

PERSONAL
EXPENSE TRACKER
APPLICATION
-REPORT

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Project Name	Personal Expense Tracker Application
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1. INTRODUCTION

This Expense Tracker application falls in the Finance Category and serves the important purpose of managing finances which is a very important part of one's life. In simple words, a Finance app makes your life easier by helping you to manage your finances efficiently.

1.1 PROJECT OVERVIEW

Personal finance applications will ask users to add their expenses and it would eliminate messy sticky notes, spread sheets and data handling inconsistency problems while offering the best overview of your expenses.

1.2 PURPOSE

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 day/month if the limit is exceeded the user will be notified with an alert.

2.LITERATURE SURVEY

2.1 Existing Problem

The problem with today's generation is that they can't remember where all of their money has gone and must eventually live on the little money they have left for their essential needs. There is currently no perfect solution that allows a person to easily and efficiently track their daily expenditure and notify them of a money shortage. To do so, they must keep long ledgers or computer logs to keep such data, and the calculation is done manually by the user, which may result in errors and losses. There is no complete track.

2.2 References

1. Expense Manager Application -

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

2. Expense Tracker –

https://www.irjmets.com/uploadedfiles/paper/issue_4_april_2022/21604/final/fin_irjmets1651132467.pdf

3. Daily Expense Tracker –

<https://journals.resaim.com/ijresm/article/view/2039>

4. Expenditure Management System –

<http://www.journaleca.com/gallery/jeca%20-%202654.pdf>

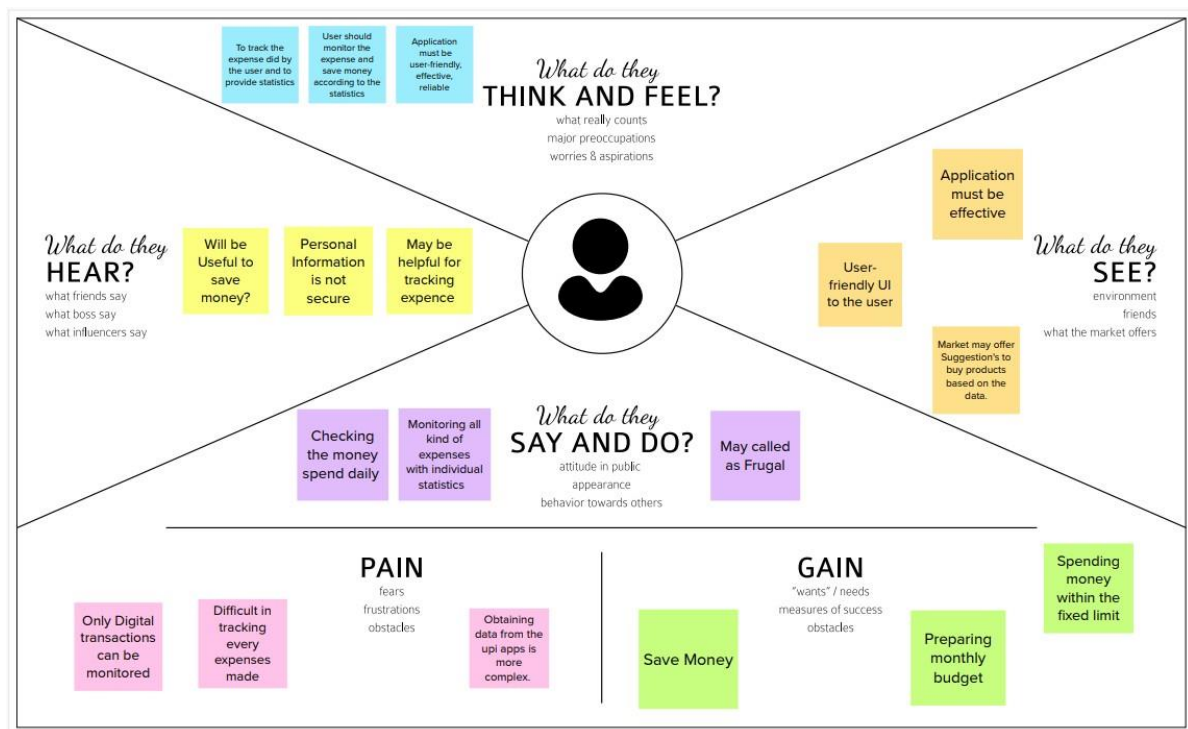
2.3 Problem Statement

This Expense Tracker is a web application that assists users in tracking and managing their personal expenses. This app allows users to keep a digital diary, which will keep track of a user's daily income and expenses. The user will be able to instantly add his/her expenditures and review them from anywhere and at any time using the internet. Excel sheets contribute very little to tracking. Furthermore, they lack the advanced functionality of automatically preparing graphical visuals. It will not only save people's time, but it will also ensure error-free calculations. The user only needs to enter their income and expenses, and the system will handle the rest.

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes. It is a useful tool to help teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.



3.2 Ideation & Brainstorming

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions

2

Brainstorm

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

🕒 10 minutes

Tip

You can attach a sticky note and hit the pencil (click to open) icon to start drawing.

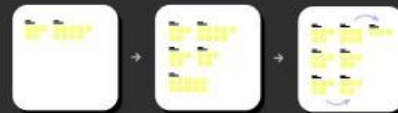
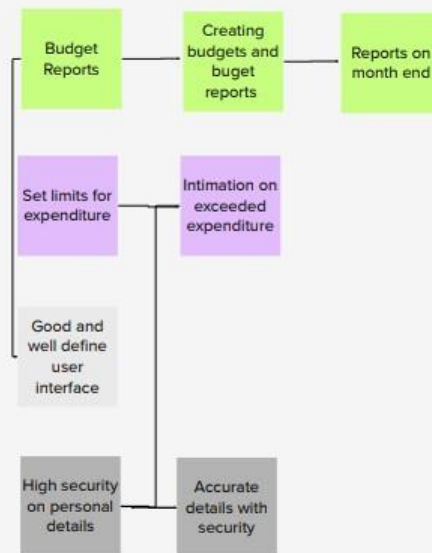
Niranjan R**Sithu Raj T****Prabhu R****Nithish Kumar**

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 can break it up into smaller sub-groups.

🕒 20 minutes



3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	There are numerous budgeting tools available online, but not all of them are effective in assisting users in creating and sticking to a budget. Some of the drawbacks include ongoing maintenance and the consolidation of all user financial accounts and activity into a single dashboard. However, much of today's software includes complicated features that are difficult to use. The main issue is counting paper receipts and calculating expense statistics.
2.	Idea / Solution description	Including all expenses, including cash, bank checks, and so on. This app keeps track of everything you spend money on. Simply click to enter your expense. To reduce human error, avoid data loss, and speed up settlements. To display the pie chart or graph lines in this programme.
3.	Novelty / Uniqueness	Including all the expense including money spend using cash, Bank-cheques, etc. This application keeps track of all of your spending. To enter your expense, simply click. To decrease human error, prevent data loss, and expedite settlements. In this program to display the pie chart or graph lines.
4.	Social Impact / Customer Satisfaction	With this tool, one can keep track of their own expenses and create a monthly or annual budget. If your spending exceeds the specified limit, the application will display statistics and send an alert message.
5.	Business Model (Revenue Model)	Business people can use the subscription/premium to access extra features of this application, as well as adding advertisements to generate revenue.
6.	Scalability of the Solution	Statistics from IBM-cloud can be displayed to users with high scalability and accuracy.

3.4 Problem Solution fit

The solution to this problem is, the people who gets regular payments can able to track their payments and avoid unwanted expenses. If the limit is exceeded the user will be notified with an alert.

- **Novelty / Uniqueness** - Notification can be received.
- **Social Impact / Customer Satisfaction** - Using this application one can track their personal expenses and frame a daily/monthly budget. If your expense exceeded than specified limit, the application will show you an alert message. This will make a impact on Mobile Banking for Customers' Satisfaction.
- **Business Model (Revenue Model)** - Business people can use subscription/premium feature of this application to gain revenue.
- **Scalability of the Solution** - The scalability of the application depends on security, the working of the application even during when the network gets down etc...

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENT

1. User Registration
2. User Confirmation / Confirmation via Email.
3. Tracking Expense
4. Alert Message if the amount exceeds the budget limit.
5. This application will show a graphical representation of their expenses.

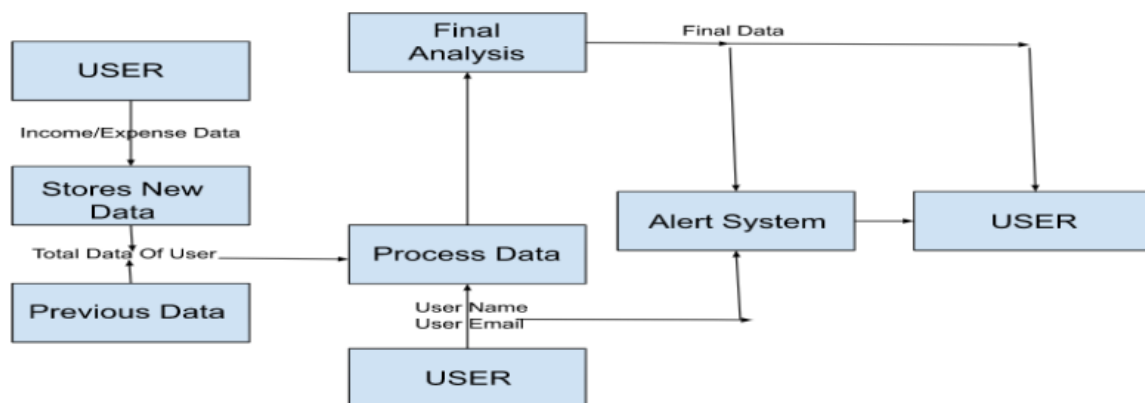
4.2 NON FUNCTIONAL REQUIREMENTS

1. Usability
2. Reliability
3. Supportability
4. Performance
5. Availability

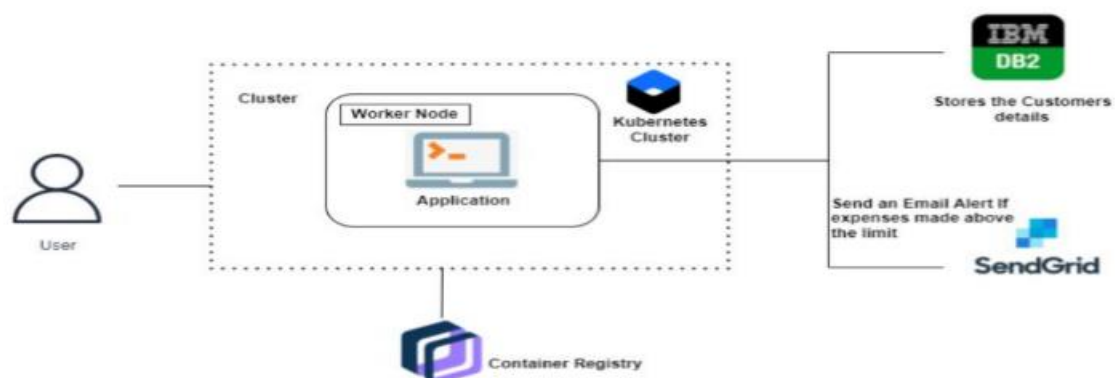
5. PROJECT DESIGN

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



5.3 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority
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
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High
		USN- 3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low
	Login	USN - 4	As a user, I can log into the application by entering email & password	I can access the application	High
	Dashboard	USN - 5	As a user I can enter my income and expenditure details.	I can view my daily expenses	High
Customer Care Executive		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
Administrator	Application	USN - 7	As a administrator I can upgrade or update the application.	I can fix the bug which arises for the customers and users of the application	Medium

6.PROJECT PLANNING & SCHEDULING

6.1 SPRIT PLANNING & ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Niranjan R
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Sithu Raj T
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2	Low	Sithu Raj T
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium	Nithish Kumar S
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	Prabhu R
Sprint-3	Dashboard	USN-6	As a user I can see the expenditure details on the application	3	High	Nithish Kumar S
Sprint-3	Limits	USN-6	As a user I can set my monthly expense limit so that I receive a mail on exceeding that	4	High	Niranjan R
Sprint-4	Reports	USN-6	As a user I can view the graphical form of my expenses category wise	5	Medium	Prabhu R

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	6	6 Days	24 Oct 2022	29 Oct 2022	6	29 Oct 2022
Sprint-2	2	6 Days	31 Oct 2022	05 Nov 2022	2	05 Nov 2022
Sprint-3	7	6 Days	07 Nov 2022	12 Nov 2022	7	12 Nov 2022
Sprint-4	5	6 Days	14 Nov 2022	19 Nov 2022	5	19 Nov 2022

7. Coding And Solutioning:

7.1. Features

Feature 1: Add Expense

Feature 2: Update expense

Feature 3: Delete Expense

Feature 4: Set Limit

Feature 5: Send Alert to users

7.2. Other Features

Track your expenses anywhere, anytime. Seamlessly manage your money and budget without any financial paperwork. Just submit your expenditures irrespective of time and location. Tracking expenditures in real-time and get notified instantly. Also, reduced human errors.

Code:

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

```
import ibm_db
```

```
import re
```

```
app = Flask(__name__)
```

```

app.secret_key = 'a'

conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=2f3279a5-
73d1-4859-88f0-
a6c3e6b4b907.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud;POR
T=30756;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA
.crt;UID=;PWD=;","")

#HOME--PAGE

@app.route("/home")

def home():

    return render_template("home.html")

@app.route("/signup")

def signup():

    return render_template("signup.html")

@app.route('/register', methods =['GET', 'POST'])

def register():

    msg = "

    if request.method == 'POST' :

        name = request.form['name']
        profession = request.form['profession']
        email = request.form['email']
        password = request.form['password']
        confirm_password= request.form['confirm_password']


        cursor = mysql.connection.cursor()

        cursor.execute('SELECT * FROM register WHERE name = % s',
(name ))

        account = cursor.fetchone()

```

```
print(account)
if account:
    msg = 'Account already exists !'
elif not re.match(r'^@[^@]+\.[^@]+', email):
    msg = 'Invalid email address !'
elif not re.match(r'[A-Za-z0-9]+', username):
    msg = 'name must contain only characters and numbers !'
else:
    cursor.execute('INSERT INTO register VALUES ( % s, % s, % s,%
s,% s)', (username, profession,email,password,confirm_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':  
    name = request.form['name']  
    password = request.form['password']  
    cursor = mysql.connection.cursor()  
    cursor.execute('SELECT * FROM register WHERE username = % s  
AND password = % s', (username, password ),)  
    account = cursor.fetchone()  
    print (account)  
  
    if account:  
        session['loggedin'] = True  
        session['id'] = account[0]  
        userid= account[0]  
        session['username'] = account[1]  
  
        return redirect('/home')  
    else:  
        msg = 'Incorrect username / password !'  
        return render_template('login.html', msg = msg)
```

```
#ADDING----DATA
```

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

```
@app.route('/addexpense',methods=['GET', 'POST'])
def addexpense():
    type = request.form['type']
    date = request.form['date']
    name = request.form['ename']
    amount = request.form['amount']
    cursor = mysql.connection.cursor()
    cursor.execute('INSERT INTO expenses VALUES ( % s, % s, % s, % s,
% s)', (session['id'] , type, date, name, amount))
    mysql.connection.commit()
    print(date + " " + name + " " + amount + " " + type)
    return redirect("/display")
```

#DISPLAY---graph

```
@app.route("/display")
def display():
    print(session["username"],session['id'])
    return render_template('chart.html' ,expense = expense)
    return render_template('chart1.html' ,expense = expense)
```



```

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

@app.route("/limitnum" , methods = ['POST' ])
def limitnum():
    if request.method == "POST":
        number= request.form['number']
        cursor = mysql.connection.cursor()
        cursor.execute('INSERT INTO limits VALUES (% s, % s)
',(session['id'], number))
        mysql.connection.commit()
        return redirect('/limitn')

if __name__ == "__main__":
    app.run(debug=True)

```

7.3 Database Schema

```

'SELECT * FROM register WHERE name = % s', (name ))
    account = cursor.fetchone()
    print(account)
    if account:
        msg = 'Account already exists !'
    elif not re.match(r'[^@ ]+@[^@ ]+\.[^@ ]+', email):
        msg = 'Invalid email address !'

```

```

elif not re.match(r'[A-Za-z0-9]+', username):
    msg = 'name must contain only characters and numbers !'
else:
    cursor.execute('INSERT INTO register VALUES ( % s, % s, % s,%
s,% s)', (username, profession,email,password,confirm_password))
    mysql.connection.commit()
    msg = 'You have successfully registered !'
    return render_template('signup.html', msg = msg)

```

(Refer github for rest of the code)

8. TESTING:

8.1. TESTING:

- **Login Page (Funcional)**
- **Login Page (UI)**
- **Add Expense Page (Functional)**

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 Personal Expense Tracker 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	10	4	2	8	24

Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	9	2	4	11	20
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	0	1	8
Totals	22	14	11	22	65

3. Test Case Analysis

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

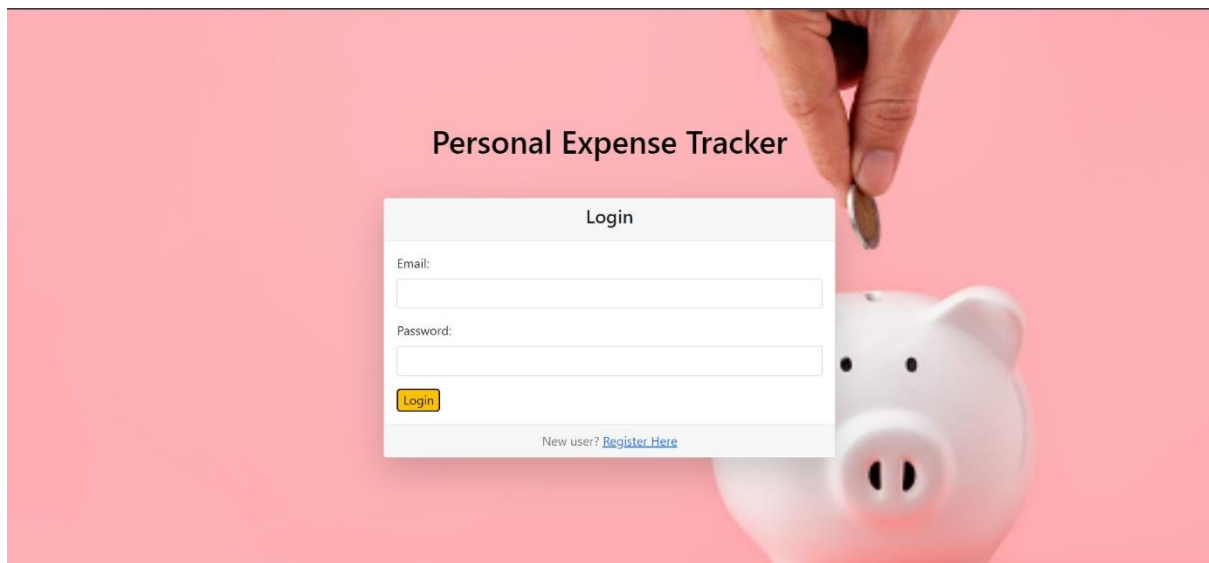
Section	Total Cases	Not Tested	Fail	Pass
Inference	7	0	0	7
Login	43	0	0	43
Logout	2	0	0	2

9. RESULTS

9.1 Home Page



9.2 Login Page



The login page features a light pink background with a hand dropping a coin into a white piggy bank. A white login form is centered on the page. The form has a title 'Login' and two input fields for 'Email:' and 'Password:'. Below the password field is a yellow 'Login' button. At the bottom of the form, there is a link for 'New user? [Register Here](#)'.

Personal Expense Tracker

Login

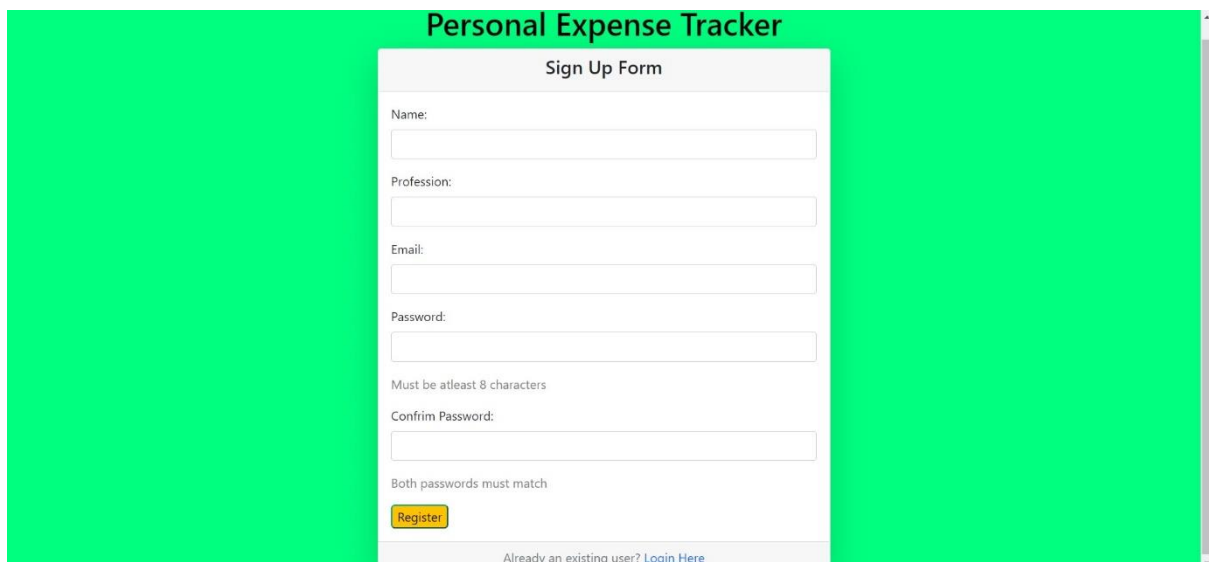
Email:

Password:

[Login](#)

New user? [Register Here](#)

9.3 Signup Page



The signup page has a bright green background. A white sign-up form is centered. The form is titled 'Sign Up Form' and includes input fields for 'Name:', 'Profession:', 'Email:', 'Password:', and 'Confirm Password:'. Below the password field, there is a note 'Must be atleast 8 characters'. Below the confirm password field, there is a note 'Both passwords must match'. A yellow 'Register' button is at the bottom of the form. At the very bottom of the form, there is a link for 'Already an existing user? [Login Here](#)'.

Personal Expense Tracker

Sign Up Form

Name:

Profession:

Email:

Password:

Must be atleast 8 characters

Confirm Password:

Both passwords must match

[Register](#)

Already an existing user? [Login Here](#)

9.4 Add_Expense Page

Personal Expense Tracker

Add a new item:

Type: Name:

Date: Amount:

Type	Name	Date	Amount	Options
Card	phone	2022-05-15	Rs.45000	Delete
Cash	Hotel	2022-04-01	Rs.1000	Delete

9.5 About Page

About Us Page

Our Team

Niranjan

Team Lead
B.Tech (IT)
niranjan@example.com

Contact

Nithish Kumar

Team Member 1
B.Tech (IT)
nithish@example.com

Contact

Prabhu

Team Member 2
B.Tech (IT)
prabhu@example.com

Contact

Sithu Raj

Team Member 3
B.Tech (IT)
sithu@example.com

Contact

9.6 Contact Page

Contact Form

First Name

Your name...

Last Name

Your last name...

Country

India

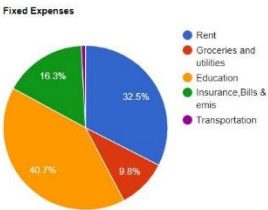
Subject

Write something...

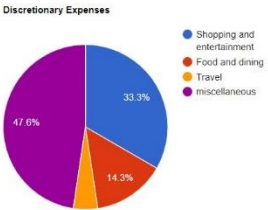
Submit

9.7 Chart Page

My Expense Report



My Expense Report



10. ADVANTAGES AND DISADVANTAGES

10.1 ADVANTAGES:

One of the major benefits of spending tracking is that one is always aware of the state of one's personal finances. Tracking your spending can help you stick to your budget not only in general, but also in specific categories such as housing, food, transportation, and gifts. One advantage is that doing this automatically can be quick and easy. Another advantage is that many automatic spending tracking software programs are free. Having the program on a handheld device is a major advantage because it can be checked before spending to ensure that the available budget is not exceeded.

10.2 DISADVANTAGES:

A disadvantage of any system used to track spending is that it may be started then tapered off until it is completely forgotten about. Even with constant tracking of one's spending habits, financial goals are not guaranteed to be met. It can be turned into a benefit if one is determined to continue attempting to manage all finances properly.

11. CONCLUSION:

A comprehensive money management strategy necessitates decision-making clarity and conviction. To understand the personal finances, you will need a defined goal and a clear vision. This is where an expense tracking app comes into play. An expense tracking app is a specialised set of services for people who want to effectively manage their earnings and plan their expenses and savings. It allows you to keep track of all transactions such as bills, refunds, payrolls, receipts, taxes, and so on on a daily, weekly, and monthly basis.

12. FUTURE SCOPE:

- Achieve your business goals with a tailored web app that perfectly fits your business.
- Scale-up at the pace your business is growing.
- Deliver an outstanding customer experience through additional control over the app.

- Control the security of your business and customer data.
- Boost the productivity of all the processes within the organization.
- Increase efficiency and customer satisfaction with an app aligned to their needs.
- Ability to provide valuable insights.
- Optimize sales processes to generate more revenue through enhanced data collection.

13. APPENDIX

Source Code

The source code has been uploaded in GitHub.

GitHub & Project Demo Link

The GitHub Link: <https://github.com/IBM-EPBL/IBM-Project-17332-1659634222>

Project Demo Link:

https://drive.google.com/drive/folders/1tCtQk3gw27U9NCFfBVECUstUmBvzHoik?usp=share_link