

# Personal Expense Tracker Application

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**Abstract:** Personal Expense Tracker which keeps track on your savings and expense and alerts the user if the limit exceeds. It is a type of a digital record that help you to keep on track on all of our money similar transition and also provides all financial activities report. In today's ever busy and luxurious life , people want to more money such that they rush and rush and at one point the lack behind. Expense tracker is an excellent system which allows user to manage and track expenses efficiently.. Daily based expense tracking guides us saving more money. This 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 parts of world. Every phases 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 . Managing day to day life finances is a vital part of a human's life. The wiser we use it the greater we gain profit. 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 user , enrolling newly to application using email id for verification purpose. User will be able to analyse the 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 user name and password into the application. User enters the saving amount initially , followed by setting up the expense limit . Then user adds up expenses on daily basis or as per his convenience . The application can predict users income and expenditure using data mining . Systematic Budgeting and Tracking expense is a risky and crucial task in the case of managing the expenditure of organizations. Expense Tracker application makes work easier in case of organizations. It includes many advantages and most helpful for the organization stakeholders for process of expenses. Expenses are more efficiently handled by organization by using this application. Expense application will help you in controlling unwanted expenses. This expense tracking applications has various advantages and benefits and makes the organization to function smoother and faster.

The purpose of this project is to keep careful track of their expenses to make 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 seconds. Because money matters and hence for wiser expense 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 application is an expense tracker that helps users to keep an eye on their expense, and one more feature of this application is cutting down unrequired expenses, which in turn provides a more responsible functioned life styles [1].

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

This Tracker application system intelligently does online tracking resulting in clear plan, tracking budget issues at home where people accessing the system can safely access anytime and anywhere by using internet [2].

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

The project reflects budget estimator system including geographical location tracking. With respect to user location , it checks for nearby stores and offer notification within user current location using google services. On basis of security this application implements login authentication by sending OTP to user's device, by doing this it boost up trust and confidence from user [3] .

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

An expenditure Tracker is an application used by most of the person on the note of controlling and managing his/her savings and expense ratio on day today or monthly or annual basis and also keeps track on spending money . The author has created a userfriendly application by providing multiple language options. The ultimate feature is to track on daily basis. User can use it as per his preferred category [4].

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

The author of this application says that this application works efficiently and effortlessly on day to day basis. The

application makes to eliminate the pen and paper usage since the system maintains information without losing data. By using this app any person can own and govern and administer their saving and expense money from day and annual tracking basis, the person whom to which we transferred money also notified about the money transfer and purpose of transfer [5].

### III. PROBLEM STATEMENT DEFINITION

In the first case, Riya is an employee who is trying to manage her expenses but her expenditure raises too often because she finds it tough to manage her unexpected expenses. As a result she feels annoyed. In the second case, A college student Maha tries to spend money in a prioritized manner but her expenditure was always done on random basis because she didn't have a notification that could alert her on prioritized expense. As a result she feels off the track.

### IV. PROPOSED SOLUTION

The Proposed solution includes the problem statement on which the solution has to be worked, the idea description obtained from ideation phase, the novelty and uniqueness of the proposed solution, 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.

All the expense manager and budgeting applications that are available requires user to enter their expenditure date on daily basis and total estimations are generated at the end of the month. This process is time consuming and complex. Personal Expense Tracker is a software application which could track your income or savings and expenditure. A user with zero money management skills could also be beneficiary from this application. 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. The user is also notified in case of exceeding the expense limit. This application tracks your money inflow and outflow, organizes and sets it easy for the user to access. It also provides excellent money management tips and guidelines. On basis on Scalability IBM Cloud allocates storage for users.

### V. REQUIREMENT ANALYSIS

The requirement is classified into functional and non-functional requirements. Functional involves the user registration page, the user login details, the dashboard, income and expenses update, alerting user on expense and the transactional made using credit card and debit card. Non-functional requirements includes usability, security of application and user account credentials, reliability, performance, availability, scalability.

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.

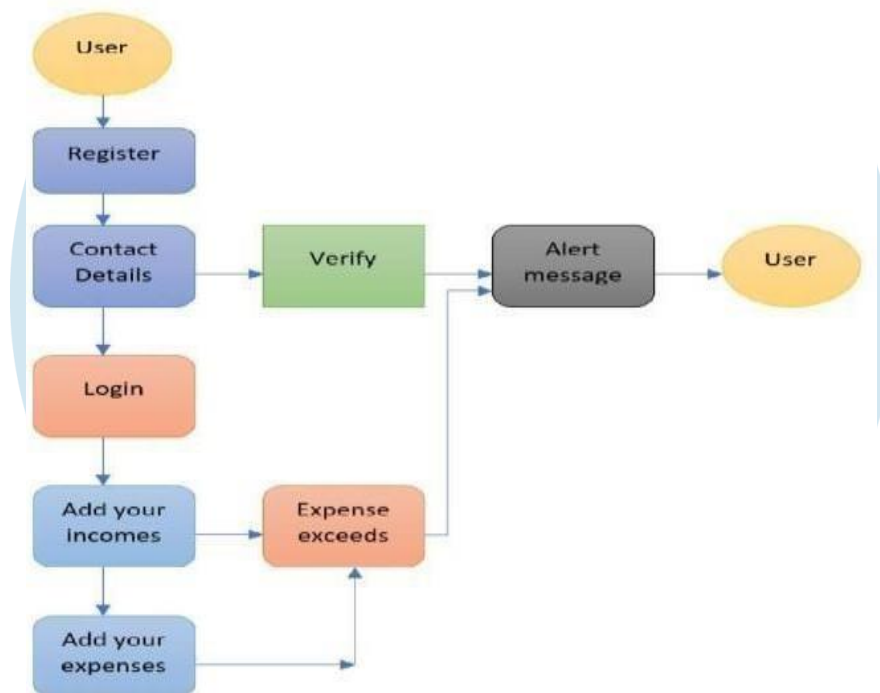
Table 2 Non Functional Requirements

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	It is an user friendly application. Makes the process simpler for user.
NFR-2	Security	System has security properties and features in application.
NFR-3	Reliability	The system is reliable in all features and accessible at any time.
NFR-4	Performance	The system process data and performs update every second. Takes a bit time when processing large data.
NFR-5	Availability	The system is available anytime and anywhere. workable 24/7 for all 365 days in a year.
NFR-6	Scalability	The application includes scalability and storage of information through IBM cloud storage.

## VI. PROJECT DESIGN

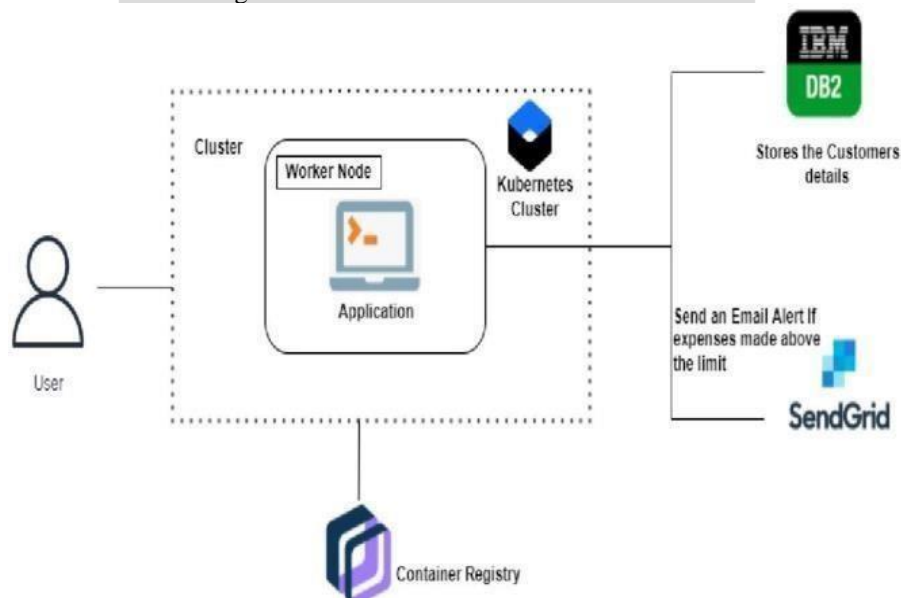
### Dataflow Diagram

Figure 1 Architecture Diagram



### Solution And Technical Architecture

Figure 2 Solution And Technical Architecture



## VII. CODING AND SOLUTIONING

### Dashboard

The dashboard is the home page of our application. It consists of about page, Sign in/Login page and Sign up/Register page

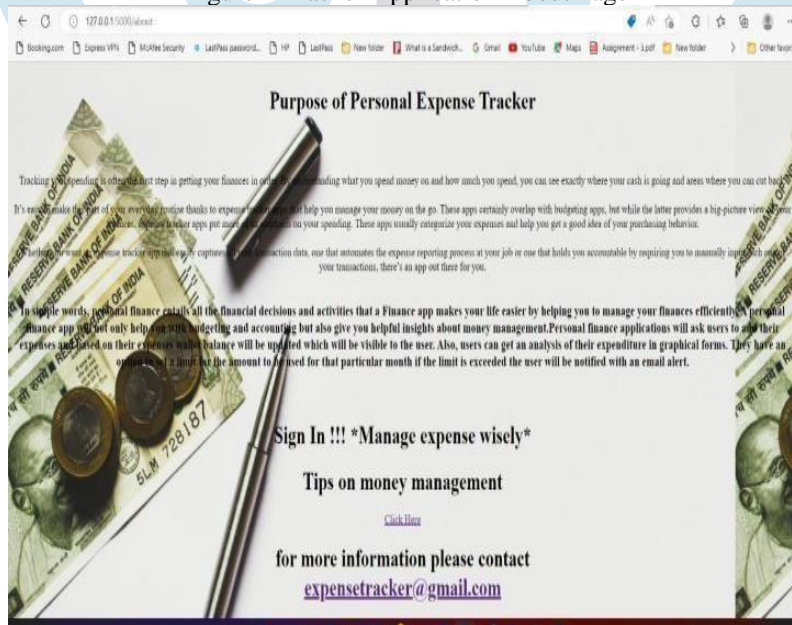
Figure 3 Tracker Application DashBoard



### About Page

The About page provides insights and tips about money management. It also describes the purpose of using this personal expense tracker application.

Figure 4 Tracker Application About Page



## VIII. TESTING

### Test 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



Figure 5 Tracker Application Sign Up Platform

Please sign up

Name

Email address

Password

© Help-desk - flaskapp@gmail.com

Figure 6 Tracker Application Sign In Platform

Please sign in

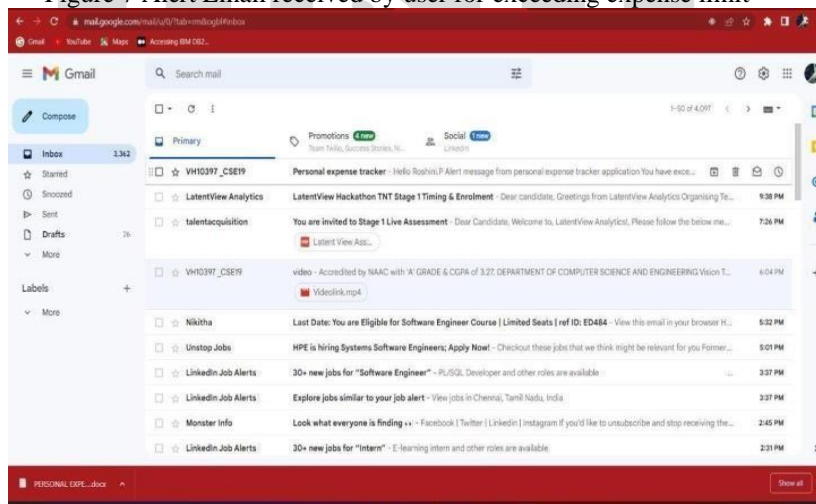
Email address

Password

☐ Remember me

© For more details:- flask@gmail.com

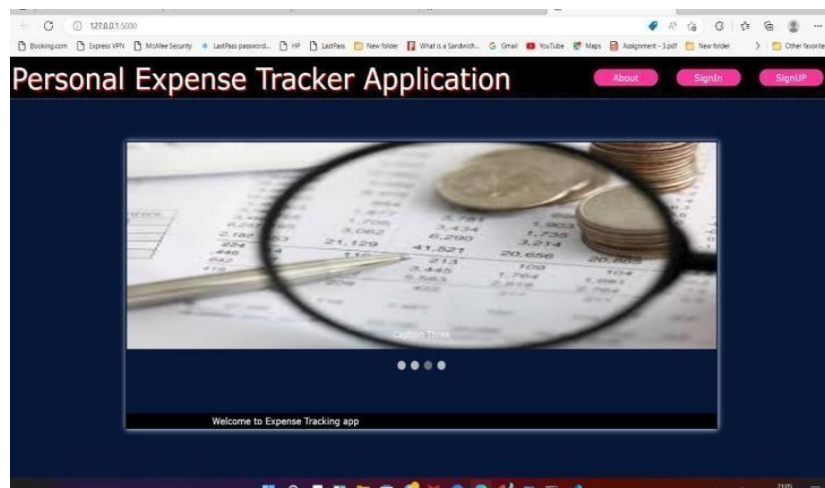
Figure 7 Alert Email received by user for exceeding expense limit



## IX. OUPUT & RESULTS

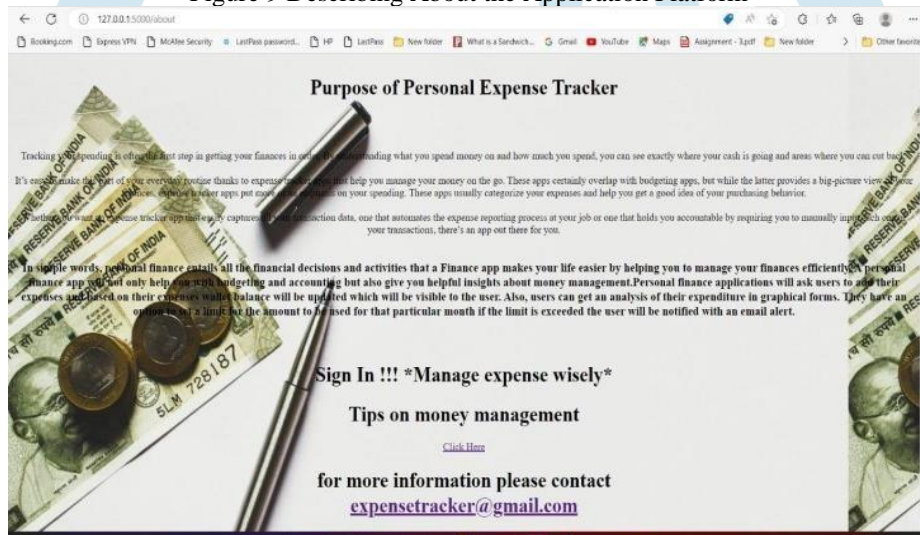
### Dashboard:

Figure 8 Dashboard Platform



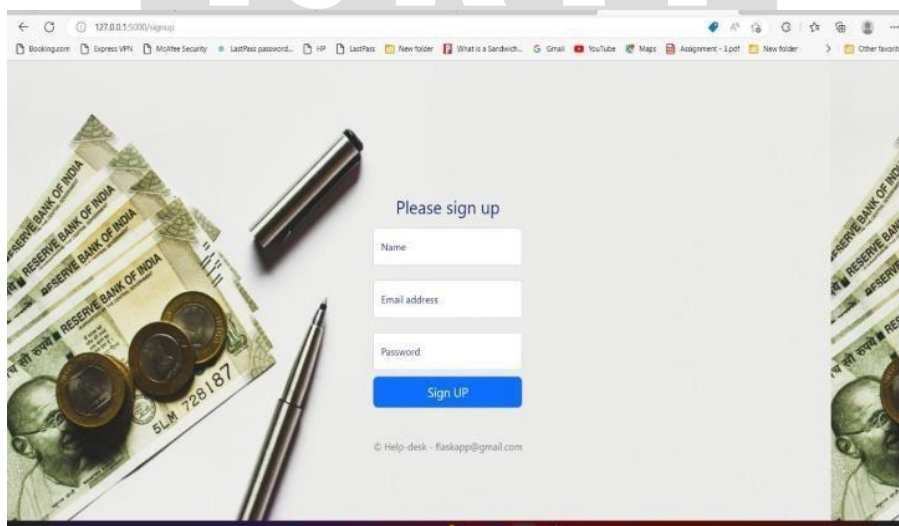
### About Page:

Figure 9 Describing About the Application Platform



### Registration Page:

Figure 10 Tracker Application User Registration Platform



**Login Page:**

Figure 11 User Login Platform

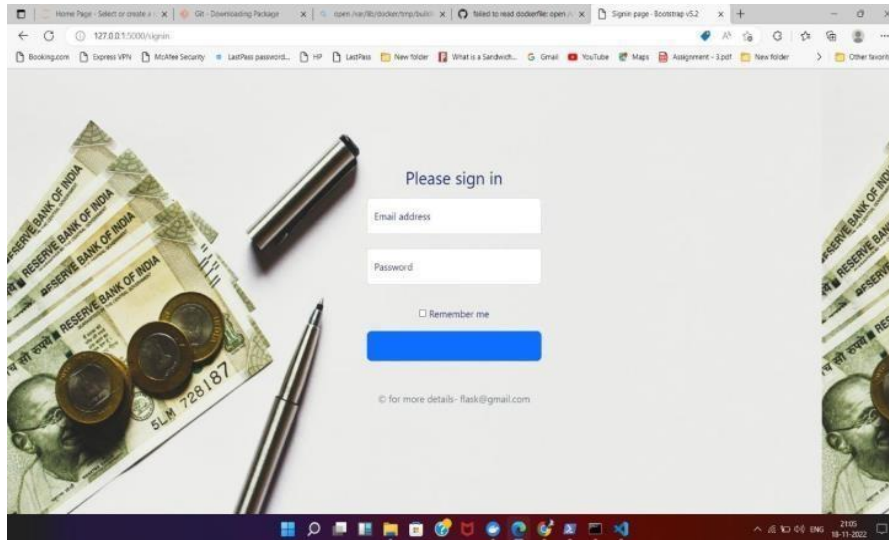
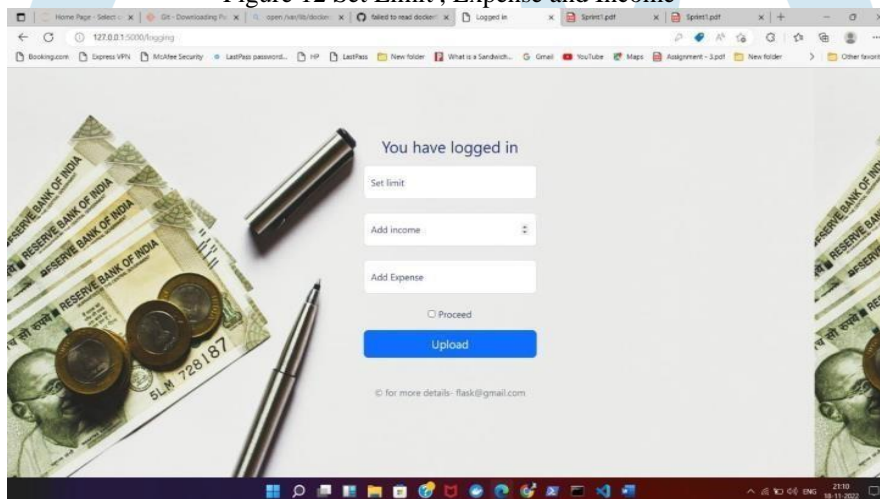
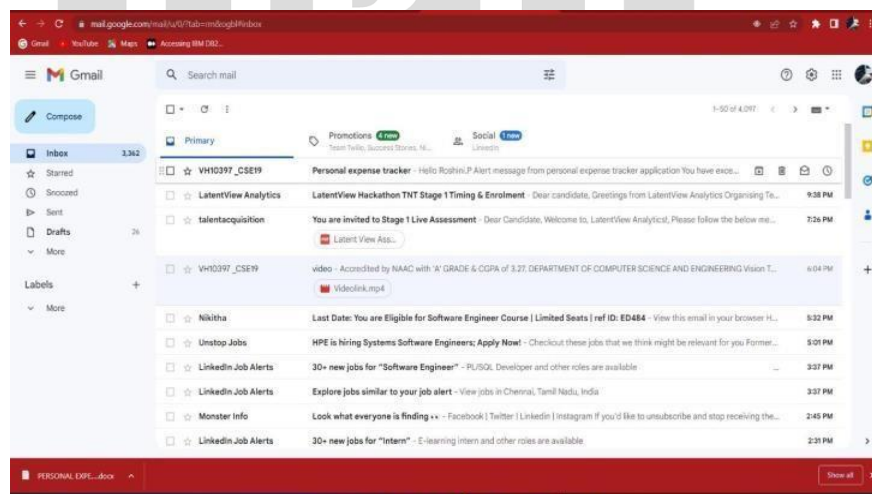
**Set Your Limit, Add Your Income, Add Your Expenses:**

Figure 12 Set Limit , Expense and Income

**Alert Message:**

As a result , this personal expense tracker is user-friendly , efficient in money management and it enhances the self control . Yet there are certain disadvantages to be considered. It is not used for complex date analysis and only used for simple daily expenses.

**X. CONCLUSION**

Thus, the proposed personal 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 .

## XI. FUTURE SCOPE

The results of analysis can be improved by optimizing the algorithm selection procedure and by using large inventory datasets. Creating visualization charts takes numerous steps and procedures. As a future work to do done the results to analyse the attribute can be done by reducing the number of procedure steps

## XII. APPENDIX

Project Demonstration Link <https://www.youtube.com/watch?v=CxGoZqVud2k>

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