Expense Tracker : A Smart Approach to Track Everyday Expense

Hrithik Gupta, Anant Prakash Singh, Navneet Kumar and
J. Angelin Blessy

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Hrithik Gupta
school of computer science and engineering(Galgotias University)
Greater noida ,utter predesh,India
hrithik_gupta1.scsebtech@galgotiasuni
versity.edu.in

Anant Prakash Singh
school of computer science and engineering(Galgotias University)
Greater noida ,uttar predesh,India
anantprakash3987@gmail.com

Navneet Kumar
school of computer science and engineering(Galgotias University)
Greater noida ,uttar predesh,India
nk1172947@gma il.com

Ms.J.Angelin Blessy
school of computer science and engineering(Galgotias University)
Greater noida ,utter predesh,India
j.angelin@galgotiasuniversity.edu.in

Abstract— **Expense Tracker is a day-to-day expense management system designed to easily and efficiently track the daily expenses of unpaid and unpaid staff through a computerized system that eliminates the need for manual paper tasks that systematically maintains records and easily accesses data stored by the user.**

We have tried to design the window application in such a way that the user does not have to bother using this application without much effort. End users with window running devices can use this software. The language databases we use to develop this system are Java (Apache Netbins 11.3) and MySQL Workbench 8.0 CE. This application is a GUI (Graphics User Interface) based application. If you are a window user, you can download the application and work accordingly. This system is used by any person to control his income-expenditure from daily to annual basics. And to keep an eye on their spending. This app is very easy to use and mutli-language. The main feature of this app is that you can track by day and category. You can use it according to your category.

Keywords: literature review, problem formulation, equipment used for implementation, features, features of the proposed system, architectural design for utility method, details of project module, implementation plan and reference.

I. INTRODUCTION

Since the beginning of human civilization, people have exchanged their destiny for one another to buy or sell goods. Since then, it has become an important and irreplaceable part of our daily lives. Most of us have a fixed income and we get it on time (i.e., daily, monthly, annual, etc.). In addition, everyone follows a strict budget of spending. Generally, the budget is assembled according to category. Categories vary, for example, food, entertainment, transportation, education, health, clothing, and so on. However, spending is limited to budget revenue. For this reason, we need to keep track of our expenses so that they do not exceed our budget. In the old days, people would track their expenses manually, which meant that using a penand paper system would be very laborious and time consuming. These days the availability of electronic devices like smartphones and computers has made our lives much easier and faster. We can use computers to track your daily expenses using the available online and offline software. There are some apps that can track daily expenses [2] - [5]. These apps use a manual input system from the keyboard, which is laborious and time consuming. To meet the challenge of avoiding manual input, we propose the best way to do the same things in an automated and efficient way that takes less time. Under the proposed approach, users can spend, fill and monitor data.

II. COMPARATIVE STUDY

Tracking daily expenses is not so innovative. Many traditional and technical approaches have been invented to track our expenses and budget with its functionality. Decades ago and today we write our expenses in the register to calculate profit or savings. Not only this, many desktop and mobile applications have been developed for this purpose. Quicken and Microsoft Money were the first desktop applications developed decades ago, but little known to consumers. Personal capital and the Dollar Bird app are used to visualize spending on maps or graphs with a calendar system. QuickBooks applications for small business holder to wrap up their entire business. The latest applications embedded with YNAB and Penny AI and applicable for automatic import. However, mint is widely used and trusted.

Explaining the latest apps built in this category, YNAB is an expense tracker that automatically tracks our expenses through our bank account or credit card. We can also define future costs
Do not go out of bind. The app is mobile friendly and has been around since 2013. This app is embedded with AI to define and manage our daily expenses.
This app does not provide any detailed information about external costs, but our window application receives that information via text.
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III. PROPOSED ARCHITECTURE

We have developed the necessary system to work without internet. We need a database, desktop, application and user to use this system.

System design

System design is the process of defining architecture, modules, interfaces, and data for a system to meet specific needs. System design can be seen as an application of systems theory to product development.

DatabaseSchema:

Figure 1 : Database Schema

There are two tables in our application database called Category and Cost. The tables in the diagram above contain all the variables defined in the table for the database.

Data Dictionary

A data dictionary, also known as a metadata repository, is a centralized repository of information about data, meaning, relation to other data, source, usage, and format.

| S.N	Entity	Attribute	Data type	Constraints
1	spendings	eid	INT	Primary
		category	VARCHAR(50)	
		sdate	DATE	
		amount	INT	
2	categoryinfo	category	VARCHAR(50)	PRIMARY

UML CLASS Diagram: -
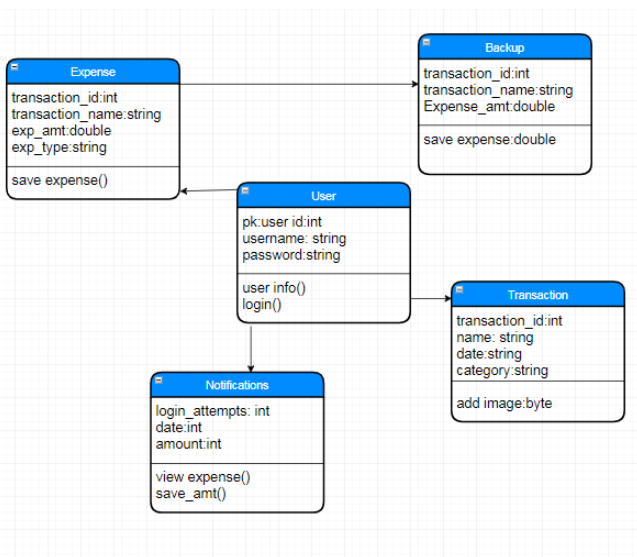
Expense Tracker application have five entities:

expense, user, backup, notification, transaction,

which have their own data members and methods. Above diagram shows the flow of the functionality from entity to entity. Also, types of data members and methods of respective entity are mentioned above.

IV. FLOW OF ARCHITECTURE
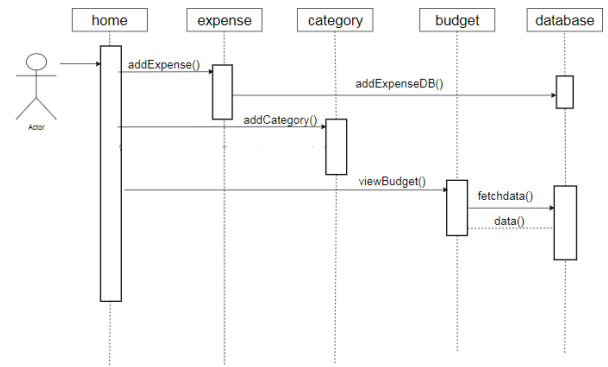
V. FEATURES OF THE APPLICATION

1.Main Window

A Starting page with welcome note appears at the first page and the window where user can add the expense.

2.Add Category

The system shall allow the user to add category as per his/her choice.

3.Category Combo Box

This Combo Box contains all the category added by the user.

4.Remove Button

This Button delete any entry of last 20 days expenses.

5.Add Category Window

This window helps the user to easily interact with the category, where user can add and remove the category as per his choice.

6.Calender

The system shall allow users to add the date to their expenses

7.View Expense Day wise/Category wise Window

This window allows the user to interact with the expense according to day wise as well as category wise.

8.Menu option

This allows user to interact with other pages by just clicking on the menu option.

9.Search button

This allows user to search their expenses according to category as well as date wise by clicking on the search button.

10.Refresh button

By clicking on this button user have to update the category
APPLICATION

VI. MODULES AND IMPLEMENTATION

A. *Implementation Overview*

1) *Process Model Used :-*
The waterfall model is a sequential approach, where each fundamental activity of a process represented as a separate phase, arranged in linear order. In the waterfall model, you must plan and schedule all of the activities before starting working on them (plan- driven process).

Waterfall model is used for the project because all the requirements are clear as this project is not dealing with the clients and hence beforehand planning can be made about how to carry out each phase of development.

2) *Module Description*
A modularization consists of well-defined manageable units with well-defined interfaces among the units.

Desirable property of modular system include

a) Each module is a well-defined sub-system.

b) Single, well – defined purpose of each module.

c) Modules can be separately compiled and stored in a library.

d) Modules can use another module.

e) Modules should be easier to use than to build.

f) Modules should be simpler from outside then from inside.

The project can be decomposed in following modules:

a) **Welcome module**: This module is a starting page of this application.

b) **Main window module**: This module is responsible for input the data and store in the database.

c) **Add amount**: This module is responsible to enable the user to add amount in the database.

d) **Delete expense**: This module is responsible for deleting the previous 20 days expenses.

e) **View Expense**: This module is responsible for viewing all the expenses in detail added to the log by the user earlier.

f) **Add Module**: This module is responsible for editing the pre-defined category.

g) **Categories module**: This module is responsible for various options. In this app users have options of selecting various basic expense categories according to their choice.

h) **Search module:** This module is responsible for adding notes and dates to the expenditure of user.

Report Organization :-

3) *Chapter IV:*
This chapter covers all the programs/codes of all the pages and displaying all the pages.

4) *Chapter V:*
This chapter describes or explains about the progress plan of this project.

5) *Chapter VI:*
Conclusion and future scope of the application are explained as well as references.
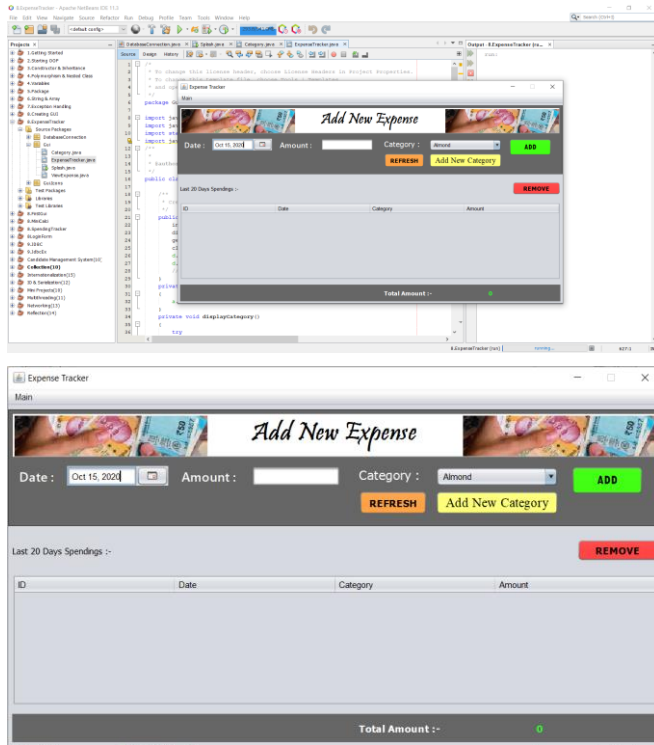
VI. IMPLEMENTATION PROCESS

1)
We created a window in which the user can add there expense as per her choice as it is given a category button there in which user can add there category according to the category he/she wants.
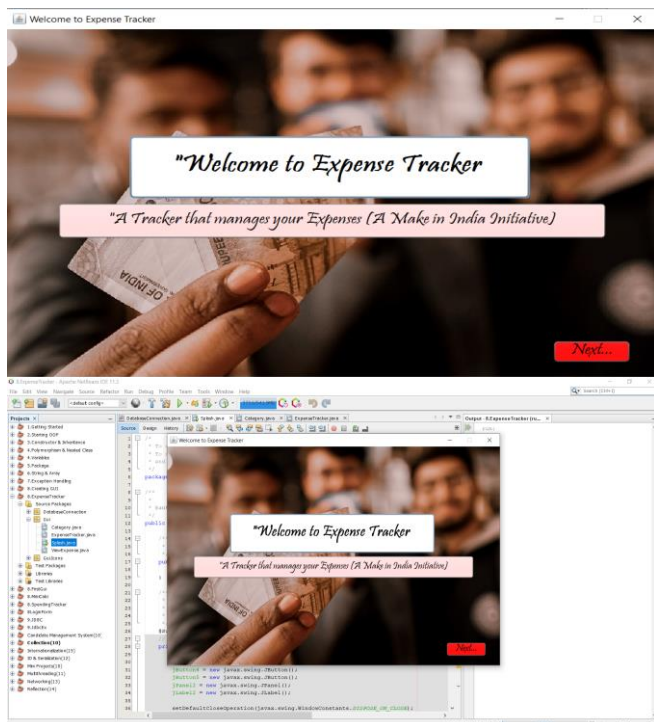User can also delete and update the category according to them.

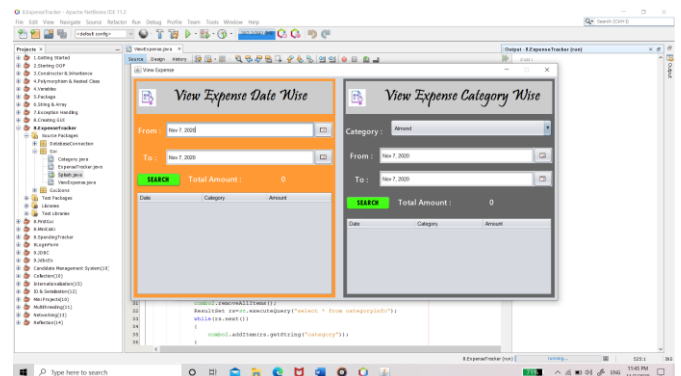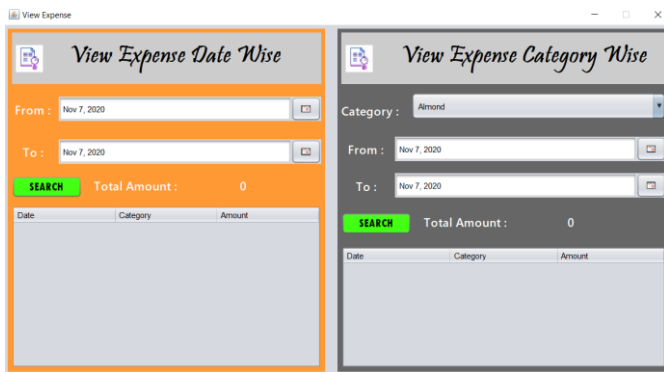User can also delete earlier records as if a user want to delete.

2)

This window is the starting Screen whwn user click on the application user directly reach to this window and after reaching user have to click on the next button to proceed further.

3) In this window, user can add the category according to his/her choice as it is depending on the person using. In this, user can also remove the category.

4). *In this window ,*User can view there expense according to day wise as well as category wise.

So, in this paper here are some images that show the window screen in which we have created various activity that is working differently for the specified purpose. In images there are activities that are main, search activity etc. also there are modules for this application above the implementation part.

VII. CONCLUSION

In this paper, After making this application we assure that this application will help its users to manage the cost of their daily expenditure. It will guide them and aware them about their daily expenses. It will prove to be helpful for the people who are frustrated with their daily budget management, irritated because of amount of expenses and wishes to manage money and to preserve the record of their daily cost which may be useful to change their way of spending money. In short, this application will help its users to overcome the wastage of money.

B. Recommendation

Expense Tracker app is usable by anyone who are willing to manage their expenses and aiming to save for the future investments. This app has no range criteria or any kind of profession or gender are focused so it will used hugely by any other person.

C. Future Scope

In further days, there will be mails and pay mode embedded with the app. Also, backup details will be recorded on database.

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From the figure 9 we can observe that the success rate of the

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