NALAIYA THIRAN - IBM PROJECT REPORT

(19CS406T Professional Readiness for Innovation, Employability and Entrepreneurship)

ON

PERSONAL EXPENSE TRACKER APPLICATION

Submitted by

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1. INTRODUCTION

1.1 PROJECT OVERVIEW

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

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.

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM

Title	Owner	Advantages	Disadvantages
ZOHO Expense	ZOHO Corporation	• Many companies are using Zoho apps. • Ideal for approval of expense. • Free expense tracking.	• Monthly plans Can be expensive for a small team. • lot used for a personal expense tracking. • First-time users may feel over whelmed with the user interface.
Spendee	Spendee	• Convenient, one device management of all your financial data,Including cryptocurrency. • Affordable and Customizable for however, you choose to budget. • Userfriendly interface	• Takes time to set up. • Occasional account Commercial issues.
Reach-Expense Tracker	Reach Inc.	• It is simple and easy to use. • It calculates budget.	• Design of application is one of the drawback. • Sometimes it generates multiple record of same Transaction. • Data cannot be updated without internet connection.

Mint: Budget and Track Bills	Intuit Inc	• It is free to use and provides high security on data. • Alert and reminder tools. • Free credit monitoring services. • Syncs to a diverse set of financial accounts.	• Takes time to set up. • Occasional account connection issues.

2.2 REFERENCES

- ✓ **Personal Expense Tracker Application using Mobile application**

  AUTHOR NAME: Faculty of San Diego State University

  https://digitallibrary.sdsu.edu/islandora/object/sdsu%3A3676/datastream/OBJ/view

- ✓ **The Economic Times - Tiny habits can convert non-savers into savers: Here's how**

  AUTHOR NAME: The Economic Times.

  https://economictimes.indiatimes.com/wealth/save/tiny-habits-can-convert-non-savers-into-savers-heres-how/articleshow/77164834.cms

- ✓ **Role of Cloud in efficient application development**

  AUTHOR NAME: Security Boulevard

  OBJECTIVE: This article suggests that App development is more quick in cloud than forming a physical server. Agility, speed and reliablility are higher in cloud development, it also ensures that it meets the customer requirements.

  Reference Link: https://securityboulevard.com/2020/01/top-3-reasons-why-application-development-in-the-cloud-can-drive-better-products-services-faster/

- ✓ **Kubernetes Cluster**

AUTHOR NAME: Kubernetes.io

OBJECTIVE: Kubernetes, also known as K8s, is an open-source system for automating deployment, scaling, and management of containerized applications. Whether testing locally or running a global enterprise, Kubernetes flexibility grows with you to deliver your applications consistently and easily no matter how complex your need is.

Refernce Link: https://kubernetes.io/

✓ **Expense Manager Application**

AUTHOR NAME: Velmurugan A, Albert Maryan J, Niranjana P, Richard Francis

OBJECTIVE: Mobile applications are top in user convenience and have overpassed the web applications in terms of popularity and usability. There are variousmobile applications that provide solutions to manage personal and group expense but not many of them provide a comprehensive view of both cases. In this paper, we develop a mobile application developed for the android platform that keeps record of user personal expenses, his/her contribution in group expenditures, top investment options, view of the current stock market, read authenticated financial news and grab the best ongoing offers in the market in popular categories.

ReferenceLink:https://www.researchgate.net/publication/347972162_Expense_Manager_Application.

2.3 PROBLEM STATEMENT DEFINITION

1. Nowadays, saving money is more difficult than earning it. People can earn money in many ways but they can save it in only one way. i.e., controlling or managing the expenditure.
2. Middle class family in India suffers a lot in controlling their expenses, paper and pen method couldn't able to make it happen in this digital world.They are in need of software for tracking their expenditure.
3. People need a software which could track their expense in the daily, weekly, monthly even for yearly basis. This application would give a visualisation method of insights.
4. Alert message is the key to control people from over expense, alert messages are received through an e-mail.

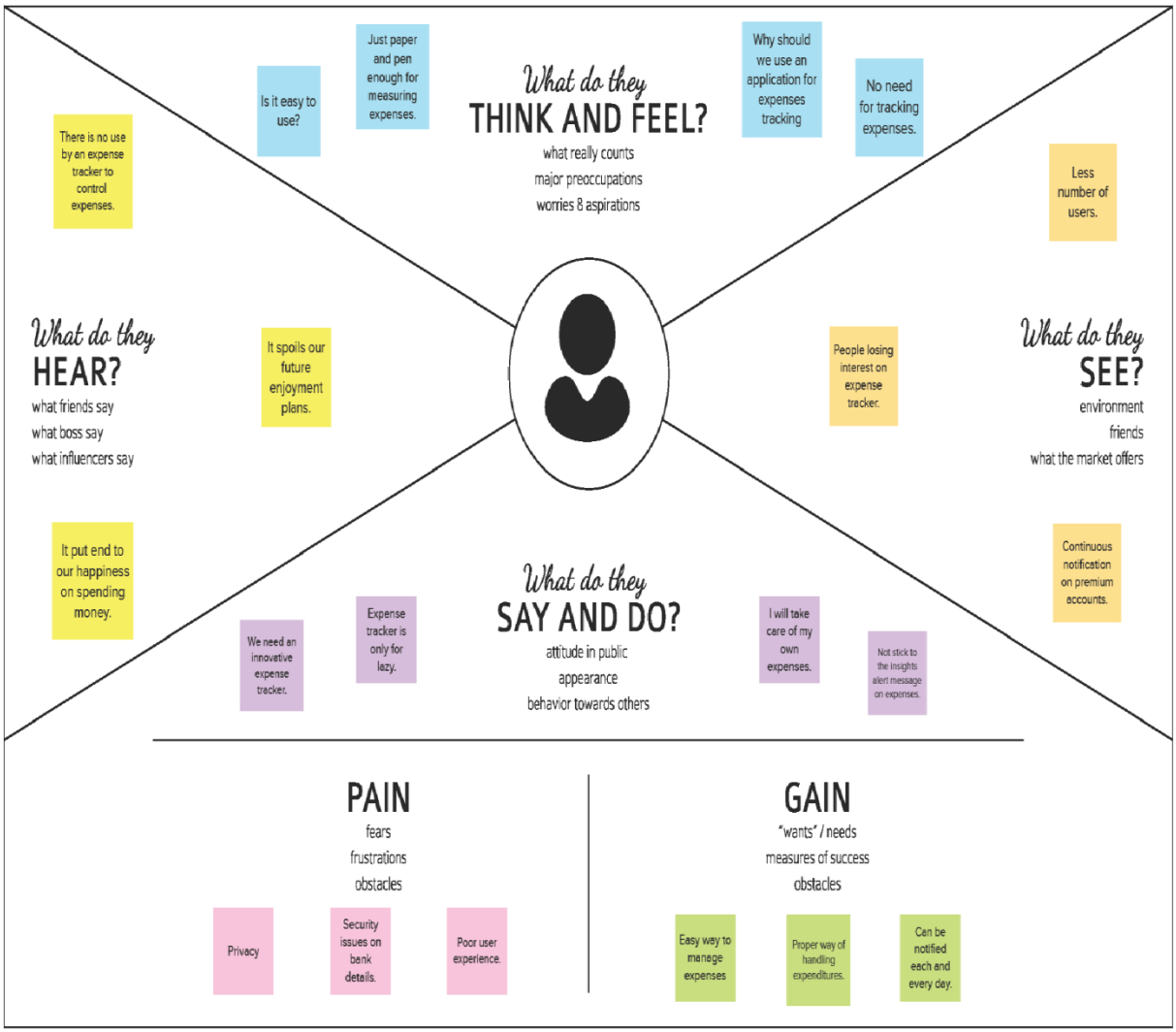
5. Maintaining a good habit is difficult to follow, usually people skip those habits to be in their comfort zone. This is also reflected in controlling their expenditure, usually they snooze their target and they start their habit of over spending.
6. The laziness on entering their expenditures is also the key reason for the failure of the objective.

3. IDEATION AND PROPOSED SOLUTION

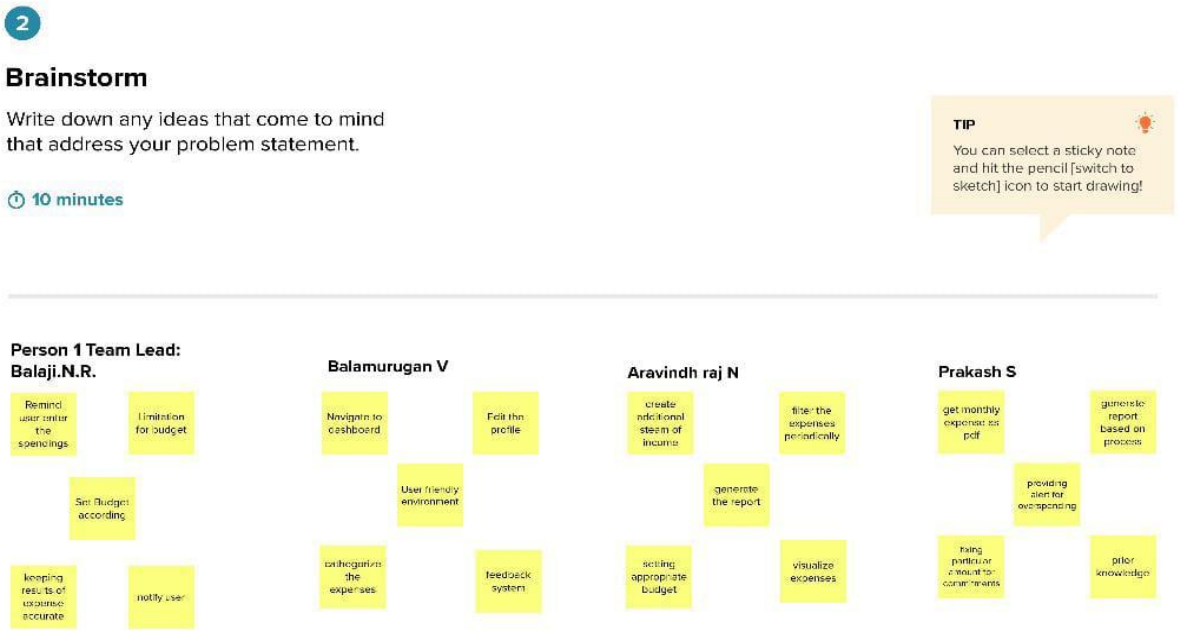
3.1 EMPATHY MAP CANVAS

1

Build empathy and keep your focus on the user by putting yourself in their shoes.



3.2 IDEATION & BRAINSTORMING

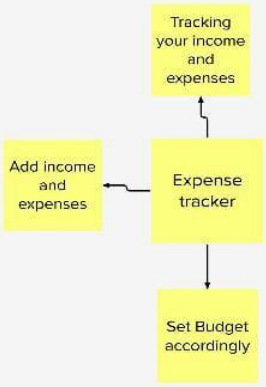


3

Group ideas

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

20 minutes



TIP

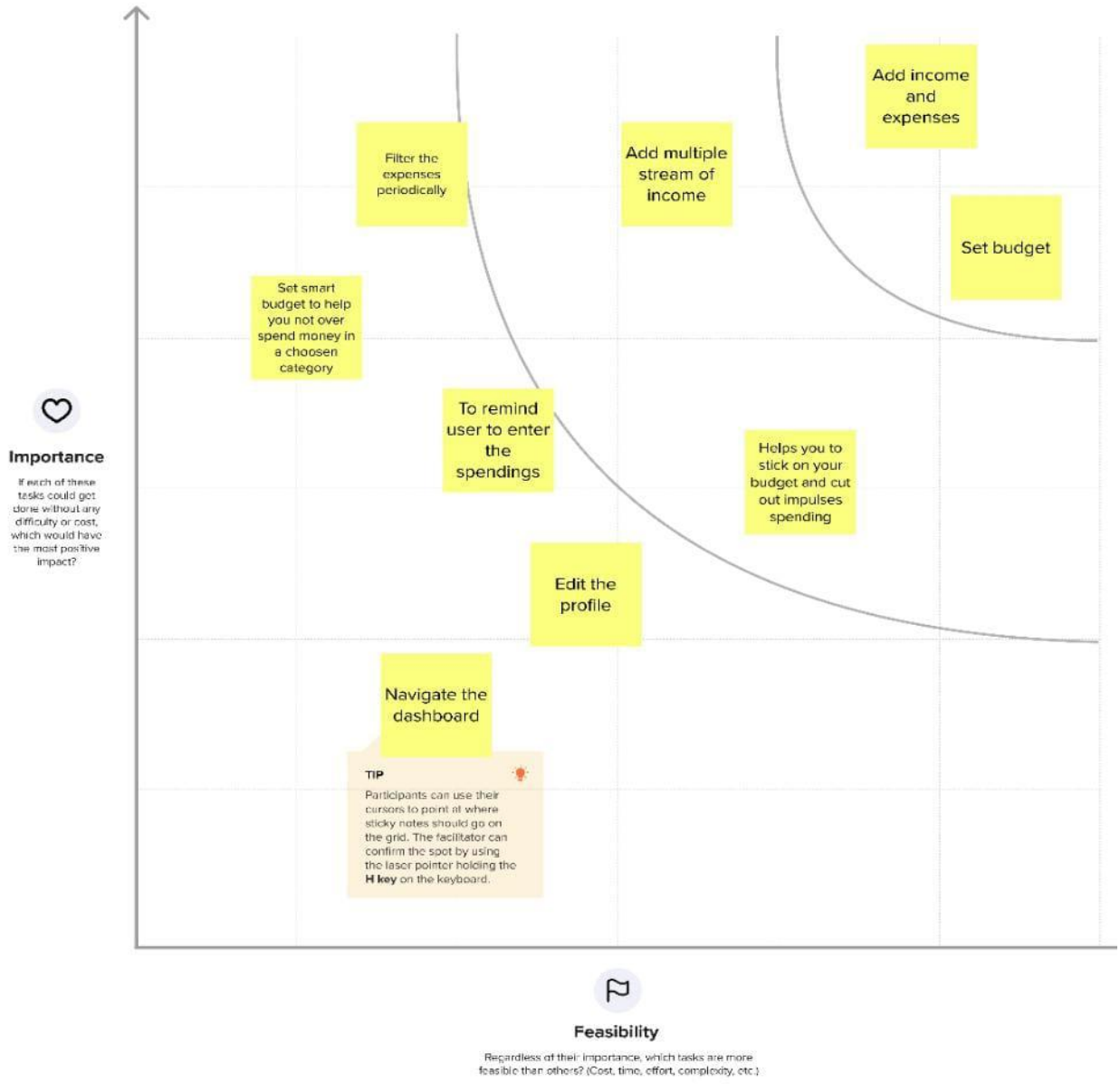
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

4

Prioritize

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

20 minutes

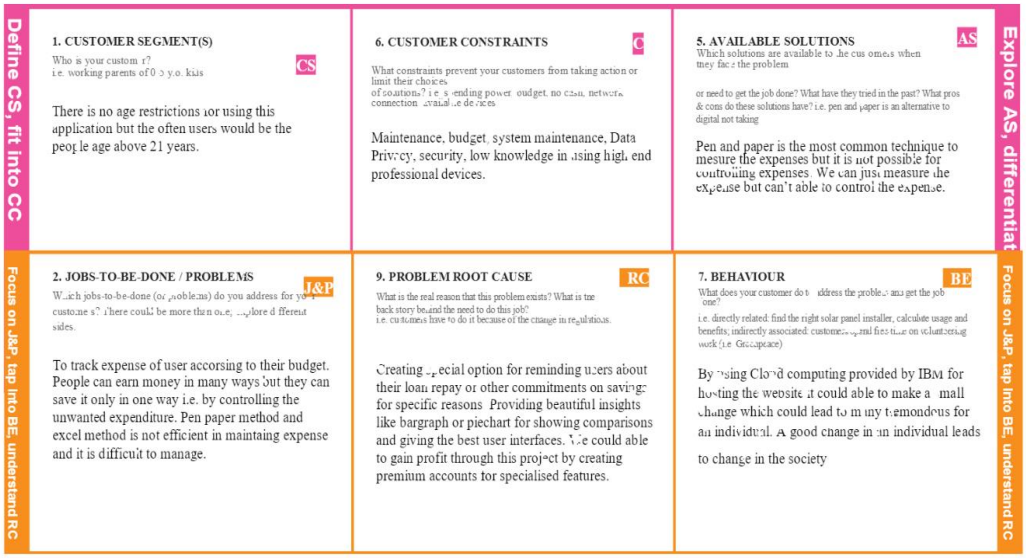


3.3 PROPOSED SOLUTION

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	To track expense of user accorsing to their budget. People can earn money in many ways but they can save it only in one way i.e. by controlling the unwanted expenditure. Pen paper method and excel method is not efficient in maintaing expense and it is difficult to manage.
2	Idea / Solution description	1. The goal of this project is to understand the users requirement and to design the module in order to create an efficient expense tracker. 2. Making them aware of their expenses by exhibiting their expenditure through colorful insights. 3. Throwing a mail as an alert warning if their expenditure exceeds their budget proposed. Allowing them to compare their expenses on the daily, weekly, monthly and yearly basis.
3	Novelty / Uniqueness	Creating special option for reminding users about their loan repay or other commitments on savings for specific reasons. Providing beautiful insights like bargraph or piechart for showing.
4	Social Impact / Customer Satisfaction	By using Cloud computing provided by IBM for hosting the website it could able to make a small change which could lead to many tremondous for an individual. A good change in an individual leads to change in the society.
5	Business Model (Revenue Model)	We could able to gain profit through this project by creating premium

		accounts for specialised features. By fixing the amount for premium with moderate rate the user could able to use the application with ease and the developer could able to gain some profit. The profit of the application is based on the best design and user experience of the product.
6	Scalability of the Solution	• This system can even work more efficiently with large volume of data. • Implementation of anyone and anywhere using system can be helpful for even a commoner to buy the products. • Daily and Each time purchase updation of the stock for preventing inventory shrinkage . • Direct chat system with the retailers and the customers for providing best customer service.

3.4 PROBLEM SOLUTION FIT


Define CS, fit into CC
1. CUSTOMER SEGMENT(S)
Who is your customer?
i.e. working parents of 0-5 y.o. kids
CS
There is no age restrictions for using this application but the often users would be the people age above 21 years.
6. CUSTOMER CONSTRAINTS
C
What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices
Maintenance, budget, system maintenance, Data Privacy, security, low knowledge in using high end professional devices.
5. AVAILABLE SOLUTIONS
AS
Which solutions are available to the customers when they face the problem
or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital not taking
Pen and paper is the most common technique to mesure the expenses but it is not possible for controlling expenses. We can just measure the expense but can't able to control the expense.
Explore AS, differentiate
Focus on J&P, tap into BE, understand RC
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.
To track expense of user accorsing to their budget. People can earn money in many ways but they can save it only in one way i.e. by controlling the unwanted expenditure. Pen paper method and excel method is not efficient in maintaing expense and it is difficult to manage.
9. PROBLEM ROOT CAUSE
RC
What is the real reason that this problem exists? What is the back story behind the need to do this job?
i.e. customers have to do it because of the change in regulations.
Creating special option for reminding users about their loan repay or other commitments on savings for specific reasons. Providing beautiful insights like bargraph or piechart for showing comparisons and giving the best user interfaces. We could able to gain profit through this project by creating premium accounts for specialised features.
7. BEHAVIOUR
BE
What does your customer do to address the problem and get the job done?
i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)
By using Cloud computing provided by IBM for hosting the website it could able to make a small change which could lead to many tremendous for an individual. A good change in an individual leads to change in the society
Focus on J&P, tap into BE, understand RC
3. TRIGGERS
What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.
TR
By having a great aim to track expense to save the money spended in unwanted things. By creating a feasible and good UI designs attracting the customers with great features leads to usage of application by many customers. By providing the facility to analyse the data and to provide a visual insights.
10. YOUR SOLUTION
SL
If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality.
If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.
The goal of this project is to understand the users requirement and to design the module in order to create an efficient expense tracker. Making them aware of their expenses by exhibiting their expenditure through colorful insights. Throwing a mail as an alert warning if their expenditure exceeds their budget proposed. Allowing them to compare their expenses on the daily, weekly, monthly and yearly basis.
8. CHANNELS of BEHAVIOUR
CH
8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7
They should provide their proper profile data to make use of data by the creator or owner of the application. They should enter their proper expenses spend in the application with viable data. Receive mails when their expenses exceeds their budget.
8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.
They should be aware of their expenses spend and should maintain the rough notes of their expenses. The success of this application depends on the following the final insights of the application.

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENT

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 Login	Login through User name and password.
FR-4	User Financial Accounts	Account Details Verification of Details.
FR-5	Add Expense	Add expense made which includes date, time and type of expenses.
FR-6	Edit Expenses	User facilitates to edit the expense which they added previously. Can edit amount, mode of payment or the expense made. Delete the expense if it is not made.
FR-7	Expenses reach budget	Alert Message through mail.
FR-8	Monitoring of expenses	Using pie-chart user can analyse their expenses on the daily, monthly or even yearly basis.
FR-9	Database	Usage of standard database for storing the data.

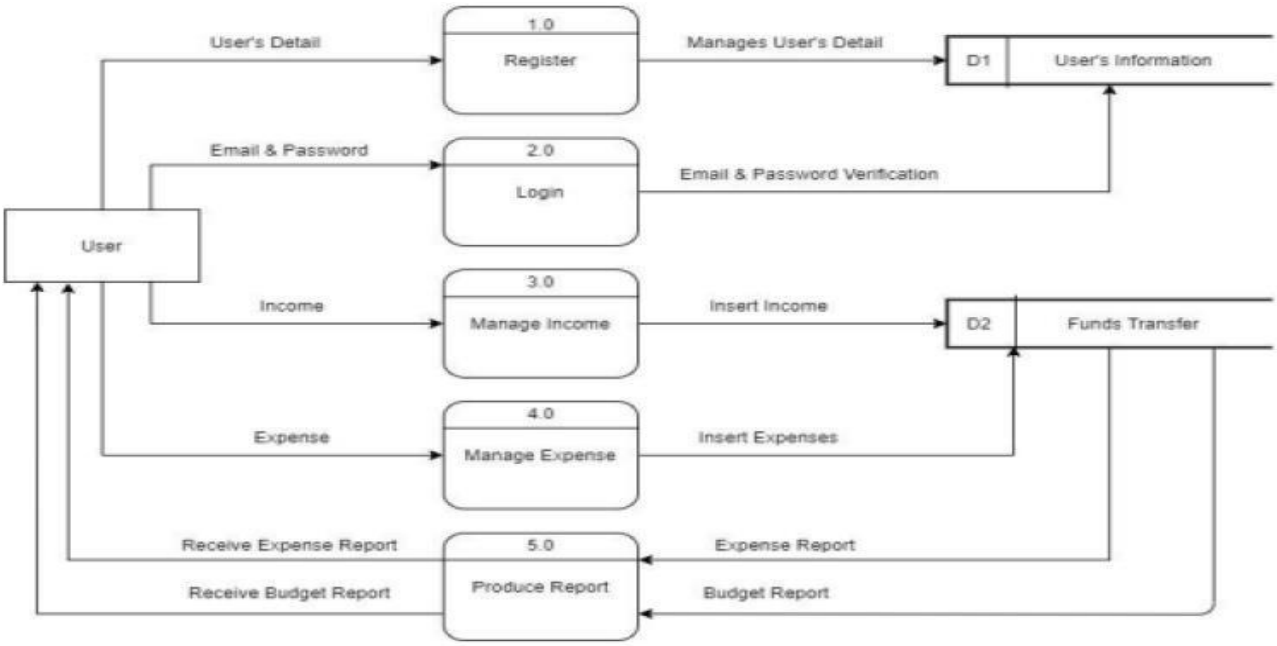
4.2 NON-FUNCTIONAL REQUIREMENT

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. • It can use by wide variety of client as it is very simple to learn and not complex to proceed • Easy to use, User-friendly and Responsive.
NFR-2	Security	Applications have been developed to help users track and manage their expense related to their own products. The System will ask user to create their accounts by providing essential details. Users can

		access their accounts by logging into the application. With Registered Mail id only retailers can log into the application. So it provide authentication. • We are using login for the user and the information will be hashed so that it will be very secure to use
NFR-3	Reliability	• It will be reliable that it can update with very time period so that the accuracy will be good.
NFR-4	Performance	• User can track the record of goods available using the application. Inventory tracking helps to improve inventory management and ensures that having optimal stock available to fulfill orders.Reduces manpower , cost and saves time. Emails will be sent automatically While stocks are not available.Makes the business process more efficient.Improves organizations performance. • It will be perform fast and secure even at the lower bandwidth.
NFR-5	Availability	• The availability of product is just one way in which an inventory management system creates customer satisfaction. Inventory management systems are designed to monitor product availability, determine purchasing schedules for better customer interaction. • Prediction will be available for every user but only for premium user news,database and price alert will be alert
NFR-6	Scalability	• Rely on your budgeting app to track, streamline, and automate all the recurrent expenses and remind you on a timely basis. • It is scalable that we are going to use data in kilobytes so that the quite amount of storage is satisfied

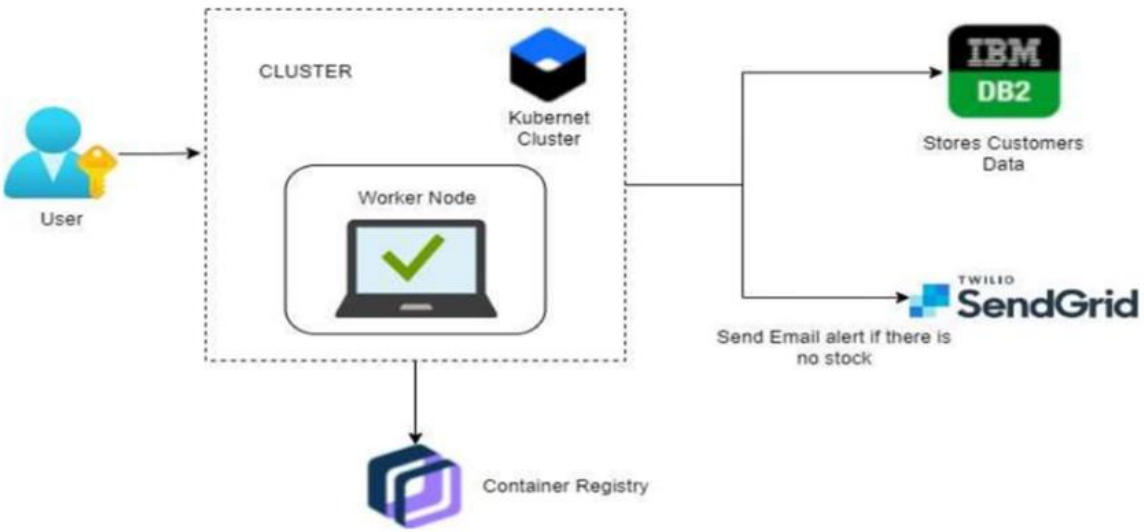
5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS



5.2 SOLUTION AND TECHNICAL ARCHITECHTURE

Figure : Technical Architechture



5.3 USER STORIES

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 mypassword.	2	High	Balaji N R
Sprint-1		USN-2	As a user, I will receive confirmation email once Ihave registered for the application	1	High	Balamurugan V
Sprint-1	Login	USN-3	As a user, I can register for the application throughGmail	1	High	Aravindh Raj N
Sprint-1	Dashboard	USN-4	As a user, I can log into the application by enteringemail & password	2	High	Prakash S
Sprint-2	Workspace	USN-1	Workspace for personal expense tracking	2	High	Balaji N R
Sprint-2	Charts	USN-2	Creating various graphs and statistics of customer's data	1	Medium	Balamurugan V
Sprint-2	Connecting to IBMDB2	USN-3	Linking database with dashboard	2	High	Aravindh raj N
Sprint-2		USN-4	Making dashboard	2	High	Prakash S

			interactive with JS			
Sprint-3		USN-1	Wrapping up the server side works of frontend	1	Medium	Balaji N R
Sprint-3	Watson Assistant	USN-2	Creating Chatbot for expense tracking and for calrifying user's query	1	Medium	Aravindh Raj N
Sprint-3	SendGrid	USN-3	Using SendGrid to send mail to the user about	1	Low	Balamurugan V
Sprint-3		USN-4	Integrating both frontend and backend	2	High	Prakash S
Sprint-4	Docker	USN-1	Creating image of website using docker	2	High	Balaji N R
Sprint-4	Cloud Registry	USN-2	Uploading docker image to IBM Cloud registry	2	High	Balamurugan V
Sprint-4	kubernetes	USN-3	Create container using the docker image andhosting the site	2	High	Prakash S
Sprint-4	Exposing	USN-4	Exposing IP/Ports for the site	2	High	Aravindh raj N

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING AND ESTIMATION

User Type	Functional Requirement (Epic)	User Story Number	User Story/Task	Story Points	Priority	Release
Sprint 1	Registration	USN – 1	User can create an account by providing business mail id and password	5	High	1,2,3,4,5
Sprint 2	Registration Login	USN – 2	Two step authentication using one time password to provide mail id or phone number	10	High	1,2,3,4,5
Sprint 1	Login	USN – 3	Using registered mail Id	5	High	1,2,3,4,5
Sprint 1	Main dashboard	USN – 4	User need to complete account settings like giving the details about their inventory and their branches	10	High	1,2,3,4,5
Sprint 2	Hub maintenance	USN – 5	User can able to create a separate account for individual hub and he can able to create access policy to share their account with their hub managers	10	High	1,2,3,4,5
Sprint 3	Hub dashboard login	USN – 6	Hub mangers can able to login to the account to access their allotted hub details	10	High	1,2,3,4,5
Sprint 3	Hub dashboard	USN – 7	Hub mangers can able to add product details and production details. They can also provide access to their allotted space to others.	10	High	1,2,3,4,5
Sprint 4	Communication system	USN - 8	User and hub mangers can get the details of the stock moment via mail or chat bot .	20	Medium	1,2,3,4,5

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

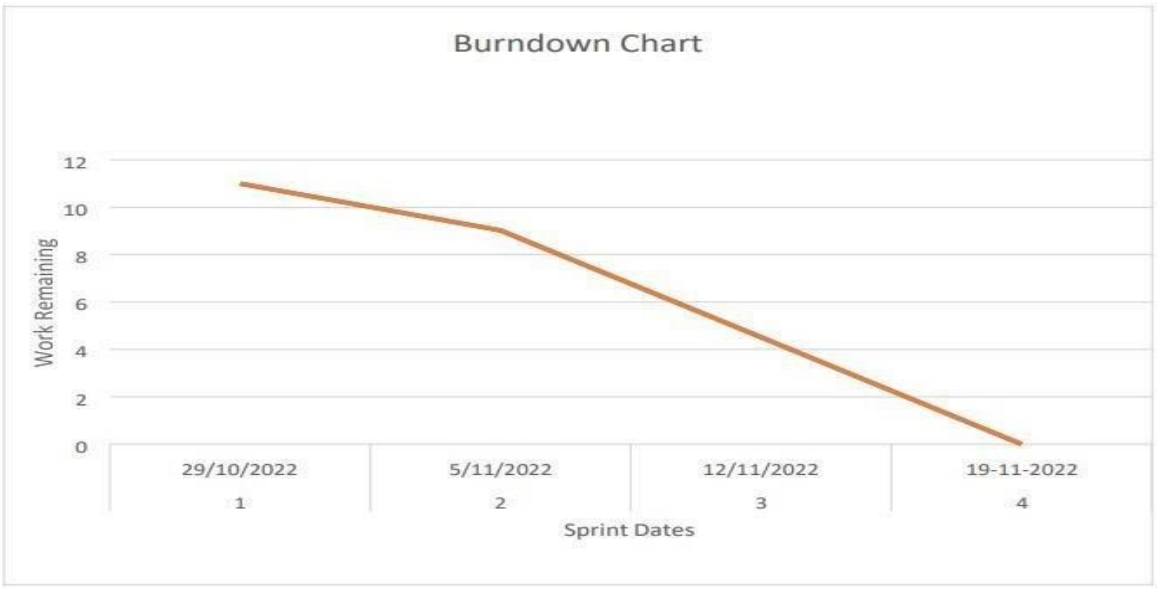
Velocity:

We have a 6-day sprint duration, and the velocity of the team is 20 (points per sprint). Calculating the team's average velocity (AV) per iteration unit (story points per day).

$$AV = \text{sprint duration} / \text{velocity} = 20/6 = 3.33$$

Burndown Chart:

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.



6.3 REPORTS FROM JIRA

Jira Software enables teams to make data-driven decisions with agile reports, dashboards, and more. Reports in Jira software offer critical insights for scrum, kanban, and any agile methodology in between.Deliver value to customers faster with real-time insights at your fingertips. Jira Software enables teams to make data-driven decisions with agile reports, dashboards, and more**.**

Features:

1.As you plan:

Plan smarter sprints with insights in the backlog. 2.During your sprint:

Stay on target to meet your goals with insights right in the board view. 3.When you ship

Optimize your delivery pipeline with deployment frequency and cycle time insights.

Improve delivery and performance with agile reports:

Reports in Jira software offer critical insights for scrum, kanban, and any agile methodology in between, Reports for scrum teams.

Stay on track of sprint goals and improve retrospectives with data scrum teams can put to use sprint over sprint.

1. Sprint report

Determine overcommittment and excessive scope creep and understand completed work in each sprint.

2. Burndown chart

Track progress towards sprint goals to manage progress and respond accordingly. 3.Release burndown

Track and monitor the projected release date for versions and take action if work is falling behind projected schedule.

4.Velocity chart

Track work from sprint to sprint to helps teams determine the velocity and better estimate the work a team realistically achieve in future sprints.

Optimize kanban flow for continuous delivery

Better predict future performance and spot bottlenecks with agile reports for kanban teams.

1.Cumulative flow diagram

Easily spot blockages by seeing the number of issues that increase in any given state.

2.Control chart

Determine future performance with cycle and lead times for your product, version, or sprint.

7. CODING AND SOLUTIONING

7.1 FEATURE 1

Description

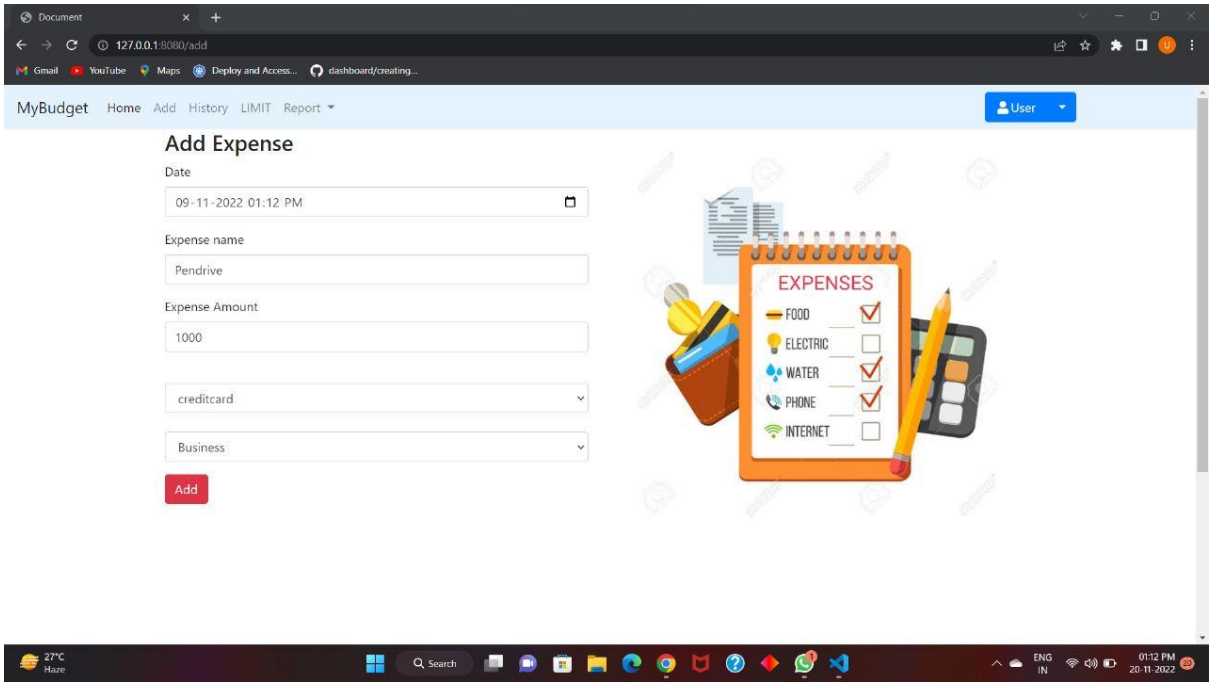
User can add expense by logging into their account

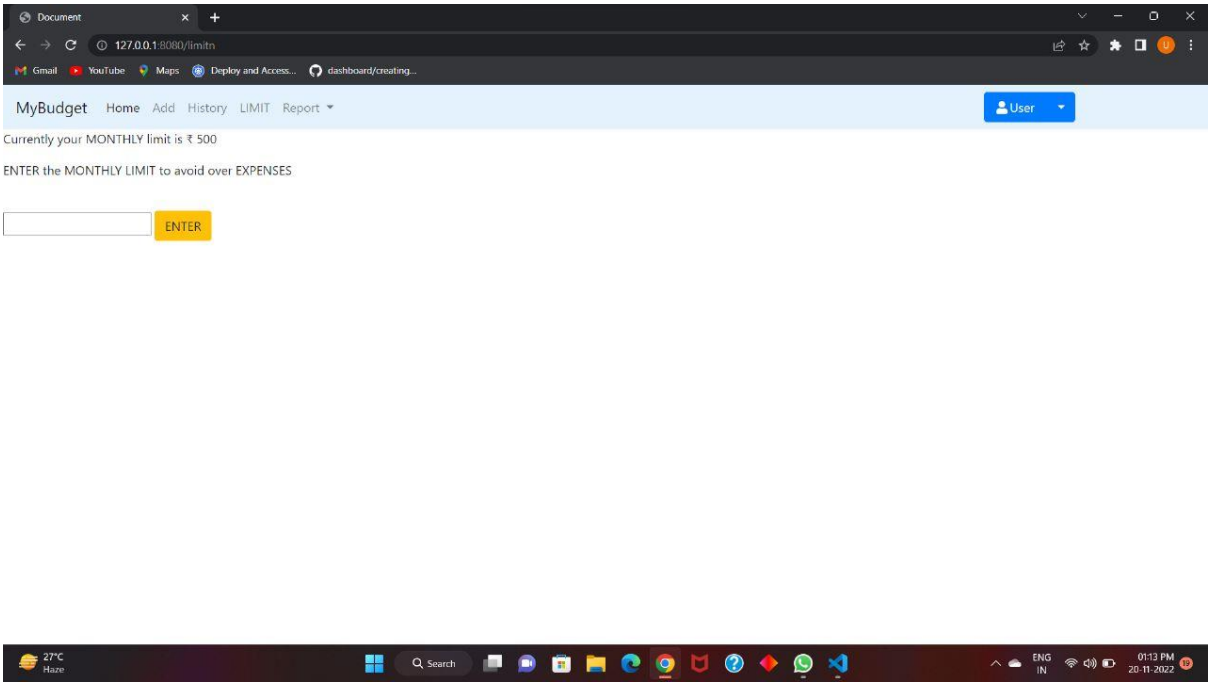
Source Code

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


@app.route('/addexpense',methods=['GET', 'POST'])
def addexpense():

    date = request.form['date']
    expensename = request.form['expensename']
    amount = request.form['amount']
    paymode = request.form['paymode']
    category = request.form['category']

    print(date)
    p1 = date[0:10]
    p2 = date[11:13]
    p3 = date[14:]
    p4 = p1 + "-" + p2 + "." + p3 + ".00"
    print(p4)
    # cursor = mysql.connection.cursor()
    # cursor.execute('INSERT INTO expenses VALUES (NULL,  % s, % s, % s, % s,
% s, % s)', (session['id'] ,date, expensename, amount, paymode, category))
    # mysql.connection.commit()
    # print(date + " " + expensename + " " + amount + " " + paymode + " " +
category)

    sql = "INSERT INTO expenses (userid, date, expensename, amount, paymode,
category) VALUES (?, ?, ?, ?, ?, ?)"
    stmt = ibm_db.prepare(ibm_db_conn, sql)
    ibm_db.bind_param(stmt, 1, session['id'])
    ibm_db.bind_param(stmt, 2, p4)
    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.execute(stmt)
```

```
print("Expenses added")
```

Screenshots





7.2 FEATURE 2

Description

Limit the user expense according to the budget.

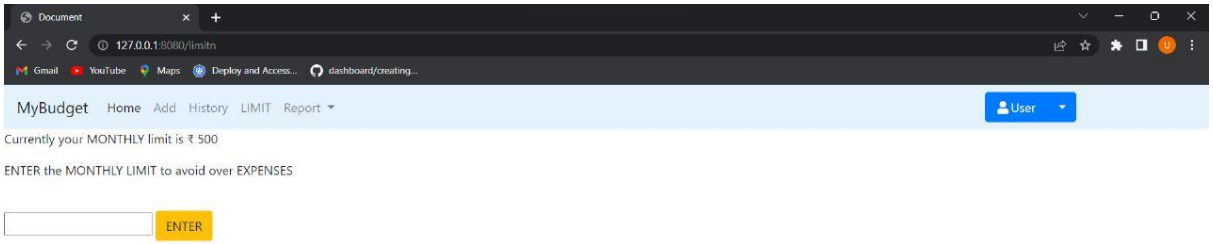
Source Code

app.py

```
@app.route("/today")
def today():
      param1 = "SELECT TIME(date) as tn, amount FROM expenses WHERE userid = "
+ str(session['id']) + " AND DATE(date) = DATE(current timestamp) ORDER BY
date DESC"
      res1 = ibm_db.exec_immediate(ibm_db_conn, param1)
      dictionary1 = ibm_db.fetch_assoc(res1)
      texpense = []

      while dictionary1 != False:
          temp = []
          temp.append(dictionary1["TN"])
          temp.append(dictionary1["AMOUNT"])
          texpense.append(temp)
          print(temp)
```

```
        dictionary1 = ibm_db.fetch_assoc(res1)

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

      param = "SELECT * FROM expenses WHERE userid = " + str(session['id']) +
" AND DATE(date) = DATE(current timestamp) ORDER BY date DESC"
      res = ibm_db.exec_immediate(ibm_db_conn, param)
      dictionary = ibm_db.fetch_assoc(res)
      expense = []
      while dictionary != False:
          temp = []
          temp.append(dictionary["ID"])
          temp.append(dictionary["USERID"])
          temp.append(dictionary["DATE"])
          temp.append(dictionary["EXPENSENAME"])
          temp.append(dictionary["AMOUNT"])
          temp.append(dictionary["PAYMODE"])
          temp.append(dictionary["CATEGORY"])
          expense.append(temp)
          print(temp)
          dictionary = ibm_db.fetch_assoc(res)


      total=0
      t_food=0
      t_entertainment=0
      t_business=0
      t_rent=0
      t_EMI=0
      t_other=0


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

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

          elif x[6] == "business":
```

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

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

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

    print(total)

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



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




```
@app.route("/limit" )
def limit():
       return redirect('/limitn')

@app.route("/limitnum" , methods = ['POST' ])
def limitnum():
     if request.method == "POST":
         number= request.form['number']
         sql = "INSERT INTO limits (userid, limitss) VALUES (?, ?)"
         stmt = ibm_db.prepare(ibm_db_conn, sql)
         ibm_db.bind_param(stmt, 1, session['id'])
         ibm_db.bind_param(stmt, 2, number)
         ibm_db.execute(stmt)

         return redirect('/limitn')


@app.route("/limitn")
def limitn():
    param = "SELECT id, limitss FROM limits WHERE userid = " +
str(session['id']) + " ORDER BY id DESC LIMIT 1"
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    dictionary = ibm_db.fetch_assoc(res)
    row = []
    s = " /-"
```

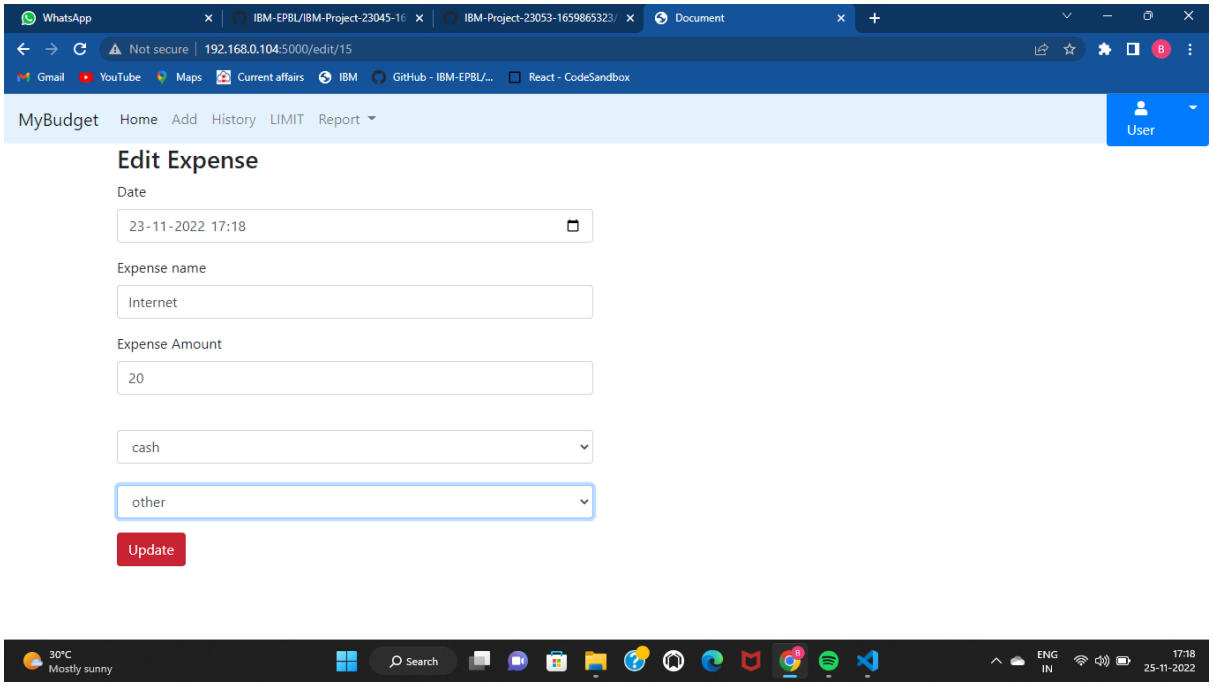
```
    while dictionary != False:
        temp = []
        temp.append(dictionary["LIMITSS"])
        row.append(temp)
        dictionary = ibm_db.fetch_assoc(res)
        s = temp[0]

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

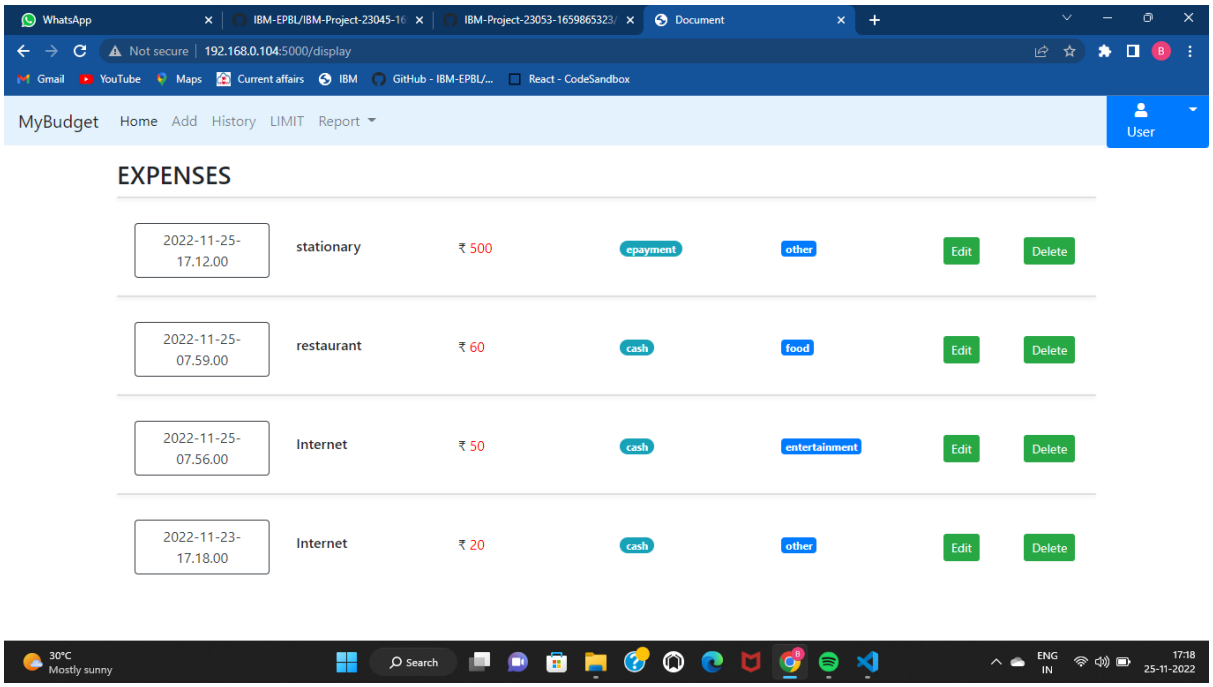
Update Expenses:

```
@app.route('/update/<id>', methods = ['POST'])
def update(id):
  if request.method == 'POST' :

      date = request.form['date']
      expensename = request.form['expensename']
      amount = request.form['amount']
      paymode = request.form['paymode']
      category = request.form['category']

    #   cursor = mysql.connection.cursor()
    #   cursor.execute("UPDATE `expenses` SET `date` = % s , `expensename` = %
s , `amount` = % s, `paymode` = % s, `category` = % s WHERE `expenses`.`id` =
% s ",(date, expensename, amount, str(paymode), str(category),id))
    #   mysql.connection.commit()

      p1 = date[0:10]
      p2 = date[11:13]
      p3 = date[14:]
      p4 = p1 + "-" + p2 + "." + p3 + ".00"

      sql = "UPDATE expenses SET date = ? , expensename = ? , amount = ?,
paymode = ?, category = ? WHERE id = ?"
      stmt = ibm_db.prepare(ibm_db_conn, sql)
      ibm_db.bind_param(stmt, 1, p4)
      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, id)
      ibm_db.execute(stmt)

      print('successfully updated')
```

```
    return redirect("/display")
```

Screenshots



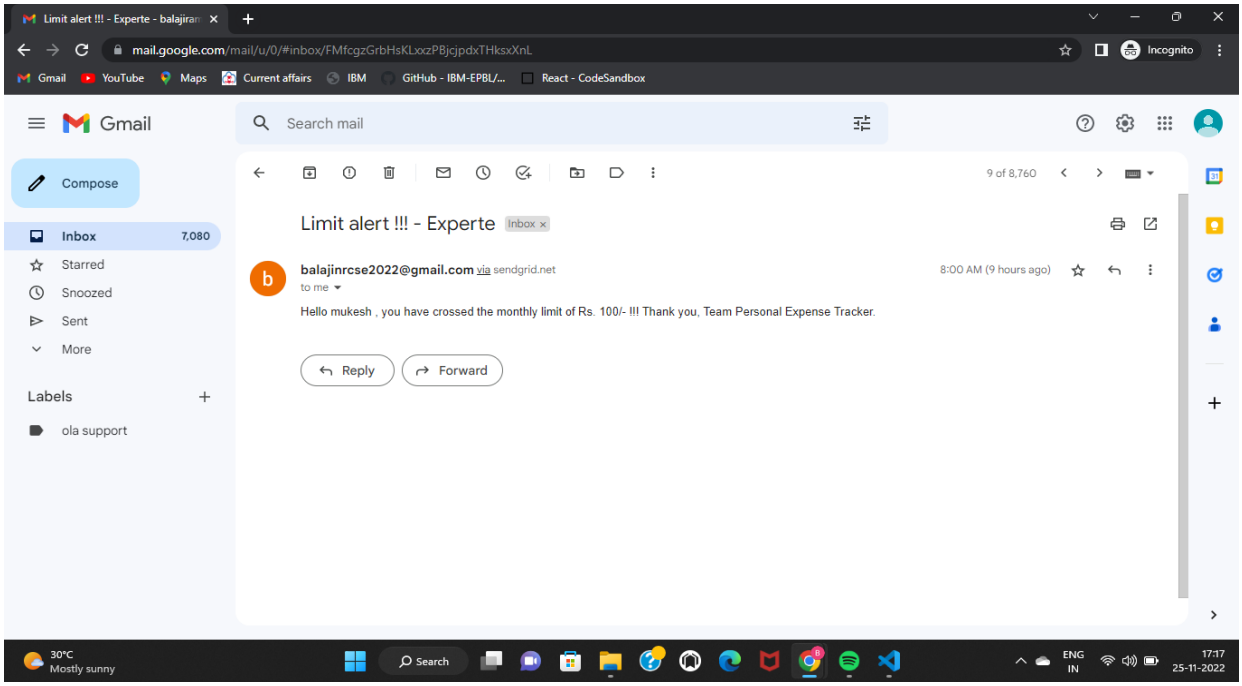


7.3 FEATURE 3

```
 param = "SELECT * FROM expenses WHERE userid = " + str(session['id']) + " AND
MONTH(date) = MONTH(current timestamp) AND YEAR(date) = YEAR(current
timestamp) ORDER BY date DESC"
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    dictionary = ibm_db.fetch_assoc(res)
    expense = []
    while dictionary != False:
        temp = []
        temp.append(dictionary["ID"])
        temp.append(dictionary["USERID"])
        temp.append(dictionary["DATE"])
        temp.append(dictionary["EXPENSENAME"])
        temp.append(dictionary["AMOUNT"])
        temp.append(dictionary["PAYMODE"])
        temp.append(dictionary["CATEGORY"])
        expense.append(temp)
        print(temp)
        dictionary = ibm_db.fetch_assoc(res)

    total=0
    for x in expense:
          total += x[4]

    param = "SELECT id, limitss FROM limits WHERE userid = " +
str(session['id']) + " ORDER BY id DESC LIMIT 1"
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    dictionary = ibm_db.fetch_assoc(res)
    row = []
    s = 0
    while dictionary != False:
        temp = []
        temp.append(dictionary["LIMITSS"])
        row.append(temp)
        dictionary = ibm_db.fetch_assoc(res)
        s = temp[0]

    if total > int(s):
        msg = "Hello " + session['username'] + " , " + "you have crossed the
monthly limit of Rs. " + str(s) + "/- !!!" + "\n" + "Thank you, " + "\n" +
"Team Experte"
        #sendmail(msg,session['email'])
```

```
        sg =
sendgrid.SendGridAPIClient(api_key='SG.wFFlahHgRzqdUSL2mMCigQ.G3R41H26yv0zlBHQ
yIISdyhEjfjOdEyftsw0PPV6pe0')
        from_email = Email("balajinrcse2022@gmail.com")
        cusmail = session['email']
        to_email = To(cusmail)
        content = Content("text/html", msg)
        subject = "Limit alert !!! - Experte"

        mail = Mail(from_email, to_email, subject, content)
        mail_json = mail.get()
        response = sg.client.mail.send.post(request_body=mail_json)

        print(response.status_code)
        print(response.headers)

    return redirect("/display")
```

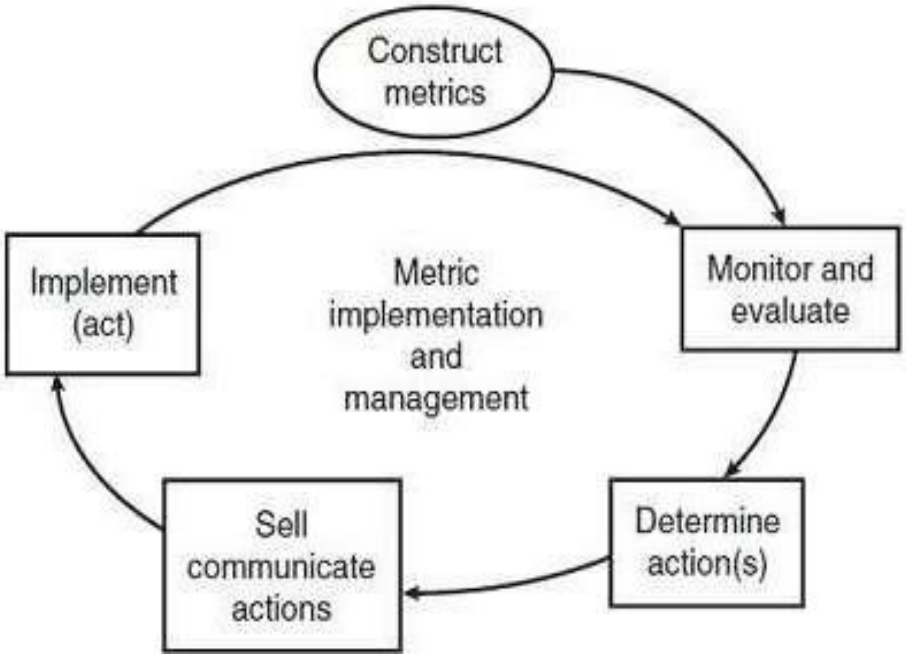
Screenshots



8. TESTING

8.1 TEST CASES

PERFORMANCE TESTING:



8.2 User Acceptance 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 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	0	0	0	0	0
Duplicate	0	0	2	0	2
External	0	0	0	0	0
Fixed	0	0	0	3	0
Not Reproduced	0	0	0	1	1
Skipped	0	0	0	0	0
Won't Fix	0	0	3	0	3
Totals	0	0	5	4	6

3. Test Case Analysis:

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

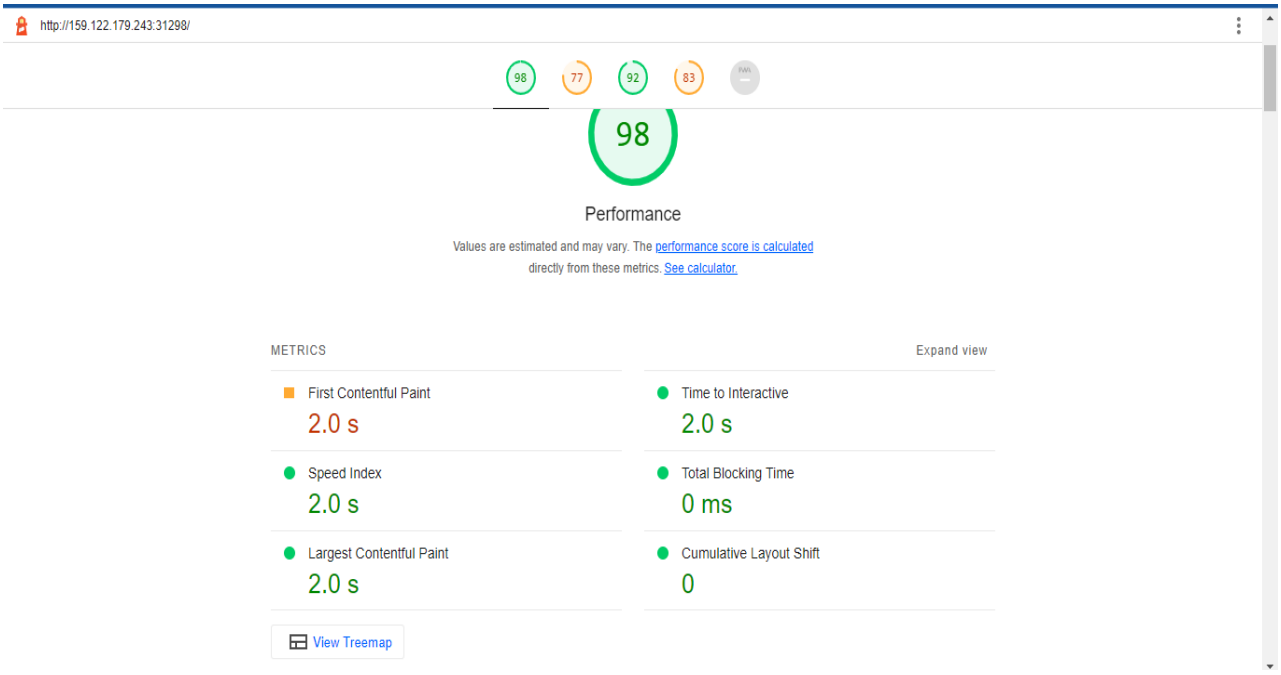
3. Test Case Analysis

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

Section	Total Cases	Not Tested	Fail	Pass
Login	4	0	0	4
Product	4	0	0	4
Location	3	0	0	3
Inventory	3	0	0	3
Marketplace	1	0	0	1

9. RESULTS

9.1 Performance Metrics:



10.ADVANTAGES & DISADVANTAGES

Advantages

1) You will spend mindfully

When you write down every expense it helps you spend more mindfully and prevents you from splurging. It makes you responsible with your spending.

2) Making financial control

When you track your expenses, you take complete control over your finances. At any one time, you will know exactly how much money is sitting in your bank account, and how much you can spend.

3) Identify problem areas

As you track your spending over time, you'll get a better idea of what's happening with your cash. Many of your daily expenses may seem really, but once you add up everything you spend on dining out, coffee, lottery tickets, or whatever your indulgence is, you may be shocked to find out how much your habits actually cost.

4) Make a better budget

By tracking your expenses it will help you make clear budgets for your monthly spends. After you set up a budget, which is a monthly plan for spending that takes into account your income and expenses, tracking expenses daily is essential to keeping you on that budget

5) Tracking your financial progress

Tracking your expenses on a day-to-day basis helps you to see your progress on the road to your financial goals.

Tracking your expenses on a day-to-day basis helps you to see your progress on the road to your financial goals.

6) Keeping finances organized

Disorganized finances lead to financial problems. It is easier to stay organized than it is to organize a messy financial situation.

7) Improving financial security

It helps you track your bank accounts. What if somebody steals your debit card information and starts spending your money? If you have a track on your spends you avoid these risks.

8) Encourages and increases savings

When you track your expenses you are likely to find wasteful expenses you can eliminate. This will help you encourage and increase your savings. By eliminating wasteful expenses it opens up the opportunity to redirect that money into savings.

9) Avoids debt

Tracking your expenses can be a powerful motivator to steer clear of debt. When you are in debt,and not tracking your day-to-day expenses, it’s easy to let the amount of debt you are paying eachmonth slip through the cracks, unnoticed. But, once you start tracking every dollar that leaves yourbank account, you will start to add up the debt payments, and it can be eye-opening.

Disadvantages

1) Your information may be less secure, and probably being used and sold. If the service is free, then the product is you.

2) Mint.com, like other financial apps, is a free service. They have to pay their bills somehow, so regardless of what their privacy policy may or may not say, just assume that your spending historyand trends are going to be recorded and analyzed, by someone, somewhere.

3) Now, you shouldn't have to worry about credit card fraud, these companies are large enough andsecure enough that you'll never have to worry about something like that.

11.CONCLUSION

The personal expense tracker application successfully avoids the manual calculation for avoiding calculating the income and expense per month. Monitoring your everyday expenses can set aside you cash, yet it can likewise help you set your monetary objectives for what's to come. On the offchance that you know precisely where your sum is going much of a stretch see where a few reductions and bargains can be made. Expense Tracker project is for keeping our day-to-day expenditures will helps us to keep record of our money daily. The project what we have created iswork more proficient than the other income and expense tracker. The project effectively keeps away from the manual figuring for trying not to ascertain the pay and cost each month. It's a user-friendly application.

12.FUTURE SCOPE

It will have various options to keep record (for example Food, Travelling Fuel, Salary etc). Automatically it will keep on sending notifications for our daily expenditure. In today's busy andexpensive life, we are in a great rush to make money, but at the end of the month we broke off. Aswe are unknowingly spending money on title and unwanted things. So, we have come over with the plan to follow our profit.

13.APPENDIX
13.1 SOURCE CODE:

App.py

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

import re

from flask_db2 import DB2

import ibm_db

import ibm_db_dbi

from sendgrid import *

import os

app = Flask(__name__)


app.secret_key = 'a'


"""

dsn_hostname = "ba99a9e6-d59e-4883-8fc0-
    d6a8c9f7a08f.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud"

dsn_uid = "vmk08423"

dsn_pwd = "3KfJl6HGDtPdbIWy"

dsn_driver = "{IBM DB2 ODBC DRIVER}"

dsn_database = "bludb"

dsn_port = "31321"

dsn_protocol = "tcpip"


dsn = (
```

```
    "DRIVER={0};"

    "DATABASE={1};"

    "HOSTNAME={2};"

    "PORT={3};"

    "PROTOCOL={4};"

    "UID={5};"

    "PWD={6};"

).format(dsn_driver, dsn_database, dsn_hostname, dsn_port, dsn_protocol, dsn_uid,
    dsn_pwd)

"""

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




app.config['database'] = 'bludb'

app.config['hostname'] = '8e359033-a1c9-4643-82ef-
    8ac06f5107eb.bs2io90l08kqb1od8lcg.databases.appdomain.cloud'

app.config['port'] = '30120'

app.config['protocol'] = 'tcpip'

app.config['uid'] = 'fsd14997'

app.config['pwd'] = '7JR2ia5UzeAseRvL'

app.config['security'] = 'SSL'

try:

    mysql = DB2(app)



    conn_str='DATABASE=bludb;HOSTNAME=8e359033-a1c9-4643-82ef-
    8ac06f5107eb.bs2io90l08kqb1od8lcg.databases.appdomain.cloud;SECURITY=SSL;
    PORT=30120;PROTOCOL=TCPIP;UID=fsd14997;PWD=7JR2ia5UzeAseRvL'
```

```
    ibm_db_conn = ibm_db.connect(conn_str,"")


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


# app.config['']


# mysql = MySQL(app)



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


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



#SIGN--UP--OR--REGISTER
```

```
@app.route("/signup")
def signup():
    return render_template("signup.html")
@app.route('/register', methods =['GET', 'POST'])
def register():
    msg = ''
    print("Break point1")
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']
        password = request.form['password']
        print("Break point2" + "name: " + username + "------" + email + "------" +
    password)


        try:
            print("Break point3")
            connectionID = ibm_db_dbi.connect(conn_str, '', '')
            cursor = connectionID.cursor()
            print("Break point4")
        except:
            print("No connection Established")
        print("Break point5")
        sql = "SELECT * FROM register WHERE username = ?"
        stmt = ibm_db.prepare(ibm_db_conn, sql)
        ibm_db.bind_param(stmt, 1, username)
```

```
    ibm_db.execute(stmt)
    result = ibm_db.execute(stmt)
    print(result)
    account = ibm_db.fetch_row(stmt)
    print(account)

    param = "SELECT * FROM register WHERE username = " + "\'" + username +
"\'"
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    print("---- ")
    dictionary = ibm_db.fetch_assoc(res)
    while dictionary != False:
        print("The ID is : ", dictionary["USERNAME"])
        dictionary = ibm_db.fetch_assoc(res)

    # dictionary = ibm_db.fetch_assoc(result)
    # cursor.execute(stmt)

    # account = cursor.fetchone()
    # print(account)

    # while ibm_db.fetch_row(result) != False:
    #     # account = ibm_db.result(stmt)
    #     print(ibm_db.result(result, "username"))
```

```
    # print(dictionary["username"])
    print("break point 6")
    if account:
        msg = 'Username 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:
        sql2 = "INSERT INTO register (username, email,password) VALUES (?, ?, ?)"
        stmt2 = ibm_db.prepare(ibm_db_conn, sql2)
        ibm_db.bind_param(stmt2, 1, username)
        ibm_db.bind_param(stmt2, 2, email)
        ibm_db.bind_param(stmt2, 3, password)
        ibm_db.execute(stmt2)
        # cursor.execute('INSERT INTO register VALUES (NULL, % s, % s, % s)',
(username, email,password))
        # mysql.connection.commit()
        msg = 'You have successfully registered !'
    return render_template('signup.html', msg = msg)
```

#LOGIN--PAGE

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


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



    if request.method == 'POST' :
        username = request.form['username']
        password = request.form['password']
        # cursor = mysql.connection.cursor()
        # cursor.execute('SELECT * FROM register WHERE username = % s AND
     password = % s', (username, password ),)
        # account = cursor.fetchone()
        # print (account)


        sql = "SELECT * FROM register WHERE username = ? and password = ?"
        stmt = ibm_db.prepare(ibm_db_conn, sql)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.bind_param(stmt, 2, password)
        result = ibm_db.execute(stmt)
```

```
    print(result)
    account = ibm_db.fetch_row(stmt)
    print(account)

    param = "SELECT * FROM register WHERE username = " + "\'" + username +
"\'" + " and password = " + "\'" + password + "\'"
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    dictionary = ibm_db.fetch_assoc(res)

    # sendmail("hello sakthi","sivasakthisairam@gmail.com")

    if account:
        session['loggedin'] = True
        session['id'] = dictionary["ID"]
        userid = dictionary["ID"]
        session['username'] = dictionary["USERNAME"]
        session['email'] = dictionary["EMAIL"]

        return redirect('/home')
    else:
        msg = 'Incorrect username / password !'

return render_template('login.html', msg = msg)
```

#ADDING----DATA

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


@app.route('/addexpense',methods=['GET', 'POST'])
def addexpense():

    date = request.form['date']
    expensename = request.form['expensename']
    amount = request.form['amount']
    paymode = request.form['paymode']
    category = request.form['category']
```

```
print(date)

p1 = date[0:10]

p2 = date[11:13]

p3 = date[14:]

p4 = p1 + "-" + p2 + "." + p3 + ".00"

print(p4)

# cursor = mysql.connection.cursor()

# cursor.execute('INSERT INTO expenses VALUES (NULL,  % s, % s, % s, % s, %
 s, % s)', (session['id'] ,date, expensename, amount, paymode, category))

# mysql.connection.commit()

# print(date + " " + expensename + " " + amount + " " + paymode + " " + category)


sql = "INSERT INTO expenses (userid, date, expensename, amount, paymode,
 category) VALUES (?, ?, ?, ?, ?, ?)"

stmt = ibm_db.prepare(ibm_db_conn, sql)

ibm_db.bind_param(stmt, 1, session['id'])

ibm_db.bind_param(stmt, 2, p4)

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.execute(stmt)


print("Expenses added")
```

```
# email part


param = "SELECT * FROM expenses WHERE userid = " + str(session['id']) + "
 AND MONTH(date) = MONTH(current timestamp) AND YEAR(date) =
 YEAR(current timestamp) ORDER BY date DESC"

res = ibm_db.exec_immediate(ibm_db_conn, param)

dictionary = ibm_db.fetch_assoc(res)

expense = []

while dictionary != False:

    temp = []

    temp.append(dictionary["ID"])

    temp.append(dictionary["USERID"])

    temp.append(dictionary["DATE"])

    temp.append(dictionary["EXPENSENAME"])

    temp.append(dictionary["AMOUNT"])

    temp.append(dictionary["PAYMODE"])

    temp.append(dictionary["CATEGORY"])

    expense.append(temp)

    print(temp)

    dictionary = ibm_db.fetch_assoc(res)


total=0

for x in expense:

      total += x[4]


param = "SELECT id, limitss FROM limits WHERE userid = " + str(session['id']) + "
```

```
 ORDER BY id DESC LIMIT 1"

res = ibm_db.exec_immediate(ibm_db_conn, param)

dictionary = ibm_db.fetch_assoc(res)

row = []

s = 0

while dictionary != False:

    temp = []

    temp.append(dictionary["LIMITSS"])

    row.append(temp)

    dictionary = ibm_db.fetch_assoc(res)

    s = temp[0]


if total > int(s):

    msg = "Hello " + session['username'] + " , " + "you have crossed the monthly limit
 of Rs. " + str(s) + "/- !!!" + "\n" + "Thank you, " + "\n" + "Team Experte"

    #sendmail(msg,session['email'])

    sg =
sendgrid.SendGridAPIClient(api_key='SG.wFFlahHgRzqdUSL2mMCigQ.G3R41H
26yv0zlBHQyIISdyhEjfjOdEyftsw0PPV6pe0')

    from_email = Email("balajinrcse2022@gmail.com")

    cusmail = session['email']

    to_email = To(cusmail)

    content = Content("text/html", msg)

    subject = "Limit alert !!! - Experte"


    mail = Mail(from_email, to_email, subject, content)
```

```
        mail_json = mail.get()
        response = sg.client.mail.send.post(request_body=mail_json)

        print(response.status_code)
        print(response.headers)

    return redirect("/display")



#DISPLAY---graph


@app.route("/display")
def display():
    print(session["username"],session['id'])

    param = "SELECT * FROM expenses WHERE userid = " + str(session['id']) + "
     ORDER BY date DESC"
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    dictionary = ibm_db.fetch_assoc(res)
    expense = []
    while dictionary != False:
        temp = []
        temp.append(dictionary["ID"])
        temp.append(dictionary["USERID"])
```

```
        temp.append(dictionary["DATE"])
        temp.append(dictionary["EXPENSENAME"])
        temp.append(dictionary["AMOUNT"])
        temp.append(dictionary["PAYMODE"])
        temp.append(dictionary["CATEGORY"])
        expense.append(temp)
        print(temp)
        dictionary = ibm_db.fetch_assoc(res)
    return render_template('display.html' ,expense = expense)
@app.route('/delete/<string:id>', methods = ['POST', 'GET' ])
def delete(id):
    param = "DELETE FROM expenses WHERE  id = " + id
    res = ibm_db.exec_immediate(ibm_db_conn, param)

    print('deleted successfully')
    return redirect("/display")
#UPDATE---DATA

@app.route('/edit/<id>', methods = ['POST', 'GET' ])
def edit(id):
    # cursor = mysql.connection.cursor()
    # cursor.execute('SELECT * FROM expenses WHERE  id = %s', (id,))
    # row = cursor.fetchall()

    param = "SELECT * FROM expenses WHERE  id = " + id
```

```
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    dictionary = ibm_db.fetch_assoc(res)
    row = []
    while dictionary != False:
        temp = []
        temp.append(dictionary["ID"])
        temp.append(dictionary["USERID"])
        temp.append(dictionary["DATE"])
        temp.append(dictionary["EXPENSENAME"])
        temp.append(dictionary["AMOUNT"])
        temp.append(dictionary["PAYMODE"])
        temp.append(dictionary["CATEGORY"])
        row.append(temp)
        print(temp)
        dictionary = ibm_db.fetch_assoc(res)

    print(row[0])
    return render_template('edit.html', expenses = row[0])
@app.route('/update/<id>', methods = ['POST'])
def update(id):
  if request.method == 'POST' :

      date = request.form['date']
      expensename = request.form['expensename']
      amount = request.form['amount']
```

```
    paymode = request.form['paymode']
    category = request.form['category']
    p1 = date[0:10]
    p2 = date[11:13]
    p3 = date[14:]
    p4 = p1 + "-" + p2 + "." + p3 + ".00"

    sql = "UPDATE expenses SET date = ? , expensename = ? , amount = ?, paymode =
    ?, category = ? WHERE id = ?"
    stmt = ibm_db.prepare(ibm_db_conn, sql)
    ibm_db.bind_param(stmt, 1, p4)
    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, id)
    ibm_db.execute(stmt)

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

@app.route("/limit" )
def limit():
     return redirect('/limitn')
```

```
@app.route("/limitnum" , methods = ['POST' ])
def limitnum():
    if request.method == "POST":
        number= request.form['number']
        sql = "INSERT INTO limits (userid, limitss) VALUES (?, ?)"
        stmt = ibm_db.prepare(ibm_db_conn, sql)
        ibm_db.bind_param(stmt, 1, session['id'])
        ibm_db.bind_param(stmt, 2, number)
        ibm_db.execute(stmt)

        return redirect('/limitn')

@app.route("/limitn")
def limitn():
    param = "SELECT id, limitss FROM limits WHERE userid = " + str(session['id']) + "
     ORDER BY id DESC LIMIT 1"
    res = ibm_db.exec_immediate(ibm_db_conn, param)
    dictionary = ibm_db.fetch_assoc(res)
    row = []
    s = " /-"
    while dictionary != False:
        temp = []
        temp.append(dictionary["LIMITSS"])
        row.append(temp)
```

```
        dictionary = ibm_db.fetch_assoc(res)
        s = temp[0]

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

#REPORT

@app.route("/today")
def today():
     param1 = "SELECT TIME(date) as tn, amount FROM expenses WHERE userid = "
    + str(session['id']) + " AND DATE(date) = DATE(current timestamp) ORDER BY
    date DESC"
     res1 = ibm_db.exec_immediate(ibm_db_conn, param1)
     dictionary1 = ibm_db.fetch_assoc(res1)
     texpense = []

     while dictionary1 != False:
        temp = []
        temp.append(dictionary1["TN"])
        temp.append(dictionary1["AMOUNT"])
        texpense.append(temp)
        print(temp)
        dictionary1 = ibm_db.fetch_assoc(res1)

    #   cursor = mysql.connection.cursor()
    #   cursor.execute('SELECT * FROM expenses WHERE userid = % s AND
```

```
DATE(date) = DATE(NOW()) AND date ORDER BY `expenses`.`date`
DESC',(str(session['id'])))

#   expense = cursor.fetchall()


 param = "SELECT * FROM expenses WHERE userid = " + str(session['id']) + "
AND DATE(date) = DATE(current timestamp) ORDER BY date DESC"

 res = ibm_db.exec_immediate(ibm_db_conn, param)

 dictionary = ibm_db.fetch_assoc(res)

 expense = []

 while dictionary != False:

    temp = []

    temp.append(dictionary["ID"])

    temp.append(dictionary["USERID"])

    temp.append(dictionary["DATE"])

    temp.append(dictionary["EXPENSENAME"])

    temp.append(dictionary["AMOUNT"])

    temp.append(dictionary["PAYMODE"])

    temp.append(dictionary["CATEGORY"])

    expense.append(temp)

    print(temp)

    dictionary = ibm_db.fetch_assoc(res)



 total=0

 t_food=0

 t_entertainment=0
```

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


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

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

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

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

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

```
    print(total)


    print(t_food)

    print(t_entertainment)

    print(t_business)

    print(t_rent)

    print(t_EMI)

    print(t_other)




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

                    t_food = t_food,t_entertainment =  t_entertainment,

                    t_business = t_business,  t_rent =  t_rent,

                    t_EMI =  t_EMI,  t_other =  t_other )



@app.route("/month")

def month():

   #   cursor = mysql.connection.cursor()

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

   #   texpense = cursor.fetchall()

   #   print(texpense)
```

```
 param1 = "SELECT DATE(date) as dt, SUM(amount) as tot FROM expenses
WHERE userid = " + str(session['id']) + " AND MONTH(date) = MONTH(current
timestamp) AND YEAR(date) = YEAR(current timestamp) GROUP BY
DATE(date) ORDER BY DATE(date)"

 res1 = ibm_db.exec_immediate(ibm_db_conn, param1)

 dictionary1 = ibm_db.fetch_assoc(res1)

 texpense = []


 while dictionary1 != False:

    temp = []

    temp.append(dictionary1["DT"])

    temp.append(dictionary1["TOT"])

    texpense.append(temp)

    print(temp)

    dictionary1 = ibm_db.fetch_assoc(res1)

 param = "SELECT * FROM expenses WHERE userid = " + str(session['id']) + "
AND MONTH(date) = MONTH(current timestamp) AND YEAR(date) =
YEAR(current timestamp) ORDER BY date DESC"

 res = ibm_db.exec_immediate(ibm_db_conn, param)

 dictionary = ibm_db.fetch_assoc(res)

 expense = []

 while dictionary != False:

    temp = []

    temp.append(dictionary["ID"])

    temp.append(dictionary["USERID"])

    temp.append(dictionary["DATE"])
```

```
    temp.append(dictionary["EXPENSENAME"])
    temp.append(dictionary["AMOUNT"])
    temp.append(dictionary["PAYMODE"])
    temp.append(dictionary["CATEGORY"])
    expense.append(temp)
    print(temp)
    dictionary = ibm_db.fetch_assoc(res)



total=0
t_food=0
t_entertainment=0
t_business=0
t_rent=0
t_EMI=0
t_other=0



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

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

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

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

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

print(total)


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




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

```
                t_food = t_food,t_entertainment =  t_entertainment,

                t_business = t_business,  t_rent =  t_rent,

                t_EMI =  t_EMI,  t_other =  t_other )


@app.route("/year")

def year():

    #   cursor = mysql.connection.cursor()

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

    #   texpense = cursor.fetchall()

    #   print(texpense)


     param1 = "SELECT MONTH(date) as mn, SUM(amount) as tot FROM expenses
    WHERE userid = " + str(session['id']) + " AND YEAR(date) = YEAR(current
    timestamp) GROUP BY MONTH(date) ORDER BY MONTH(date)"

     res1 = ibm_db.exec_immediate(ibm_db_conn, param1)

     dictionary1 = ibm_db.fetch_assoc(res1)

     texpense = []


     while dictionary1 != False:

        temp = []

        temp.append(dictionary1["MN"])

        temp.append(dictionary1["TOT"])

        texpense.append(temp)

        print(temp)

        dictionary1 = ibm_db.fetch_assoc(res1)
```

```
#   cursor = mysql.connection.cursor()

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

#   expense = cursor.fetchall()



  param = "SELECT * FROM expenses WHERE userid = " + str(session['id']) + "
 AND YEAR(date) = YEAR(current timestamp) ORDER BY date DESC"

  res = ibm_db.exec_immediate(ibm_db_conn, param)

  dictionary = ibm_db.fetch_assoc(res)

  expense = []

  while dictionary != False:

      temp = []

      temp.append(dictionary["ID"])

      temp.append(dictionary["USERID"])

      temp.append(dictionary["DATE"])

      temp.append(dictionary["EXPENSENAME"])

      temp.append(dictionary["AMOUNT"])

      temp.append(dictionary["PAYMODE"])

      temp.append(dictionary["CATEGORY"])

      expense.append(temp)

      print(temp)

      dictionary = ibm_db.fetch_assoc(res)
```

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


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

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

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

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

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


    print(total)


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




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


#log-out


@app.route('/logout')
```

```
    def logout():
        session.pop('loggedin', None)
        session.pop('id', None)
        session.pop('username', None)
        session.pop('email', None)
        return render_template('home.html')
    port = os.getenv('VCAP_APP_PORT', '8080')
    if __name__ == "__main__":
        app.secret_key = os.urandom(12)
app.run(host='0.0.0.0', port=5000, debug=True)
```

13.2 GitHub Repository for Templates:

https://github.com/IBM-EPBL/IBM-Project-23053-1659865323

Project Demo Link:

https://drive.google.com/file/d/1E1JwnWW6kr_vGRbg4TyiiJWerRiR1NvN/view?usp=sharing