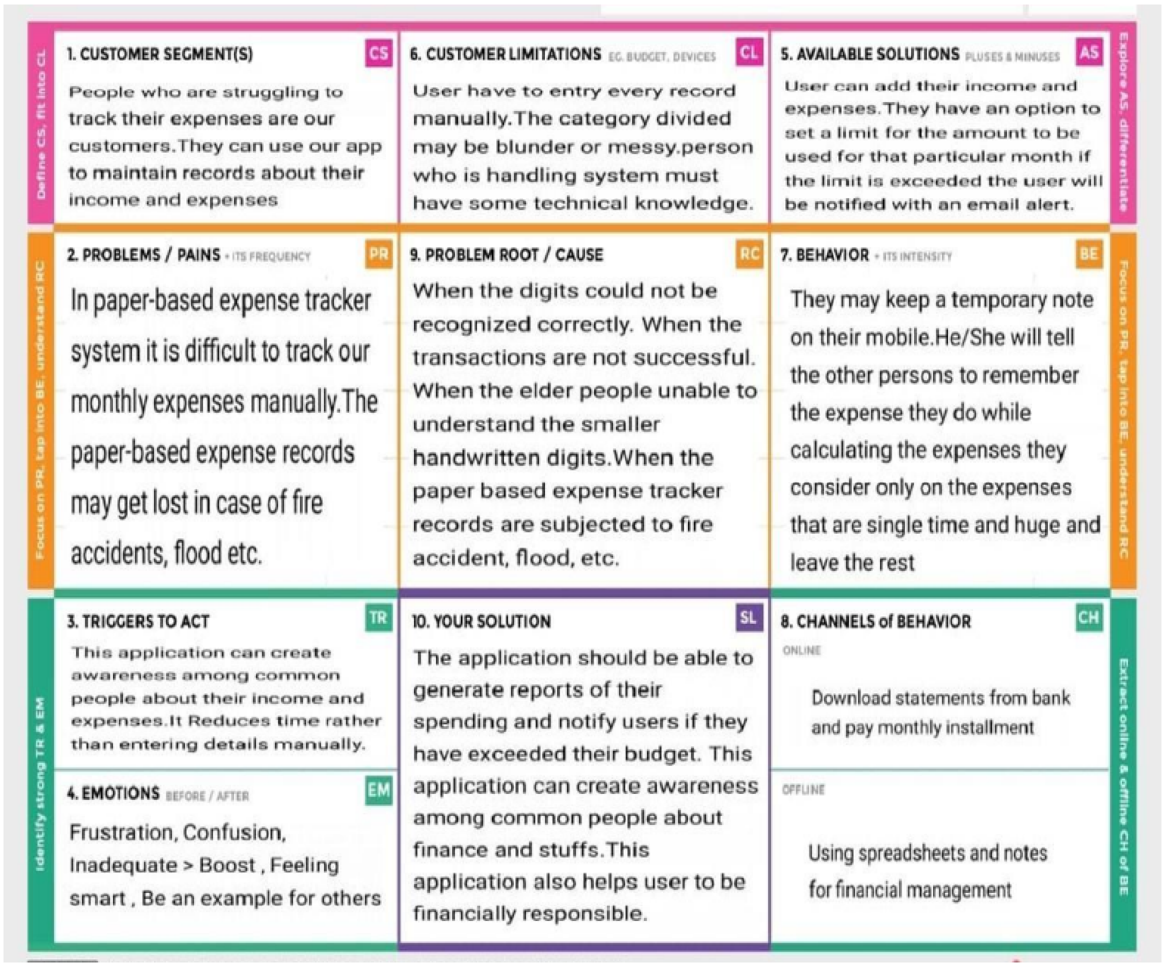
3.2. Ideation & Brainstorming



3.3. Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	In paper-based expense tracker system it is difficult to track our monthly expenses manually. The paper-based expense records may get lost in case of fire accidents, flood etc.
2.	Idea / Solution description	This app makes your life easier by helping you to manage your finances efficiently. This personal expense app will not only help you with budgeting and accounting but also give you helpful insights about financial management.
3.	Novelty / Uniqueness	The user gets notified when their expense exceeds the limit and also it reminds the user when they forgot to make entry.
4.	Social Impact / Customer Satisfaction	It will help the people to track their expenses and also alerts when they exceed the limit of their budget.
5.	Business Model (Revenue Model)	We can provide the application in a subscription based.
6.	Scalability of the Solution	This application can handle large number of users simultaneously.

3.4 Problem Solution Fit



Define CS, fit into CL

1. CUSTOMER SEGMENT(S) CS

People who are struggling to track their expenses are our customers.They can use our app to maintain records about their income and expenses

6. CUSTOMER LIMITATIONS EG. BUDGET, DEVICES CL

User have to entry every record manually.The category divided may be blunder or messy.person who is handling system must have some technical knowledge.

5. AVAILABLE SOLUTIONS PLUSES & MINUSES AS

User can add their income and expenses.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.

Explore AS, differentiate

Focus on PR, tap into BE, understand RC

2. PROBLEMS / PAINS + ITS FREQUENCY PR

In paper-based expense tracker system it is difficult to track our monthly expenses manually.The paper-based expense records may get lost in case of fire accidents, flood etc.

9. PROBLEM ROOT / CAUSE RC

When the digits could not be recognized correctly. When the transactions are not successful. When the elder people unable to understand the smaller handwritten digits.When the paper based expense tracker records are subjected to fire accident, flood, etc.

7. BEHAVIOR + ITS INTENSITY BE

They may keep a temporary note on their mobile.He/She will tell the other persons to remember the expense they do while calculating the expenses they consider only on the expenses that are single time and huge and leave the rest

Focus on PR, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS TO ACT TR

This application can create awareness among common people about their income and expenses.It Reduces time rather than entering details manually.

4. EMOTIONS BEFORE / AFTER EM

Frustration, Confusion, Inadequate > Boost , Feeling smart , Be an example for others

10. YOUR SOLUTION SL

The application should be able to generate reports of their spending and notify users if they have exceeded their budget. This application can create awareness among common people about finance and stuffs.This application also helps user to be financially responsible.

8. CHANNELS of BEHAVIOR CH

ONLINE

Download statements from bank and pay monthly installment

OFFLINE

Using spreadsheets and notes for financial management

Extract online & offline CH of BE

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
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Financial Accounts	Account Details Verification of Details
FR-4	User Dashboard	Expense Data Data Records
FR-5	User Notifications	System Access Real time Alerting
FR-6	Security of User Data	Secured Database Data Security Algorithms

4.2 Non-functional Requirements

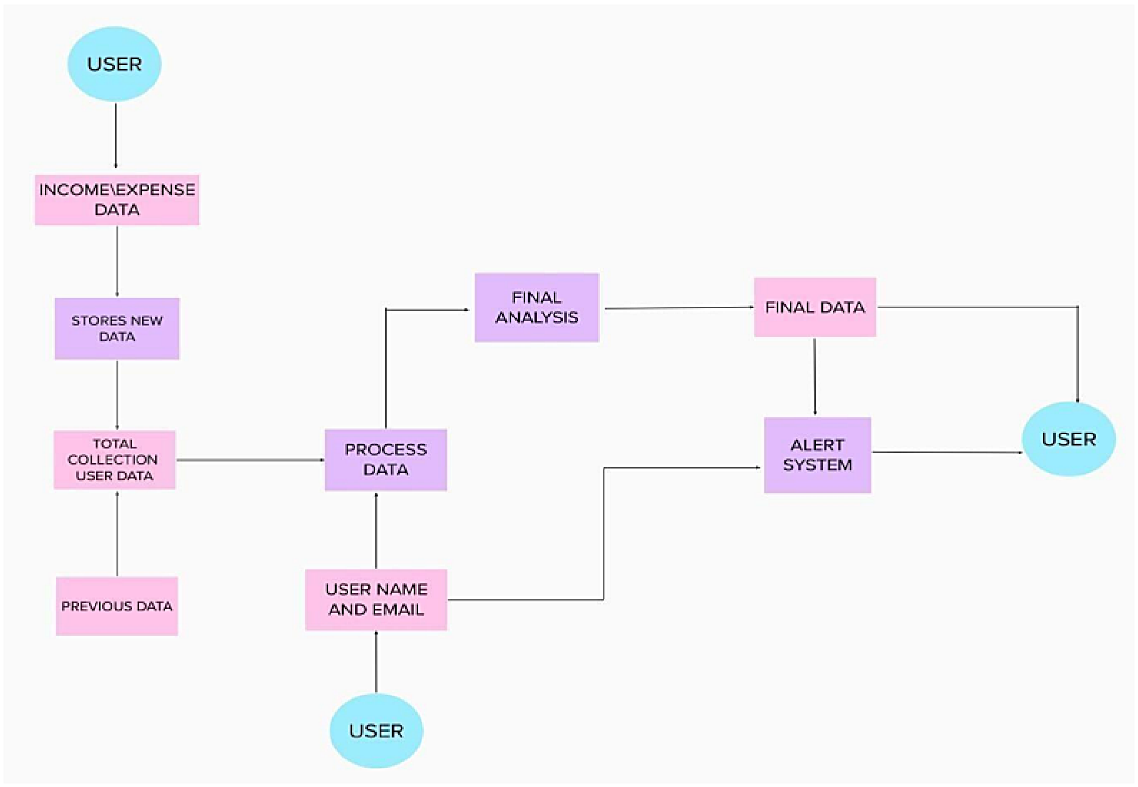
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	By using this application, the user can keep track of their expenses and can ensure that user's money is used wisely.
NFR-2	**Security**	Maintain user personal details in a encrypted manner by using data security algorithms .
NFR-3	**Reliability**	It will maintain a proper tracking of day-to-day expenses in an efficient manner.
NFR-4	**Performance**	By enter our incoming and departing cash, and the software can help you keep and monitor it with at-most quality and security with high performance.
NFR-5	**Availability**	Using charts and graphs may help you monitor your budgeting and assets.
NFR-6	**Scalability**	Rely on your budgeting app to track, streamline, and automate all the recurrent expenses and remind you on a timely basis.

5. Project Design

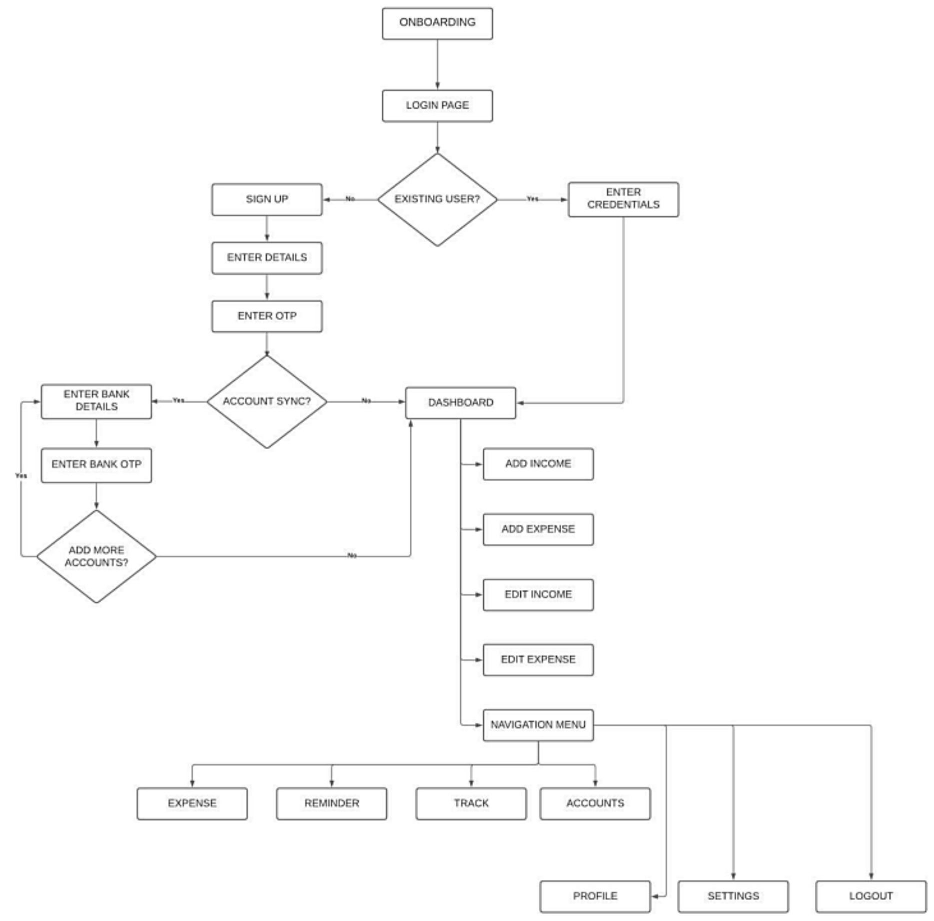
5.1. Data Flow Diagrams

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.

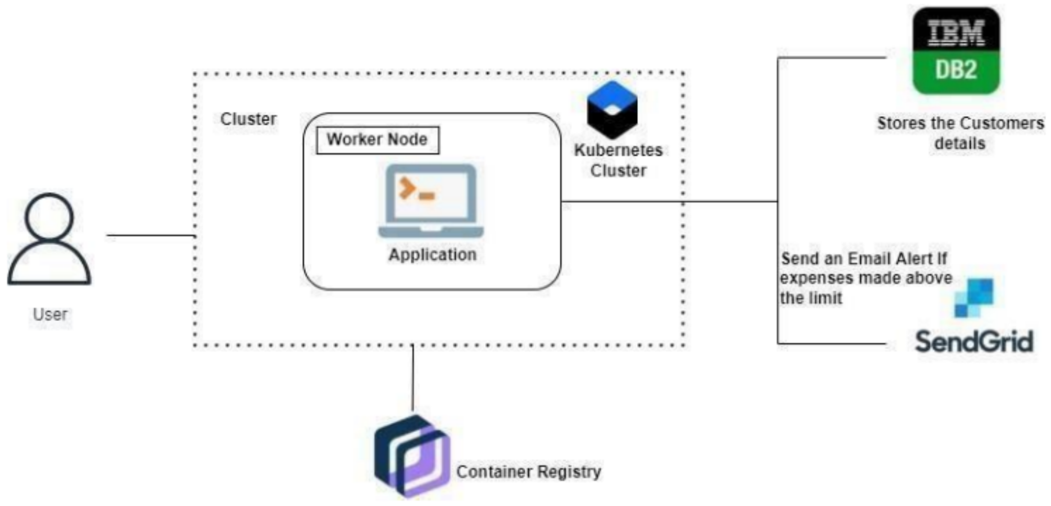


5.2. Solution & Technical Architecture

Solution architecture:



Technical Architecture



5.3. User Stories

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, password, and confirming my password.	I can access my account / dashboard.	High	Sprint - 1

	Login	USN - 2	As a user, I can login to 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 - 3	As a user, I can enter my income and expenditure details.	I can view my daily expenses.	High	Sprint – 2
	Expense Update	USN - 4	As a user, I can track my expenses and manage my monthly budget.	I can track my expenses and manage my monthly budget.	High	Sprint – 3
	Email Alert	USN - 5	As a user, I can see if there is an excessive expense and if there is such condition, I will be notified via e-mail.	I can receive e mail, if there is an excessive expense.	Medium	Sprint – 3
Customer Care Executive	Customer Care	USN – 6	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	Application	USN - 7	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	Sprint – 4

6. PROJECT PLANNING & SCHEDULING

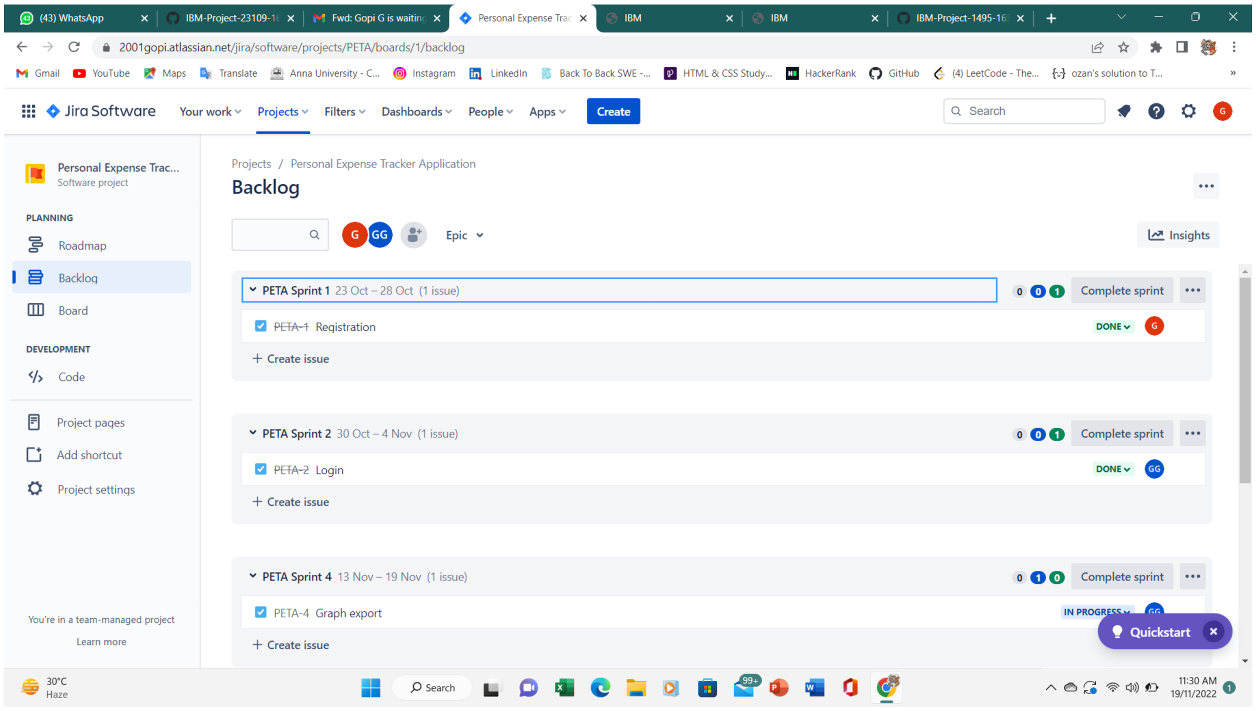
6.1. Sprint Planning & Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Homepage	USN-1	AS a user I can view the index page to see the about of the Expense tracker	10	High	Gopi
Sprint-1	Registration	USN-2	As a User, I need to register user id and passcode for every workers over there in municipality	10	High	Ganapathi
Sprint-1	Login	USN-3	As a user, I need to login with user id and password to get in to the website	10	High	Jayaprakash
Sprint-2	Dashboard	USN-4	As a User, I will follow Co-Admin's instruction to reach the filling bin in short roots and save time	20	Low	Gopi Jayaprakash
Sprint-3	Add Expenses	USN-5	As a User I will add my expense throughout the month I spend on	20	Medium	Ganapathi Anbuselvam
Sprint-3	Total Expense Graph	USN-6	As a User I can view my expense in a graph of overview of the expense I spend.	20	Medium	Gopi
Sprint-4	Deployment in cloud	USN-7	As a User I can access the cloud to store my data of expense	20	High	Gopi Ganapathi Jayaprakash Anbuselvam

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

6.3. Reports from JIRA



Projects / Personal Expense Tracker Application

Backlog

PETA Sprint 1 23 Oct – 28 Oct (1 issue) 0 0 1

~~PETA-1~~ Registration DONE

+ Create issue

PETA Sprint 2 30 Oct – 4 Nov (1 issue) 0 0 1

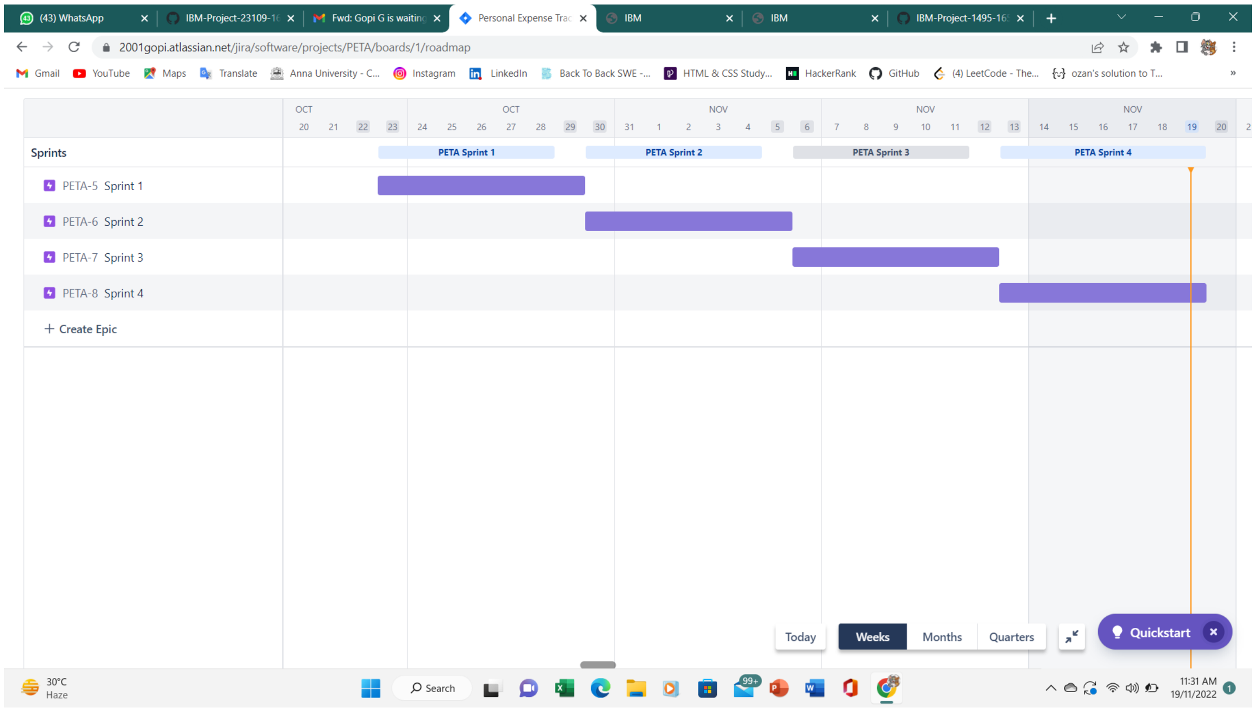
~~PETA-2~~ Login DONE

+ Create issue

PETA Sprint 4 13 Nov – 19 Nov (1 issue) 0 1 0

PETA-4 Graph export IN PROGRESS

+ Create issue



Sprints

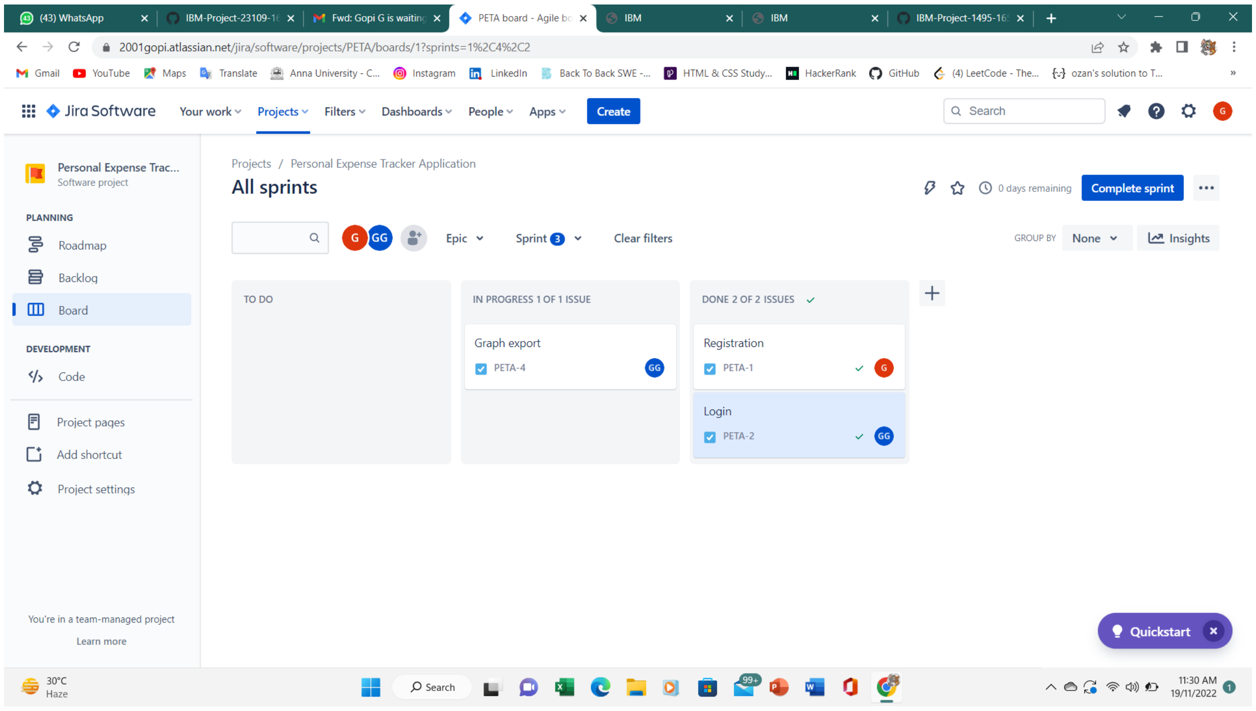
PETA-5 Sprint 1

PETA-6 Sprint 2

PETA-7 Sprint 3

PETA-8 Sprint 4

+ Create Epic



Personal Expense Trac...
Software project

PLANNING
Roadmap
Backlog
Board

DEVELOPMENT
Code

Project pages
Add shortcut
Project settings

You're in a team-managed project
Learn more

Projects / Personal Expense Tracker Application

All sprints

0 days remaining
Complete sprint

Epic Sprint 3 Clear filters GROUP BY None Insights

TO DO	IN PROGRESS 1 OF 1 ISSUE	DONE 2 OF 2 ISSUES
	Graph export PETA-4 GG	Registration PETA-1 G
		Login PETA-2 GG

Quickstart

7. CODING & SOLUTIONING

7.1. Feature 1

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.

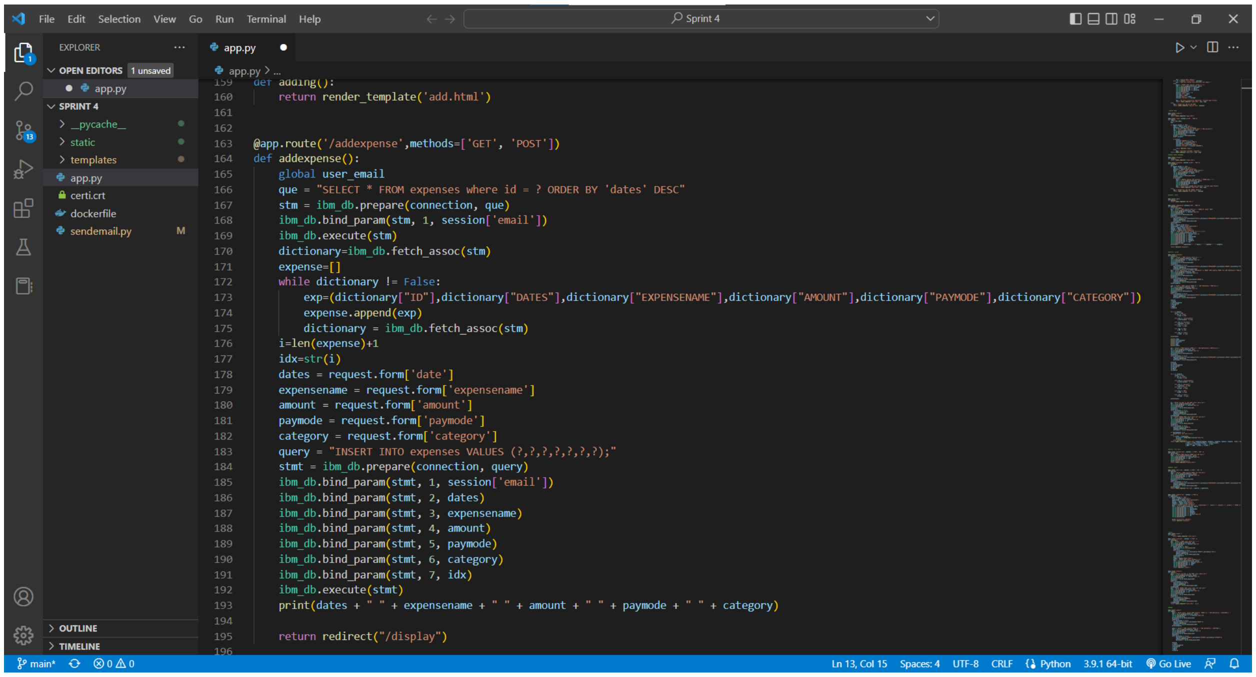
Personal finance applications will ask users to add their expenses and based on their expenses wallet balance will be updated which will be visible to the user. Also, users can get an analysis of their expenditure in graphical forms. They have an option to set a limit for the amount to be used for that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

Software Required

- Python
- Flask
- Docker
- Kubernetes
- IBM DB2

System Required

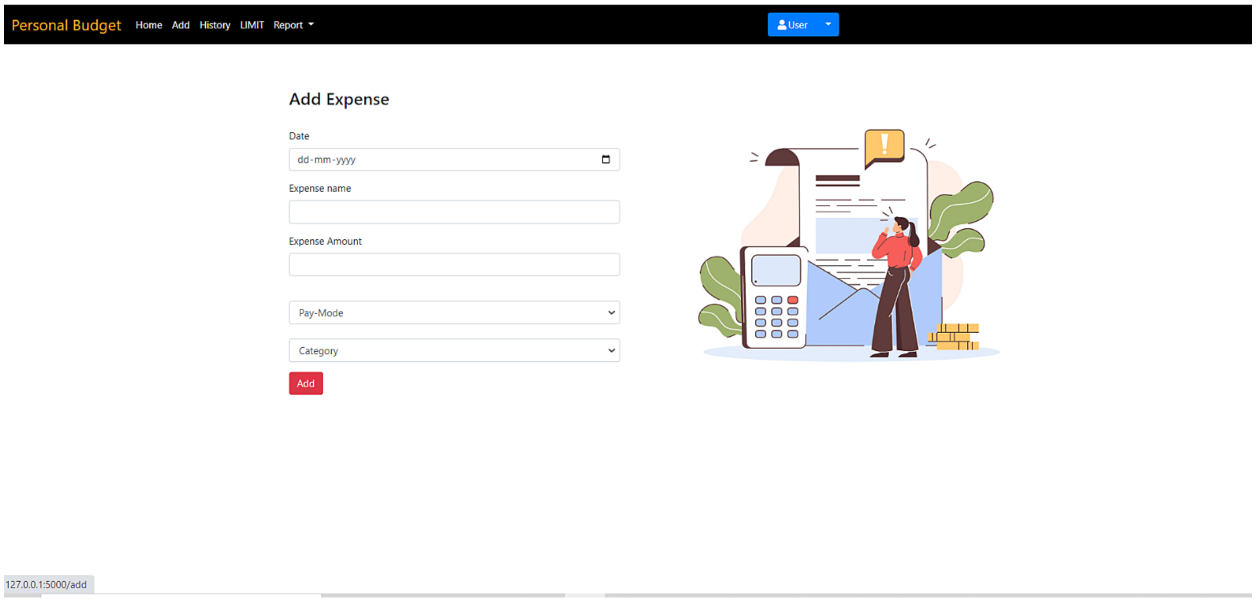
- 8GB RAM.
- Intel Core i3.
- OS-Windows/Linux/MAC .
- Laptop or Desktop



```python
def adding():
    return render_template('add.html')


@app.route('/addexpense',methods=['GET', 'POST'])
def addexpense():
    global user_email
    que = "SELECT * FROM expenses where id = ? ORDER BY 'dates' DESC"
    stm = ibm_db.prepare(connection, que)
    ibm_db.bind_param(stm, 1, session['email'])
    ibm_db.execute(stm)
    dictionary=ibm_db.fetch_assoc(stm)
    expense=[]
    while dictionary != False:
        exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"])
        expense.append(exp)
        dictionary = ibm_db.fetch_assoc(stm)
    i=len(expense)+1
    idx=str(i)
    dates = request.form['date']
    expensename = request.form['expensename']
    amount = request.form['amount']
    paymode = request.form['paymode']
    category = request.form['category']
    query = "INSERT INTO expenses VALUES (?,?,?,?,?,?,?);"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.bind_param(stmt, 2, dates)
    ibm_db.bind_param(stmt, 3, expensename)
    ibm_db.bind_param(stmt, 4, amount)
    ibm_db.bind_param(stmt, 5, paymode)
    ibm_db.bind_param(stmt, 6, category)
    ibm_db.bind_param(stmt, 7, idx)
    ibm_db.execute(stmt)
    print(dates + " " + expensename + " " + amount + " " + paymode + " " + category)

    return redirect("/display")
```



Add Expense

Date

dd-mm-yyyy

Expense name

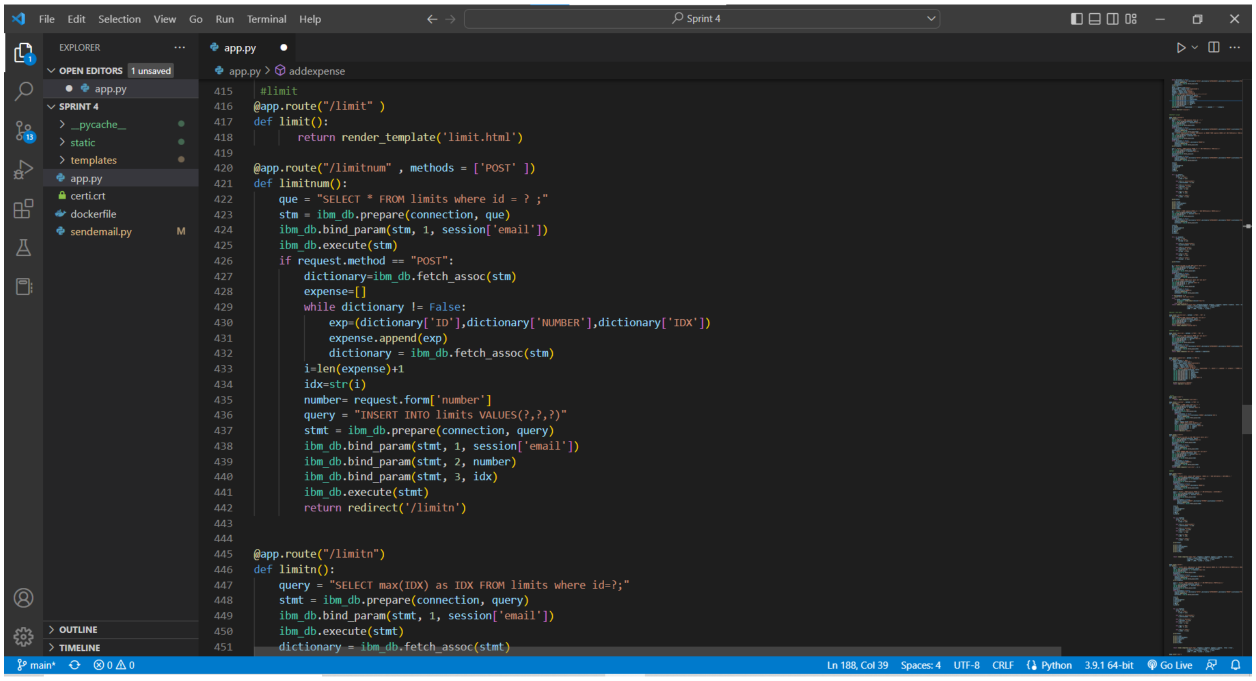
Expense Amount

Pay-Mode

Category

Add

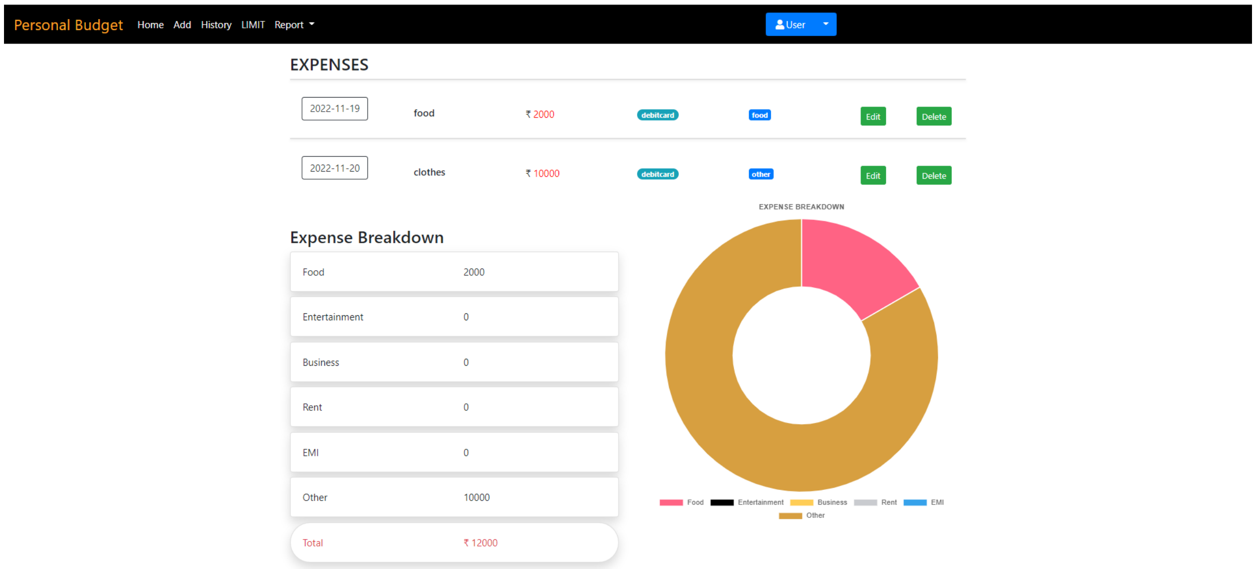
127.0.0.1:5000/add



```python
#limit
@app.route("/limit" )
def limit():
       return render_template('limit.html')

@app.route("/limitnum" , methods = ['POST' ])
def limitnum():
    que = "SELECT * FROM limits where id = ? ;"
    stm = ibm_db.prepare(connection, que)
    ibm_db.bind_param(stm, 1, session['email'])
    ibm_db.execute(stm)
    if request.method == "POST":
        dictionary=ibm_db.fetch_assoc(stm)
        expense=[]
        while dictionary != False:
            exp=(dictionary['ID'],dictionary['NUMBER'],dictionary['IDX'])
            expense.append(exp)
            dictionary = ibm_db.fetch_assoc(stm)
        i=len(expense)+1
        idx=str(i)
        number= request.form['number']
        query = "INSERT INTO limits VALUES(?,?,?)"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, session['email'])
        ibm_db.bind_param(stmt, 2, number)
        ibm_db.bind_param(stmt, 3, idx)
        ibm_db.execute(stmt)
        return redirect('/limitn')


@app.route("/limitn")
def limitn():
    query = "SELECT max(IDX) as IDX FROM limits where id=?;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.execute(stmt)
    dictionary = ibm_db.fetch_assoc(stmt)
```

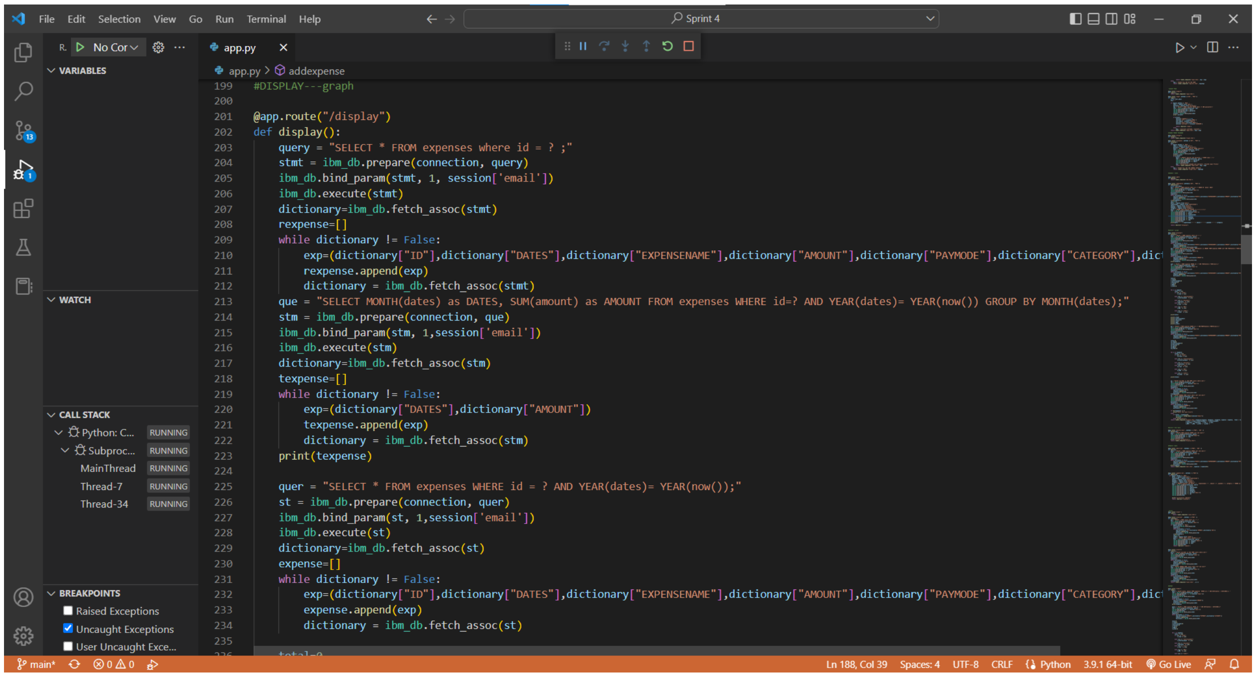


EXPENSES

2022-11-19	food	₹ 2000	debitcard	food	Edit	Delete
2022-11-20	clothes	₹ 10000	debitcard	other	Edit	Delete

Expense Breakdown

Food	2000
Entertainment	0
Business	0
Rent	0
EMI	0
Other	10000
Total	₹ 12000

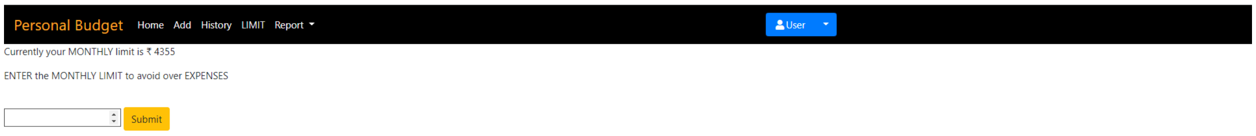


```python
#DISPLAY---graph

@app.route("/display")
def display():
    query = "SELECT * FROM expenses where id = ? ;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.execute(stmt)
    dictionary=ibm_db.fetch_assoc(stmt)
    rexpense=[]
    while dictionary != False:
        exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dic
        rexpense.append(exp)
        dictionary = ibm_db.fetch_assoc(stmt)
    que = "SELECT MONTH(dates) as DATES, SUM(amount) as AMOUNT FROM expenses WHERE id=? AND YEAR(dates)= YEAR(now()) GROUP BY MONTH(dates);"
    stm = ibm_db.prepare(connection, que)
    ibm_db.bind_param(stm, 1,session['email'])
    ibm_db.execute(stm)
    dictionary=ibm_db.fetch_assoc(stm)
    texpense=[]
    while dictionary != False:
        exp=(dictionary["DATES"],dictionary["AMOUNT"])
        texpense.append(exp)
        dictionary = ibm_db.fetch_assoc(stm)
    print(texpense)

    quer = "SELECT * FROM expenses WHERE id = ? AND YEAR(dates)= YEAR(now());"
    st = ibm_db.prepare(connection, quer)
    ibm_db.bind_param(st, 1,session['email'])
    ibm_db.execute(st)
    dictionary=ibm_db.fetch_assoc(st)
    expense=[]
    while dictionary != False:
        exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dic
        expense.append(exp)
        dictionary = ibm_db.fetch_assoc(st)

    total=0
```



Currently your MONTHLY limit is ₹ 4355

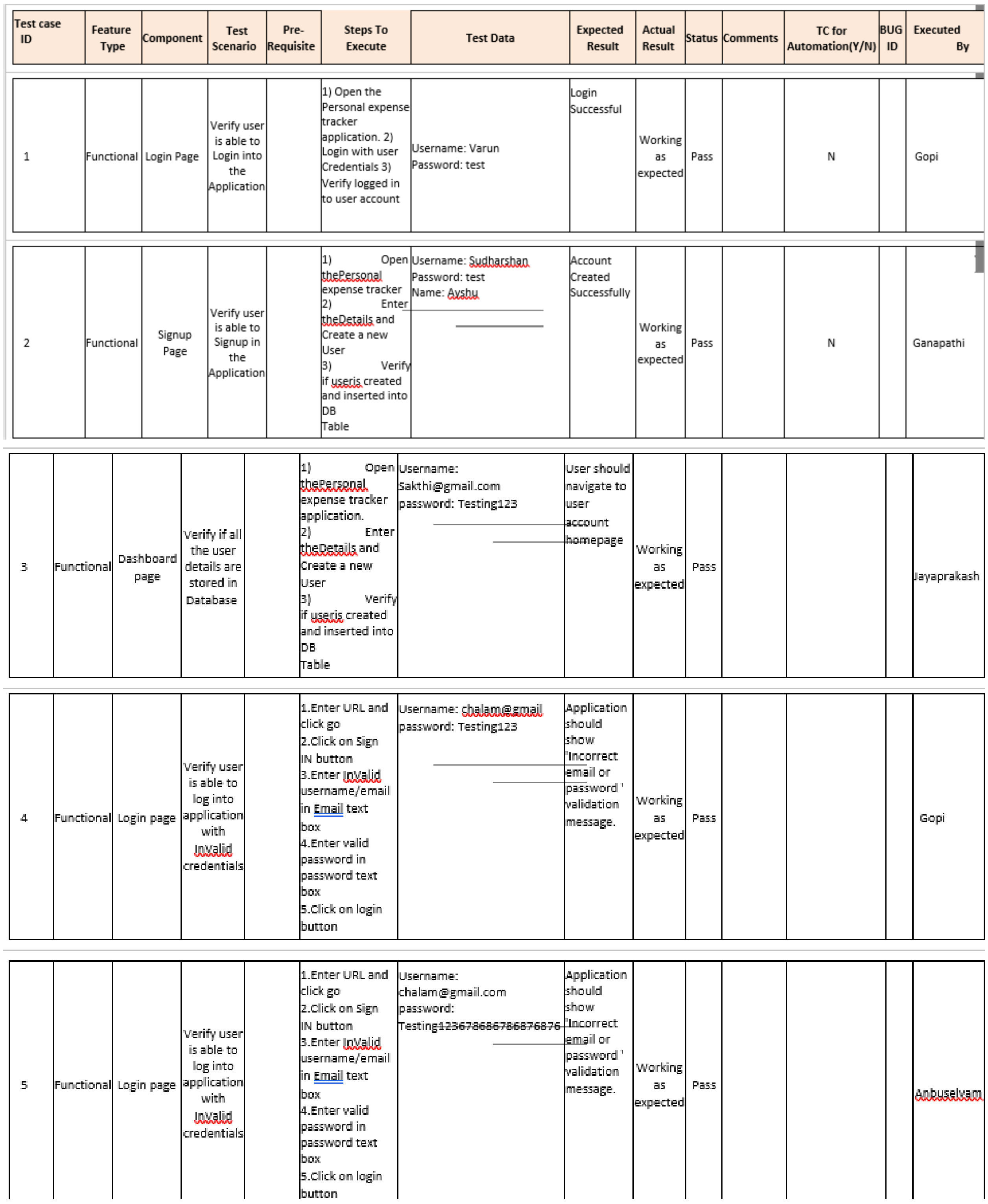
ENTER the MONTHLY LIMIT to avoid over EXPENSES

7.2. Feature 2

Tracking your expenses can save your amount, but it can also help you set and work for financial goals for the future. If you know exactly where your amount is going every month, you can easily see where some cutbacks and compromises can be made and are possible. The project what we have developed words more efficient than the other available income and expense tracker. The project successfully avoids the manual calculation for avoiding calculation the income and expense per month and save time of user. The modules are developed with efficient, reliable and also in an attractive manner.

8. TESTING

8.1. Test case



Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation(Y/N)	BUG ID	Executed By
1	Functional	Login Page	Verify user is able to Login into the Application		1) Open the Personal expense tracker application. 2) Login with user Credentials 3) Verify logged in to user account	Username: Varun Password: test	Login Successful	Working as expected	Pass		N		Gopi
2	Functional	Signup Page	Verify user is able to Signup in the Application		1) Open thePersonal expense tracker 2) Enter theDetails and Create a new User 3) Verify if useris created and inserted into DB Table	Username: Sudharshan Password: test Name: Ayshu	Account Created Successfully	Working as expected	Pass		N		Ganapathi
3	Functional	Dashboard page	Verify if all the user details are stored in Database		1) Open thePersonal expense tracker application. 2) Enter theDetails and Create a new User 3) Verify if useris created and inserted into DB Table	Username: Sakthi@gmail.com password: Testing123	User should navigate to user account homepage	Working as expected	Pass				Jayaprakash
4	Functional	Login page	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/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: chalam@gmail password: Testing123	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass				Gopi
5	Functional	Login page	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/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: chalam@gmail.com password: Testing123678686786876876	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass				Anbuselvam

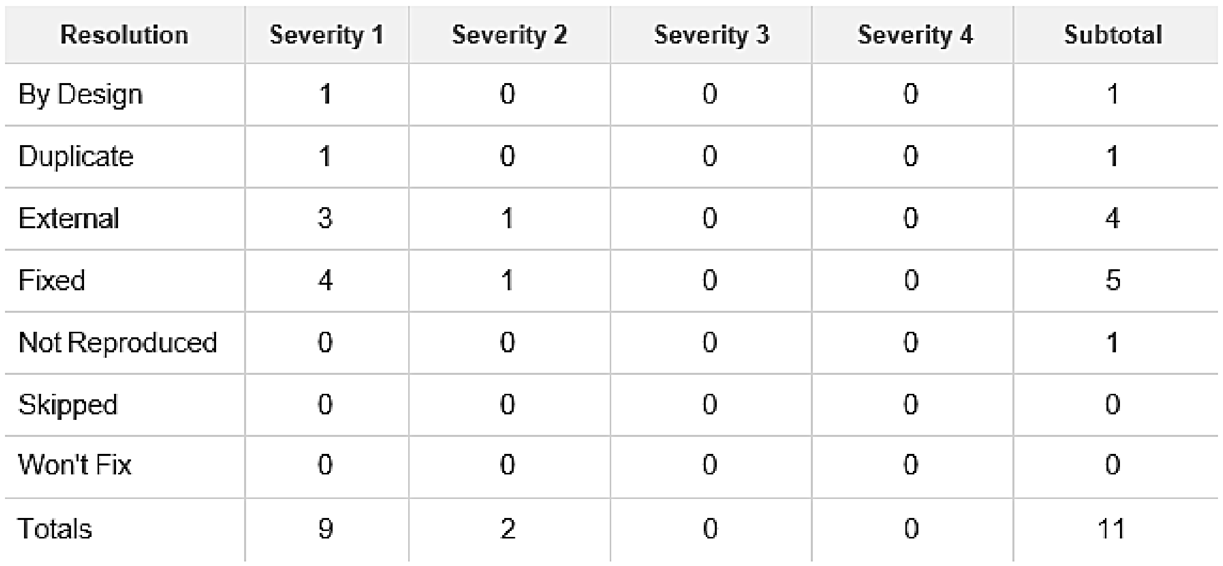
8.2. User Accepatance Testing

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] project at the time of the release to User Acceptance Testing (UAT).

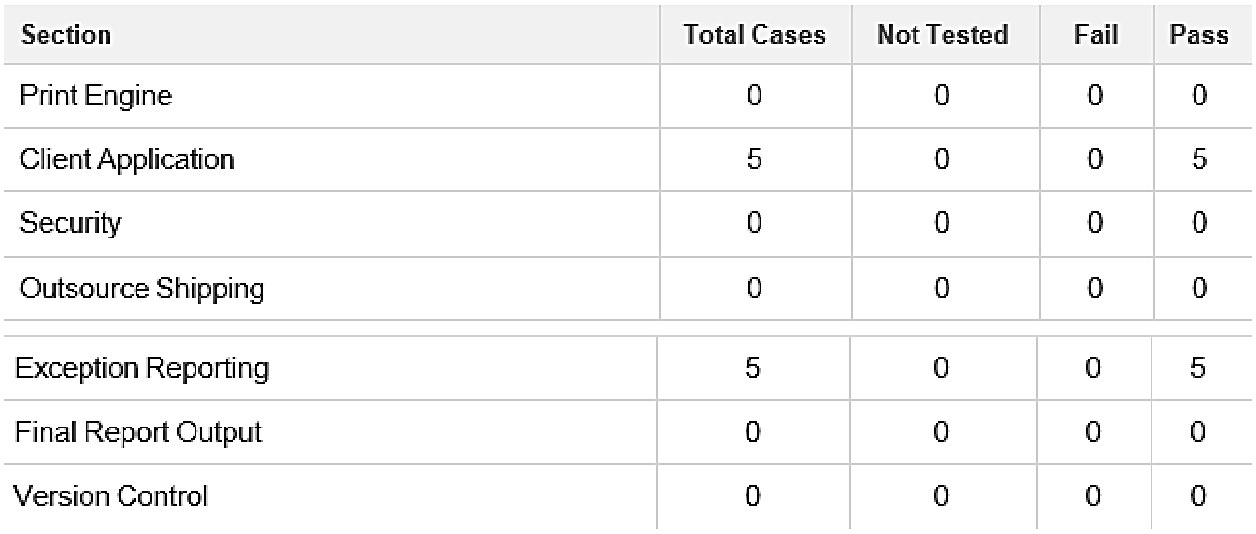
2.Defect Analysis

This reportshows the numberof resolved or closed bugs at each severity level, and howthey were resolved



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

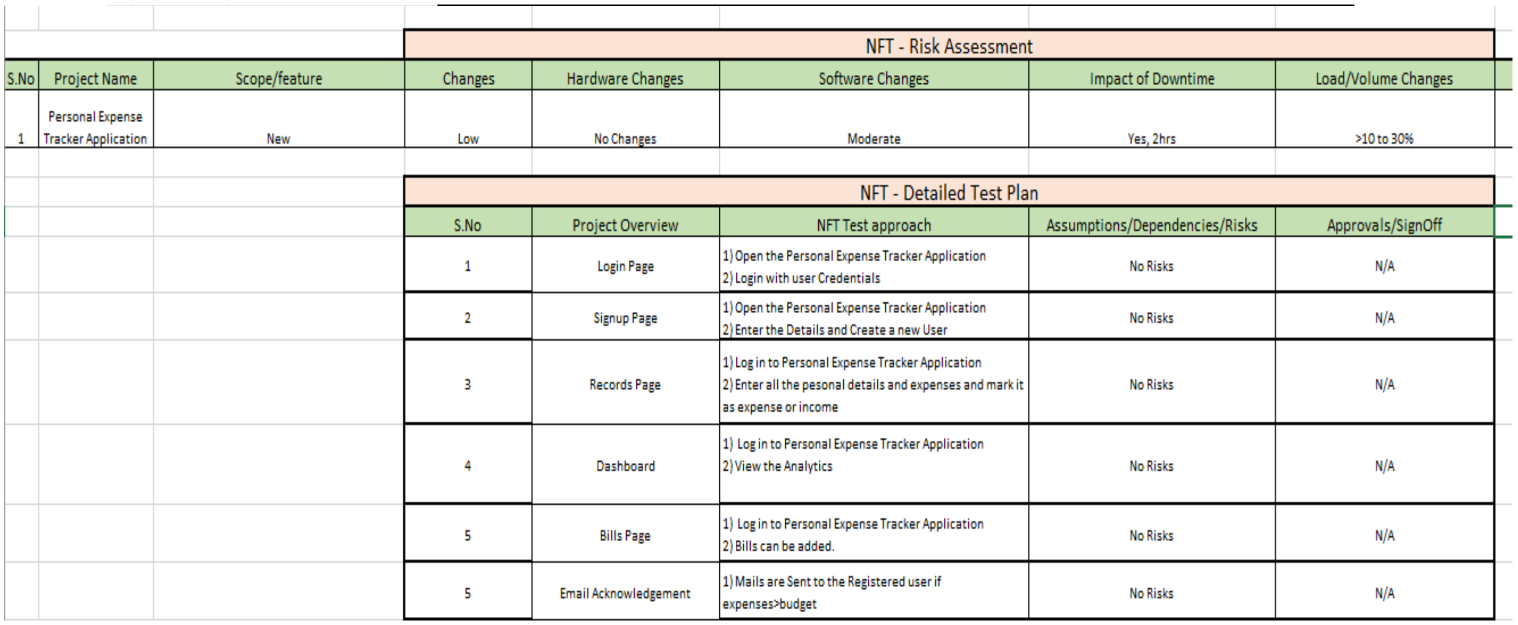
3.Testcase Analysis



Section	Total Cases	Not Tested	Fail	Pass
Print Engine	0	0	0	0
Client Application	5	0	0	5
Security	0	0	0	0
Outsource Shipping	0	0	0	0
Exception Reporting	5	0	0	5
Final Report Output	0	0	0	0
Version Control	0	0	0	0

9. RESULT

9.1. Performance Metrics

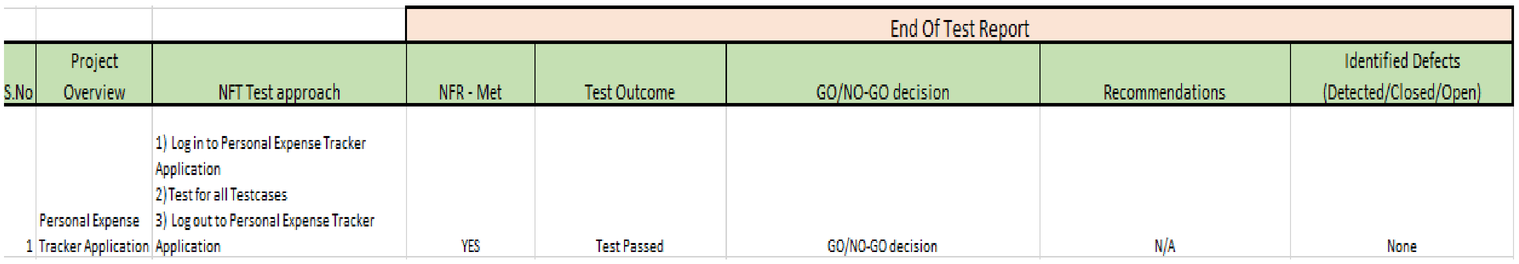


NFT - Risk Assessment

S.No	Project Name	Scope/feature	Changes	Hardware Changes	Software Changes	Impact of Downtime	Load/Volume Changes
1	Personal Expense Tracker Application	New	Low	No Changes	Moderate	Yes, 2hrs	>10 to 30%

NFT - Detailed Test Plan

S.No	Project Overview	NFT Test approach	Assumptions/Dependencies/Risks	Approvals/SignOff
1	Login Page	1) Open the Personal Expense Tracker Application 2) Login with user Credentials	No Risks	N/A
2	Signup Page	1) Open the Personal Expense Tracker Application 2) Enter the Details and Create a new User	No Risks	N/A
3	Records Page	1) Log in to Personal Expense Tracker Application 2) Enter all the pesonal details and expenses and mark it as expense or income	No Risks	N/A
4	Dashboard	1) Log in to Personal Expense Tracker Application 2) View the Analytics	No Risks	N/A
5	Bills Page	1) Log in to Personal Expense Tracker Application 2) Bills can be added.	No Risks	N/A
5	Email Acknowledgement	1) Mails are Sent to the Registered user if expenses>budget	No Risks	N/A



End Of Test Report

S.No	Project Overview	NFT Test approach	NFR - Met	Test Outcome	GO/NO-GO decision	Recommendations	Identified Defects (Detected/Closed/Open)
1	Personal Expense Tracker Application	1) Log in to Personal Expense Tracker Application 2) Test for all Testcases 3) Log out to Personal Expense Tracker Application	YES	Test Passed	GO/NO-GO decision	N/A	None

10. ADVANTAGES & DISADVANTAGES

10.1. Advantages

Knowing what you spend will help you to:

- Create a monthly budget
- Know where you&#39;re spending more than you actually think you are
- Figure out ways to cut back on your spending
- Know how much extra payments you can make towards your debt
- Plan for future large purchases
- Create a savings plan for putting money away every month
- Plan for retirement
- Create an investment strategy with extra money

10.2. Disadvantages

- Having security issues
- Need to update often
- Lots of manual work

11. CONCLUSION

Tracking your expenses can save your amount, but it can also help you set and work for financial goals for the future. If you know exactly where your amount is going every month, you can easily see where some cutbacks and compromises can be made and are possible. The project what we have developed words more efficient than the other available income and expense tracker. The project successfully avoids the manual calculation for avoiding calculation the income and expense per month and save time of user. The modules are developed with efficient, reliable and also in an attractive manner.

12. FUTURE SCOPE

Provision to add different currencies will be added so that this application is not just limited to USA but also can be used worldwide and the currency converters will be designed and added in order to convert the different currency rates. In order to make it more user friendly and less user intensive, when the user tries to add the same category or vendor to an expense/income record, a duplicate alert will be presented showing the same category/vendor which the user entered previously for some expense/income and then he can tap on it and the entries will be automatically filled for the current record.

13. APPENDIX

13.1. Source Code

app.py

```
from flask import Flask, render_template, request, redirect, session ,url_for
import ibm_db
import re
import sendemail

app = Flask(__name__)

hostname = '1bbf73c5-d84a-4bb0-85b9-ab1a4348f4a4.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud;'
uid = 'vjx02808'
pwd = 'ZheXo0qLEishDDb0'
driver = "{IBM DB2 ODBC DRIVER}"
db_name = 'Bludb'
port = '32286'
protocol = 'TCPIP'
cert = "certi.crt"
dsn = (
    "DATABASE ={0};"
    "HOSTNAME ={1};"
    "PORT ={2};"
    "UID ={3};"
    "SECURITY=SSL;"
    "PROTOCOL={4};"
    "PWD ={6};"
).format(db_name, hostname, port, uid, protocol, cert, pwd)
connection = ibm_db.connect(dsn, "", "")
app.secret_key = 'a'


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

```

```python
@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():
    global user_email
    msg = ''
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']
        password = request.form['password']
        query = "SELECT * FROM register WHERE email=?;"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, email)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        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:
            query = "INSERT INTO register values(?,?,?);"
            stmt = ibm_db.prepare(connection, query)
            ibm_db.bind_param(stmt, 1, username)
            ibm_db.bind_param(stmt, 2, email)
            ibm_db.bind_param(stmt, 3, password)
            ibm_db.execute(stmt)
            session['loggedin'] = True
            session['id'] = email
            user_email = email
            session['email'] = email
            session['username'] = username

                msg = 'You have successfully registered ! Proceed Login Process'
            return render_template('login.html', msg = msg)
    else:
        msg = 'PLEASE FILL OUT OF THE FORM'
        return render_template('register.html', msg=msg)



 #LOGIN--PAGE

@app.route("/signin")
def signin():
    return render_template('login.html')

@app.route('/login',methods =['GET', 'POST'])
def login():
    global user_email
    msg = ''

      if request.method == 'POST' :
          email = request.form['email']
          password = request.form['password']
              sql = "SELECT * FROM register WHERE email =? AND password=?;"
          stmt = ibm_db.prepare(connection, sql)
          ibm_db.bind_param(stmt,1,email)
          ibm_db.bind_param(stmt,2,password)
          ibm_db.execute(stmt)
          account = ibm_db.fetch_assoc(stmt)
          print (account)
```

```python

        if account:
            session['loggedin'] = True
            session['id'] = account['EMAIL']
            user_email=  account['EMAIL']
            session['email']=account['EMAIL']
            session['username'] = account['USERNAME']

            return redirect('/home')
        else:
            msg = 'Incorrect username / password !'
    return render_template('login.html', msg = msg)

#CHANGE FORGOT PASSWORD

@app.route("/forgot")
def forgot():
    return render_template('forgot.html')

@app.route("/forgotpw", methods =['GET', 'POST'])
def forgotpw():
    msg = ''
    if request.method == 'POST' :
        email = request.form['email']
        password = request.form['password']
        query = "SELECT * FROM register WHERE email=?;"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, email)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print(account)
        if account:
               query = "UPDATE register SET password = ? WHERE email = ?;"
            stmt = ibm_db.prepare(connection, query)
            ibm_db.bind_param(stmt, 1, password)
            ibm_db.bind_param(stmt, 2, email)
            ibm_db.execute(stmt)
             msg = 'Successfully changed your password ! Proceed Login Process'
```

```
                return render_template('login.html', msg = msg)
        else:
            msg = 'PLEASE FILL OUT THE CORRECT DETAILS'
            return render_template('forgot.html', msg=msg)


#ADDING----DATA


@app.route("/add")
def adding():
    return render_template('add.html')


@app.route('/addexpense',methods=['GET', 'POST'])
def addexpense():
    global user_email
     que = "SELECT * FROM expenses where id = ? ORDER BY 'dates' DESC"
    stm = ibm_db.prepare(connection, que)
    ibm_db.bind_param(stm, 1, session['email'])
    ibm_db.execute(stm)
    dictionary=ibm_db.fetch_assoc(stm)
    expense=[]
    while dictionary != False:
exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"])
        expense.append(exp)
        dictionary = ibm_db.fetch_assoc(stm)
    i=len(expense)+1
    idx=str(i)
    dates = request.form['date']
    expensename = request.form['expensename']
    amount = request.form['amount']
    paymode = request.form['paymode']
    category = request.form['category']
    query = "INSERT INTO expenses VALUES (?,?,?,?,?,?,?);"
    stmt = ibm_db.prepare(connection, query)
```

```python
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.bind_param(stmt, 2, dates)
    ibm_db.bind_param(stmt, 3, expensename)
    ibm_db.bind_param(stmt, 4, amount)
    ibm_db.bind_param(stmt, 5, paymode)
    ibm_db.bind_param(stmt, 6, category)
    ibm_db.bind_param(stmt, 7, idx)
    ibm_db.execute(stmt)
     print(dates + " " + expensename + " " + amount + " " + paymode + " " + category)

    return redirect("/display")



#DISPLAY---graph

@app.route("/display")
def display():
    query = "SELECT * FROM expenses where id = ? ;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.execute(stmt)
    dictionary=ibm_db.fetch_assoc(stmt)
    rexpense=[]
    while dictionary != False:
        exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dictionary["IDX"])
        rexpense.append(exp)
        dictionary = ibm_db.fetch_assoc(stmt)
     que = "SELECT MONTH(dates) as DATES, SUM(amount) as AMOUNT FROM expenses WHERE id=? AND YEAR(dates)= YEAR(now()) GROUP BY MONTH(dates);"
    stm = ibm_db.prepare(connection, que)
    ibm_db.bind_param(stm, 1,session['email'])
    ibm_db.execute(stm)
    dictionary=ibm_db.fetch_assoc(stm)
    texpense=[]
    while dictionary != False:
        exp=(dictionary["DATES"],dictionary["AMOUNT"])
        texpense.append(exp)
        dictionary = ibm_db.fetch_assoc(stm)
    print(texpense)

    quer = "SELECT * FROM expenses WHERE id = ? AND YEAR(dates)= YEAR(now());"
    st = ibm_db.prepare(connection, quer)
    ibm_db.bind_param(st, 1,session['email'])
    ibm_db.execute(st)
    dictionary=ibm_db.fetch_assoc(st)
    expense=[]
    while dictionary != False:
        exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dictionary["IDX"])
        expense.append(exp)
        dictionary = ibm_db.fetch_assoc(st)

    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[3]
          if x[5] == "food":
              t_food += x[3]

          elif x[5] == "entertainment":
              t_entertainment  += x[3]

          elif x[5] == "business":
              t_business  += x[3]
```

```python
          elif x[5] == "rent":
              t_rent  += x[3]

          elif x[5] == "EMI":
              t_EMI  += x[3]

          elif x[5] == "other":
              t_other  += x[3]

    print(total)

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

    qur = "SELECT * FROM expenses WHERE id = ? AND MONTH(dates)= MONTH(now());"
    stt = ibm_db.prepare(connection, qur)
    ibm_db.bind_param(stt, 1, session['email'])
    ibm_db.execute(stt)
    dictionary=ibm_db.fetch_assoc(stt)
    lexpense=[]
    while dictionary != False:
        exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dictionary["IDX"])
        lexpense.append(exp)
        dictionary = ibm_db.fetch_assoc(stt)

    ttotal=0
    to_food=0
    to_entertainment=0
    to_business=0
    to_rent=0
    to_EMI=0
    to_other=0


    for x in lexpense:
          ttotal += x[3]
          if x[5] == "food":
              to_food += x[3]

          elif x[5] == "entertainment":
              to_entertainment  += x[3]

          elif x[5] == "business":
              to_business  += x[3]
          elif x[5] == "rent":
              to_rent  += x[3]

          elif x[5] == "EMI":
              to_EMI  += x[3]

          elif x[5] == "other":
              to_other  += x[3]

    print(ttotal)


    qy = "SELECT max(IDX) as IDX FROM limits where id=?;"
    smt = ibm_db.prepare(connection, qy)
    ibm_db.bind_param(smt, 1, session['email'])
    ibm_db.execute(smt)
    dictionary = ibm_db.fetch_assoc(smt)
    uexpense=[]
    while dictionary != False:
        exp=(dictionary["IDX"])
        uexpense.append(exp)
        dictionary = ibm_db.fetch_assoc(smt)
    k=uexpense[0]
    qu = "SELECT NUMBER FROM limits where id=? and idx=?"
    sm = ibm_db.prepare(connection, qu)
    ibm_db.bind_param(sm, 1, session['email'])
    ibm_db.bind_param(sm, 2, k)
    ibm_db.execute(sm)
    dictionary = ibm_db.fetch_assoc(sm)
    fexpense=[]
    while dictionary != False:
        exp=(dictionary["NUMBER"])
        fexpense.append(exp)
        dictionary = ibm_db.fetch_assoc(stmt)

    if len(fexpense) <= 0:
        print("Enter the limit First")
    else:
        if ttotal > fexpense[0]:
            m=sendemail.sendgridmail(session["email"])
            print(m)
        else: print("Error")
       return  render_template("display.html",rexpense=rexpense, 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 )


#delete---the--data

@app.route('/delete/<idx>', methods = ['POST', 'GET' ])
def delete(idx):
    query = "DELETE FROM expenses WHERE id=? and idx=?;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, session["email"])
    ibm_db.bind_param(stmt, 2, idx)
    ibm_db.execute(stmt)
    print('deleted successfully')
    return render_template("display.html")



#UPDATE---DATA

@app.route('/edit/<id>', methods = ['POST', 'GET' ])
```

```python
def edit(id):
    query = "SELECT * FROM expenses WHERE id=? and idx=?;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.bind_param(stmt, 2, id)
    ibm_db.execute(stmt)
    dictionary=ibm_db.fetch_assoc(stmt)
    expense=[]
    while dictionary != False:
        exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dictionary["IDX"])
        expense.append(exp)
        dictionary = ibm_db.fetch_assoc(stmt)
    print(expense)
    return render_template('edit.html', expenses = expense[0])




@app.route('/update/<id>', methods = ['POST'])
def update(id):
  if request.method == 'POST' :
      dates = request.form['date']
      expensename = request.form['expensename']
      amount = request.form['amount']
      paymode = request.form['paymode']
      category = request.form['category']
      query = "UPDATE expenses SET dates = ? , expensename = ? , amount = ?, paymode = ?, category = ? WHERE id = ? and idx=?;"
      stmt = ibm_db.prepare(connection, query)
      ibm_db.bind_param(stmt, 1, dates)
      ibm_db.bind_param(stmt, 2, expensename)
      ibm_db.bind_param(stmt, 3, amount)
      ibm_db.bind_param(stmt, 4, paymode)
      ibm_db.bind_param(stmt, 5, category)
      ibm_db.bind_param(stmt, 6, session['email'])
      ibm_db.bind_param(stmt, 7, id)
      ibm_db.execute(stmt)
```

```

        print('successfully updated')
        return redirect("/display")










 #limit
@app.route("/limit" )
def limit():
         return render_template('limit.html')

@app.route("/limitnum" , methods = ['POST' ])
def limitnum():
    que = "SELECT * FROM limits where id = ? ;"
    stm = ibm_db.prepare(connection, que)
    ibm_db.bind_param(stm, 1, session['email'])
    ibm_db.execute(stm)
    if request.method == "POST":
        dictionary=ibm_db.fetch_assoc(stm)
        expense=[]
        while dictionary != False:
exp=(dictionary['ID'],dictionary['NUMBER'],dictionary['IDX'])
            expense.append(exp)
            dictionary = ibm_db.fetch_assoc(stm)
        i=len(expense)+1
        idx=str(i)
        number= request.form['number']
        query = "INSERT INTO limits VALUES(?,?,?)"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, session['email'])
        ibm_db.bind_param(stmt, 2, number)
        ibm_db.bind_param(stmt, 3, idx)
        ibm_db.execute(stmt)
        return redirect('/limitn')
```

```python


@app.route("/limitn")
def limitn():
    query = "SELECT max(IDX) as IDX FROM limits where id=?;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.execute(stmt)
    dictionary = ibm_db.fetch_assoc(stmt)
    expense=[]
    while dictionary != False:
        exp=(dictionary["IDX"])
        expense.append(exp)
        dictionary = ibm_db.fetch_assoc(stmt)
    k=expense[0]
    que = "SELECT NUMBER FROM limits where id=? and idx=?"
    stmt = ibm_db.prepare(connection, que)
    ibm_db.bind_param(stmt, 1, session['email'])
    ibm_db.bind_param(stmt, 2, k)
    ibm_db.execute(stmt)
    dictionary = ibm_db.fetch_assoc(stmt)
    texpense=[]
    while dictionary != False:
        exp=(dictionary["NUMBER"])
        texpense.append(exp)
        dictionary = ibm_db.fetch_assoc(stmt)
    s=texpense[0]
    return render_template("limit.html" , y= s)


#REPORT

@app.route("/today")
def today():
       query = "SELECT dates, amount FROM expenses  WHERE id = ? AND DATE(dates) = DATE(NOW()); "
      stmt = ibm_db.prepare(connection, query)
      ibm_db.bind_param(stmt, 1, str(session['email']))
      ibm_db.execute(stmt)
      dictionary=ibm_db.fetch_assoc(stmt)
```

```
        texpense=[]
        while dictionary != False:
          exp=(dictionary["DATES"],dictionary["AMOUNT"])
          texpense.append(exp)
          dictionary = ibm_db.fetch_assoc(stmt)
        print(texpense)

            query  =  "SELECT  *  FROM  expenses  WHERE  id  =  ?  AND
DATE(dates) = DATE(NOW())"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, session['email'])
        ibm_db.execute(stmt)
        dictionary=ibm_db.fetch_assoc(stmt)
        expense=[]
        while dictionary != False:
exp=(dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGO
RY"])
              expense.append(exp)
              dictionary = ibm_db.fetch_assoc(stmt)

        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[0]
            if x[2] == "food":
                t_food += x[0]

            elif x[2] == "entertainment":
                t_entertainment  += x[0]

            elif x[2] == "business":
                t_business  += x[0]
            elif x[2] == "rent":
                t_rent  += x[0]

            elif x[2] == "EMI":
                t_EMI  += x[0]

            elif x[2] == "other":
                t_other  += x[0]

        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():
        query = "SELECT dates, SUM(amount) as AMOUNT FROM expenses WHERE id= ? AND MONTH(dates)= MONTH(now()) GROUP BY dates ORDER BY dates;"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, str(session['email']))
        ibm_db.execute(stmt)
        dictionary=ibm_db.fetch_assoc(stmt)
        texpense=[]
        while dictionary != False:
```

```python
          exp=(dictionary["DATES"],dictionary["AMOUNT"])
          texpense.append(exp)
          dictionary = ibm_db.fetch_assoc(stmt)
        print(texpense)

        query = "SELECT * FROM expenses WHERE id = ? AND MONTH(dates)= MONTH(now());"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, session['email'])
        ibm_db.execute(stmt)
        dictionary=ibm_db.fetch_assoc(stmt)
        expense=[]
        while dictionary != False:
          exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dictionary["IDX"])
          expense.append(exp)
          dictionary = ibm_db.fetch_assoc(stmt)

        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[3]
            if x[5] == "food":
                t_food += x[3]

            elif x[5] == "entertainment":
                t_entertainment  += x[3]

            elif x[5] == "business":
                t_business  += x[3]
            elif x[5] == "rent":
                t_rent  += x[3]

            elif x[5] == "EMI":
                t_EMI  += x[3]

            elif x[5] == "other":
                t_other  += x[3]

        print(total)

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



         return render_template("month.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():
          query = "SELECT MONTH(dates) as DATES, SUM(amount) as
AMOUNT FROM expenses WHERE id=? AND YEAR(dates)= YEAR(now()) GROUP
BY MONTH(dates);"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1,session['email'])
        ibm_db.execute(stmt)
        dictionary=ibm_db.fetch_assoc(stmt)
        texpense=[]
        while dictionary != False:
          exp=(dictionary["DATES"],dictionary["AMOUNT"])
          texpense.append(exp)
          dictionary = ibm_db.fetch_assoc(stmt)
        print(texpense)

            query = "SELECT * FROM expenses WHERE id = ? AND YEAR(dates)= YEAR(now());"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1,session['email'])
        ibm_db.execute(stmt)
        dictionary=ibm_db.fetch_assoc(stmt)
        expense=[]
        while dictionary != False:
          exp=(dictionary["ID"],dictionary["DATES"],dictionary["EXPENSENAME"],dictionary["AMOUNT"],dictionary["PAYMODE"],dictionary["CATEGORY"],dictionary["IDX"])
          expense.append(exp)
          dictionary = ibm_db.fetch_assoc(stmt)

        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[3]
            if x[5] == "food":
                t_food += x[3]

            elif x[5] == "entertainment":
                t_entertainment  += x[3]

            elif x[5] == "business":
                t_business  += x[3]
            elif x[5] == "rent":
                t_rent  += x[3]

            elif x[5] == "EMI":
                t_EMI  += x[3]

            elif x[5] == "other":
                t_other  += x[3]

        print(total)

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



         return render_template("year.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)

```

13.2. GitHub & Project Demo Link

GitHub Link:

https://github.com/IBM-EPBL/IBM-Project-1495-1658391120

Demo Video Links

Drive Link:

https://drive.google.com/file/d/1-yFL56dfBdAHzvzEc1zaH1ujG74Y7d_O/view?usp=sharing

YouTube Link:

https://youtu.be/tpUqKJgdGKA