Python Expense Tracker Application

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Abstract: It's a Python Expense Tracker that helps you keep track of your savings and spending. Plus, it alerts you if you go over your set limit. An expense tracker is like a digital notebook that helps you keep track of all your money transactions. It also gives you reports about your financial activities. Nowadays, life is very busy and people want to make more money, so they rush around a lot. But sometimes, they forget to keep track of their money properly. That's where an expense tracker comes in handy. It's a great tool that lets you manage and keep track of your expenses easily. Daily based expense tracking guides us saving more money. That system makes you to be in control and win your intention.

Keywords: *Python, Flask, Docker, 8GB RAM, OS-Windows/Linux/MAC, Laptop/Desktop*

I. INTRODUCTION

In today's world, smartphones are found in each and every part of world. Every phase of generation makes use of smartphones in all aspects. In order to make actions easier, living easier and day to day work easier we often make use of mobile applications that attract and often keeps us in touch with them.

The Expense Tracker application comes under financial category. Handling everyday finances is really important for everyone. The smarter we are with our money, the more we can benefit from it.. The software application has been designed, developed, and tested as per Software Development Life cycle. The software application interface is done using IBM Cloud Services. The Expense Application does not involve much interaction with user. It includes them having to enter Saving amount, expense, limit set by uses, enrolling newly to application using email id for verification purpose. User will be able to analyses thee saved data daily, monthly and yearly in the form of excel data or graph, pdf format and it can also be printed by connecting with nearby connected printer or even scanner by a scanner.

User initially enrolls himself in this application so that he could automatically login in using his users name and password into the application. First, the user puts in how much they want to save. Then, they decide how much they're okay with spending.. Then user adds up expenses on daily basis or as per his convenience. The app can forecast a user's income and expenses using data mining. Managing an organization's expenses through systematic budgeting and tracking can be a risky and crucial task. The Expense Tracker app is really useful for organizations. It has a lot of benefits, especially for the people involved in managing the organization's expenses. With this app, handling expenses becomes much easier for the organization. It helps keep track of where the money goes and makes sure unnecessary spending is kept in check. This expense tracking app has many advantages and benefits. It helps organizations operate more smoothly and efficiently.

The goal of this project is to carefully monitor expenses to make informed decisions. Because money matters and hence for wiser expense sure that they stay on budget. It is developed in such a way that it's now easier to track the expense than ever before within making and keeping an eye this application has been built. A personal motive of project is making an easier, fast and smoother system between which the best way is to track and record all financial informational data.

II.LITERATURE REVIEW

2.1 Angad Manchanda , "Expense Tracker Mobile Application", 2012,IEEE

This app helps users keep an eye on their expenses and also helps them cut down unnecessary spending, promoting more responsible lifestyles [1].

2.2 Girish Bekaroo and Sameer Sunhaloo , "Intelligent Online Budget Tracker", 16 June 2014, IEEE

This tracker intelligently tracks expenses online, providing a clear plan and addressing budget issues at home. Users can access it safely from anywhere using the internet [2].

2.3 Namita JAgtap, Priyanka Joshi and Aditya Kamble, "A review on Budget Estimator Android Application", April 2019, IEEE

This project includes a budget estimator system that tracks geographical locations. It notifies users of nearby stores

and offers location-based notifications using Google services. The app enhances security with login authentication via OTP, building user trust [3].

2.4 Hrithik Gupta, Anant Prakash Singh, Navneet Kumar and Ms.J.Angelin Blessy, "Expense Tracker: A Smart Approach to Track Everyday Expense" ,Dec 25 2020,IEEE

This application helps users control and manage their savings and expenses on a daily, monthly, or annual basis. It offers multiple language options and focuses on daily tracking based on user preferences [4].

2.5 Dr.V.Geetha, G.Nikhitha, H.Sri Lasya and Dr.C.K.Gomathy, "Expenditure Management System",16 May 2022, IEEE.

This application efficiently manages day-to-day expenses, eliminating the need for pen and paper. Users can track their savings and expenses on a daily and annual basis, and the system notifies recipients of money transfers along with the purpose [5].

III.MEODOLOGY

A. PROBLEM STATEMENT DEFINITION

In the first scenario, Riya is an employee who is struggling to control her expenses. Her spending increases frequently because she finds it difficult to manage unexpected expenses.. As a result she feels annoyed. In the second scenario, college student Maha tries to spend money in a planned way, but she often ends up spending randomly because she lacks something. She could receive She could receive a notification reminding her about important expenses.. Because of this, she feels like she's losing control of her finances.

B.PROPOSED SOLUTION

The proposed solution includes a description of the problem that needs to be solved, the idea that was brainstormed during the planning phase, and what makes this solution different and special, social impact or customer satisfaction based on proposed solution, the business model also known as revenue model and the scalability of the solution are discussed.

Every expense manager and budgeting app currently available asks users to input their spending every day. Then, at the end of the month, the app calculates the total expenses.. This process is time consuming and complex. A Personal Expense Tracker is a software that helps you keep track of your income, savings, and spending. Even someone with no money management skills can benefit from using this app. Money transferred from user's account and received by user's account is tracked and recorded instead of depending on receipt papers. This application keeps track of the money the user is spending. For better construction of financial plan, the application provides an analysis on expenditure in graphical form of representation to the user. This app also alerts the user if they go over their spending limit. It keeps track of the money coming in and going out, making it easy for users to see. Plus, it offers

helpful money management tips. IBM Cloud provides storage space for users, ensuring the app can grow as needed.

IV. REQUIREMENT ANALYSIS

Functional involves the user registration page, the user login details the dashboard,
Non- the dashboard, income and expenses update, alerting user on expense and the transactional made using credit care and debit card.

Table 1 Functional Requirements

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration form should be filled by the user. Details like User Name , Password and Email Id must be filled.
FR-2	User Login	User can now log in using the login credentials username and password.
FR-3	Dashboard	Dashboard consists of credit, debit and check balance buttons . It is the main page. User can return back to this page and make their updates at any time.
FR-4	Income and Expenses Daily Update	User can upload their daily expense information that are spent on books, travel ,food etc.
FR-5	Alert	When the customer's expenses exceeds the limit, then alert will be automatically sent to the user's mail id
FR-6	Credit and Debit	User can make transaction in the saving account and the page has href link which is provided to come back to the dashboard.

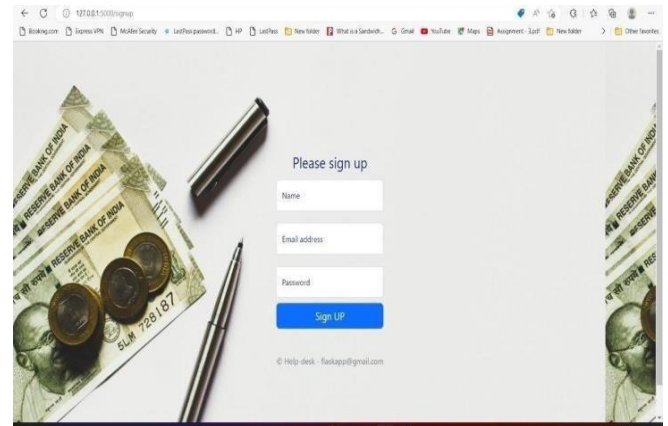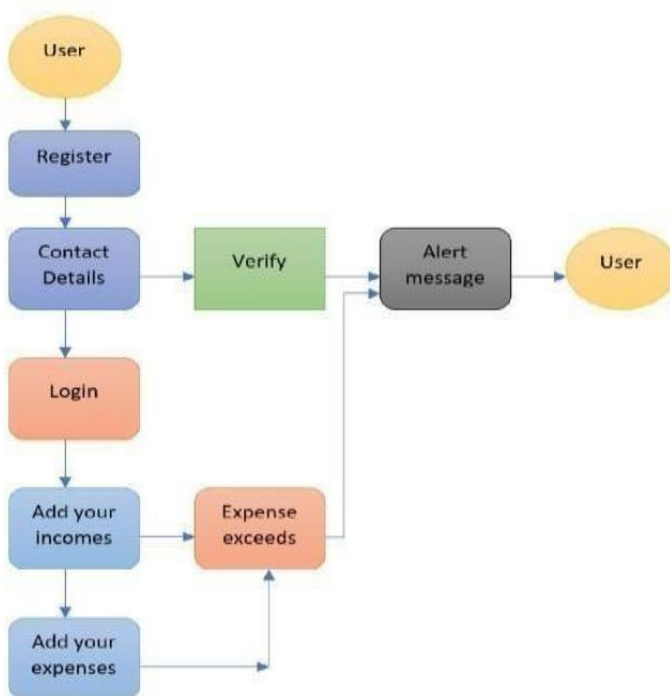## V. PROJECT DESIGN

Dataflow Diagram :

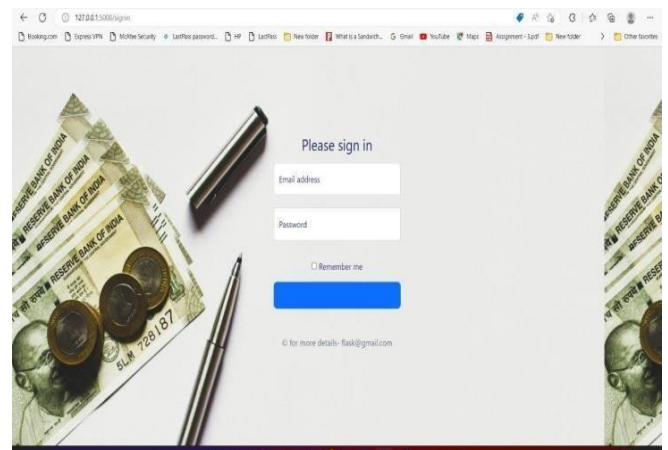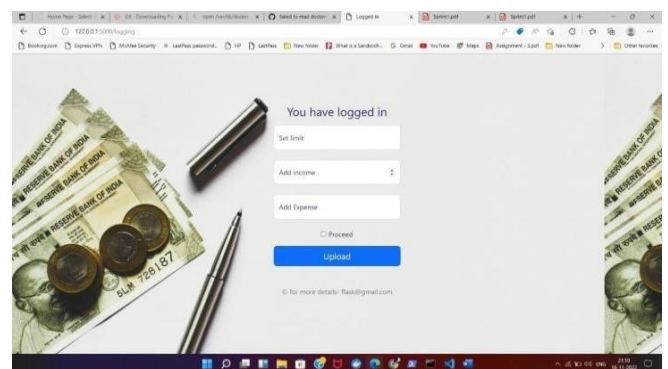Fig.2 Tracker Application Sign In Platform

Fig.3 Set Limit, Expense and Income

VI. TESTING TEST

A. cases

1. Register and login using username, email id and password
2. Add your Expenses
3. Limit exceeds alert message

User Acceptance Testing

Register and login using name, email id and password, add your Limit, Income, Expenses

Fig.1 Tracker Application Sign Up Platform

As a result, this python expense tracker is user-friendly, efficient in money management and it enhances the self - control. However, there are some downsides to consider. This app isn't designed for complex data analysis; it's mainly for tracking everyday expenses in a simple way.

7.CONCLUSION

Thus, the proposed expense tracker helps customers to track their expenses there by saving time and energy and reduces complexity in maintaining a budget. Just a few second, you can save your money in better way.

8.FUTURE SCOPE

To improve the analysis results, we can make the algorithm selection process more efficient and use bigger datasets. Making visualization charts involves many steps and procedures.. As a future work to do done the results to analyses the attribute can be done by reducing the number of procedure steps

9.REFERENCES

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[3] S.Chandini, T.Poojitha , D.Ranjith, V. MohammedAkram, M. S.Vani, "Online- Income and Expense Tracker ", IRJET, Vol:06 Issue: 3, e-ISSN: 2395-0056, p-ISSN: 2395

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