

A

Project Report

on

Expense Tracker

In partial fulfilment of Post Graduate course

in

Master of Science (Computer Applications) – II

(Semester -III)

CSA5312 Computer Applications Project - II

Submitted By

Aditya Sunil Pandit 21573

Department of Computer Science

Fergusson College (Autonomous), Pune-411004

(2022 – 2023)



**Deccan Education Society's
Fergusson College (Autonomous), Pune
Department of Computer Science
(CSA5312) Computer Applications Project-II**

CERTIFICATE

This is to certify that Mr. Aditya Sunil Pandit Roll No. 21573, has satisfactorily completed the project work entitled “Expense Tracker” towards the partial fulfilment of M.Sc. (Computer Applications), Semester III during the academic year 2022-23.

Place: Pune

Date: / /2022

**Mrs. Swati Satpute
Internal Guide**

**Dr. Kavita A. Khobragade
Head, Computer Science Department**

Internal Examiner

External Examiner

Index

Sr. No	Table of Content	Page No
1	Introduction	
	1.1 Existing System	1
	1.2 Need of the System	1
	1.3 Overview of the Project	2
2	Analysis	
	2.1 Feasibility Study	3
	2.1.1 Technical feasibility	3
	2.1.2 Economical Feasibility	3
	2.1.3 Operational feasibility	3
	2.2 Hardware and Software requirements	4
	2.3 Packages and Technologies used	5
3	Design	
	3.1 Database Table designing	6
	3.2 UML Diagrams	8
	3.3 Input / Output Screens	12
4	Testing	
	4.1 Importance of testing	21
	4.2 Types of testing	21
	4.3 Test cases	22
5	Reports	23
6	Drawbacks and limitations	25
7	Conclusion	26
8	Future Enhancement	27
9	Bibliography	28

1. Introduction

1.1 Existing System

In the existing system user maintain a diary to write daily, weekly, and monthly expenses. The user calculates all the expenses manually. In the existing system, we must keep track on daily expenses manually and there can be security issues as there is no authorization done, anyone can read expenses details written in diary or diary may get lost which results into loss of important data.

1.2Need of the System

In the existing system user must calculate manually which is tedious. In the proposed system there is graphical representation of data. Searching a particular record in a physical diary is a tedious task. There is no segregation of categories like food, clothes, medicines etc. All these tasks are taken care of in the developed Expense tracker. In the developed system the data can be stored and retrieved in form of a pdf, excel and csv file whenever the user wants.

1.3 Overview of the project

The Expense Tracker is flexible and provides users an easier and a better way to keep track of expenses. The proposed system consists of following modules and functionalities:

- **Registration/Login:** In this module user can register/login into system.
- **Expense Management:**
 - **Expense:** In this module user can add/edit/delete expense. user can specify different categories of expense like food, cloths, grocery etc. Also, user can add details about expense like description of expense, date of expense.
 - **Expense Summary:** In this module user can view expenses statistics in tabular and pie chart representation in monthly format and can view total expense amount in today, weekly, monthly, and yearly format.
 - **Expense Export:** In this module user can download his expenses details in the form of pdf, xlsx or csv file.
- **Budget Management:**
 - **Budget:** In this module user can add/delete monthly budget. Also, can edit the budget amount set for different categories.
 - **Budget Summary:** In this module user can view budget statistics in bar chart format as per category. Also, can view spend amount and left budget amount on each category.
- **Admin Control:** In this module admin can authenticate user, can add different categories for expenses.

2. Analysis

2.1 Feasibility Study

2.1.1 Technical Feasibility

This Expense tracker is platform independent since it is being coded in Django Framework. HTML, CSS will be used to create webpages. MySQL will be used for storing data and it would be very easy to set up the system in the current environment as the Expense Tracker is web-based it does not require to be installed on every machine. This website can be easily accessed through internet. Therefore, the project is technically feasible.

2.1.2 Economical Feasibility

Expense tracker can be developed using open-source software's. The designed system can be used on the browsers like Google Chrome, Mozilla Firefox etc. So, no cost is charged from the user. Therefore, the project is economically feasible.

2.1.3 Operational Feasibility

The user need not undergo any training since it is designed in user-friendly manner in a systematic approach. Therefore, the project is operationally feasible.

2.2 Hardware and Software requirements

2.2.1 Hardware Requirements

	Development side	Client side
Processor	1.70 GHz	500 MHz
Main memory	4 GB RAM	2 GB RAM
Hard Disk /SSD	256 GB	64 GB

2.2.2 Software Requirements

	Development side	Client side
Operating System	Windows 10	Any Operating System
Framework/Tool	Django	Django
Front-end	HTML, CSS, JavaScript, Bootstrap	NA
Back-end	MySQL	MySQL
Web Browser	Google Chrome	Google Chrome, Mozilla Firefox

2.3 Packages and Technologies Used

The project is build using Python (ver.3.10.0) programming language using VS code. The packages and technologies used in the project are:

Technologies

Django:

It is a high-level python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. Its free and open source.

Packages

csv:

It is python library for developers which is used to generate comma separated value file .

xlwt:

It is python library for developers which is used to generate spreadsheet files compatible with Microsoft Excel versions 95 to 2003.

weasyprint:

It is python library for developers which is used to generate pdf files.

calendar:

Python defines an inbuilt module calendar that handles operations related to the calendar.

User:

Django comes with a user authentication system. It handles user accounts, groups, permissions, and cookie-based user sessions.

datetime:

It is the combination between dates and times. The attributes of this class are similar to both date and separate classes. These attributes include day, month, year, minute, second, microsecond, hour, and time zone info.

messages:

The Django messages framework allows you to temporarily store messages in one request and retrieve them for display in a subsequent request (usually the next one).

3. Design

3.1 Database Table Designing

Table: user

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	auto_increment
password	varchar(128)	NO		NULL	
last_login	datetime(6)	YES		NULL	
is_superuser	tinyint(1)	NO		NULL	
username	varchar(150)	NO	UNI	NULL	
first_name	varchar(150)	NO		NULL	
last_name	varchar(150)	NO		NULL	
email	varchar(254)	NO		NULL	
is_staff	tinyint(1)	NO		NULL	
is_active	tinyint(1)	NO		NULL	
date_joined	datetime(6)	NO		NULL	

Table: expense

Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
amount	double	NO		NULL	
date	date	NO		NULL	
description	longtext	NO		NULL	
category	varchar(255)	NO		NULL	
owner_id	int	NO	MUL	NULL	

Table: category

Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
name	varchar(255)	NO		NULL	
type	varchar(255)	NO		NULL	
owner_id	int	NO	MUL	NULL	

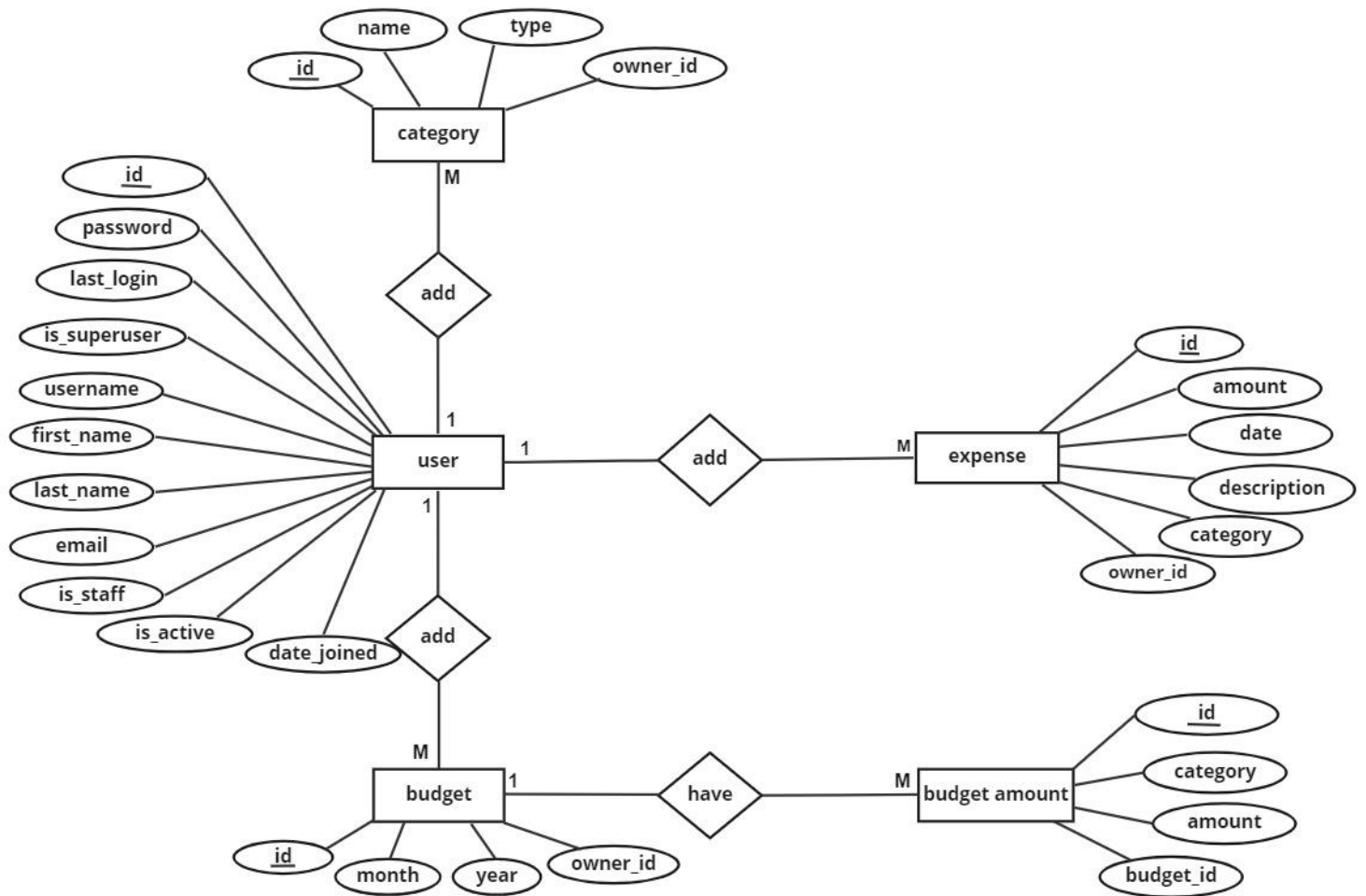
Table: budget

Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
month	varchar(255)	NO		NULL	
owner_id	int	NO	MUL	NULL	
year	int	NO		NULL	

Table: budget_amount

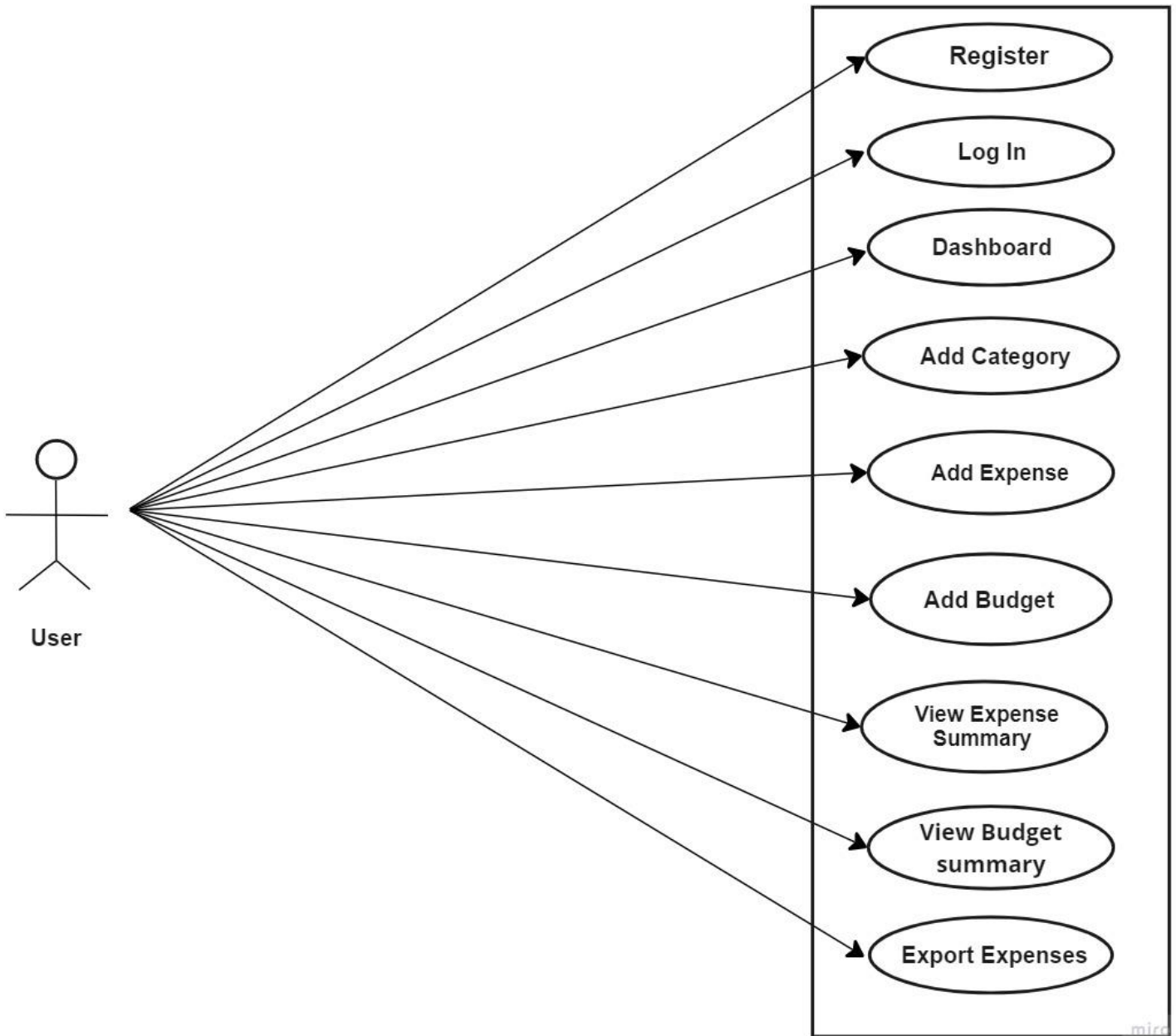
Field	Type	Null	Key	Default	Extra
id	bigint	NO	PRI	NULL	auto_increment
category	varchar(255)	NO		NULL	
amount	double	NO		NULL	
budget_id	bigint	NO	MUL	NULL	

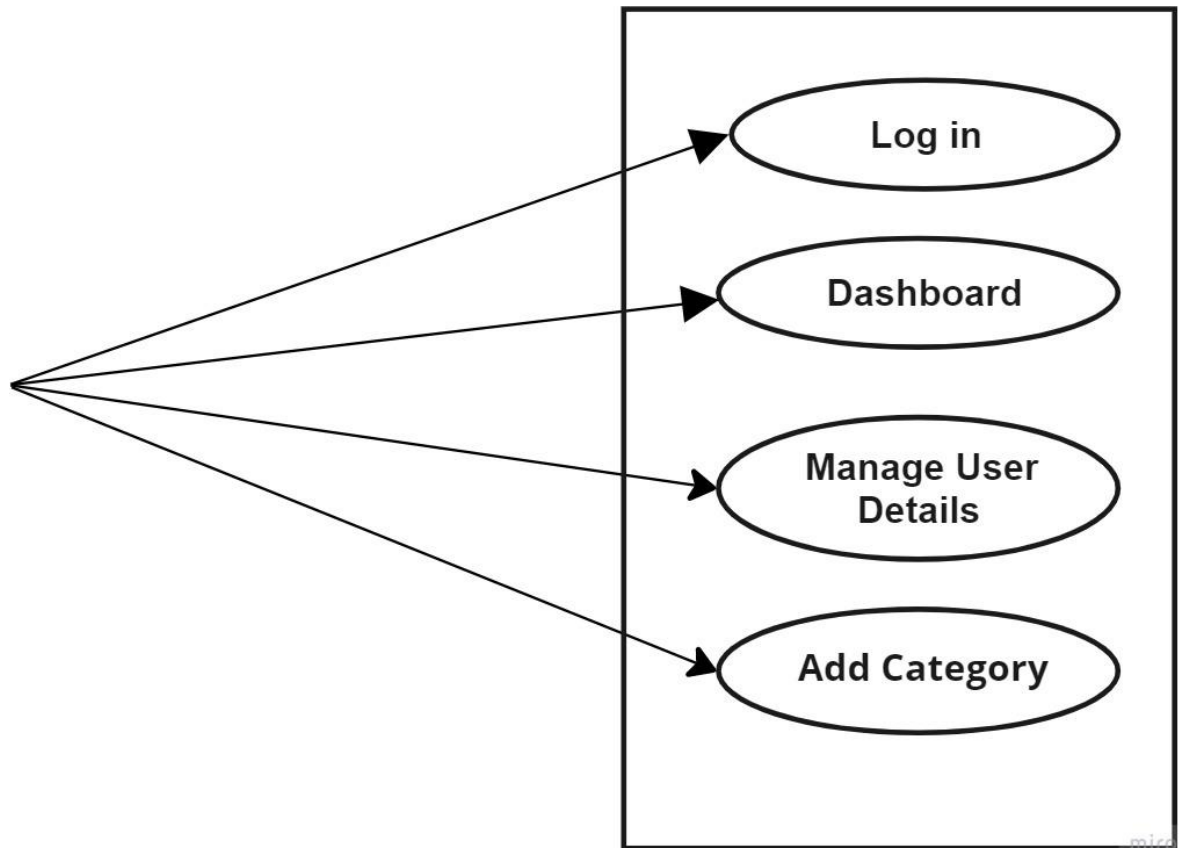
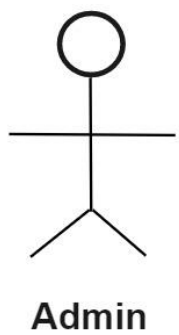
Entity Relationship Diagram



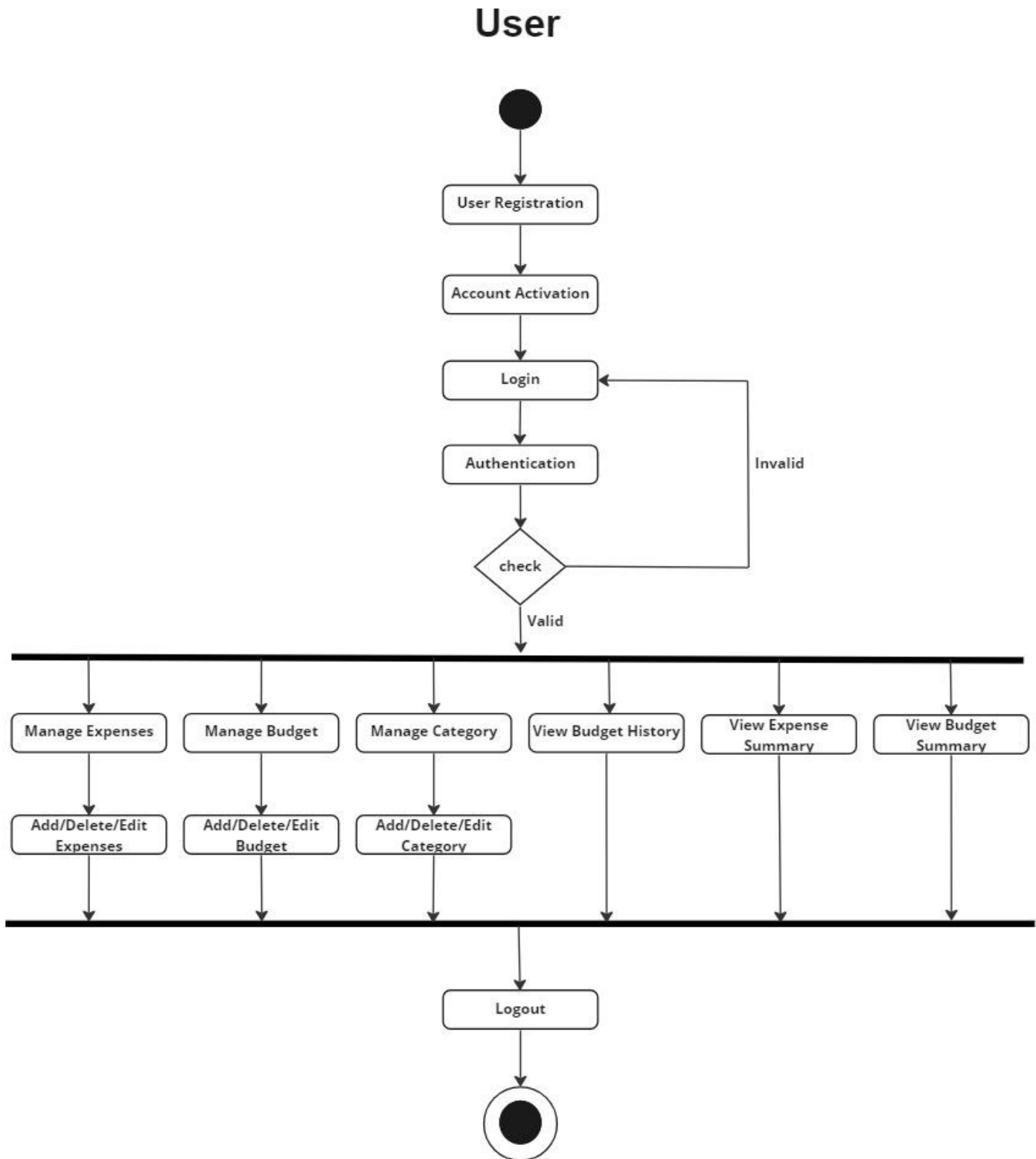
3.2 UML Diagrams

3.2.1 Use Case Diagram

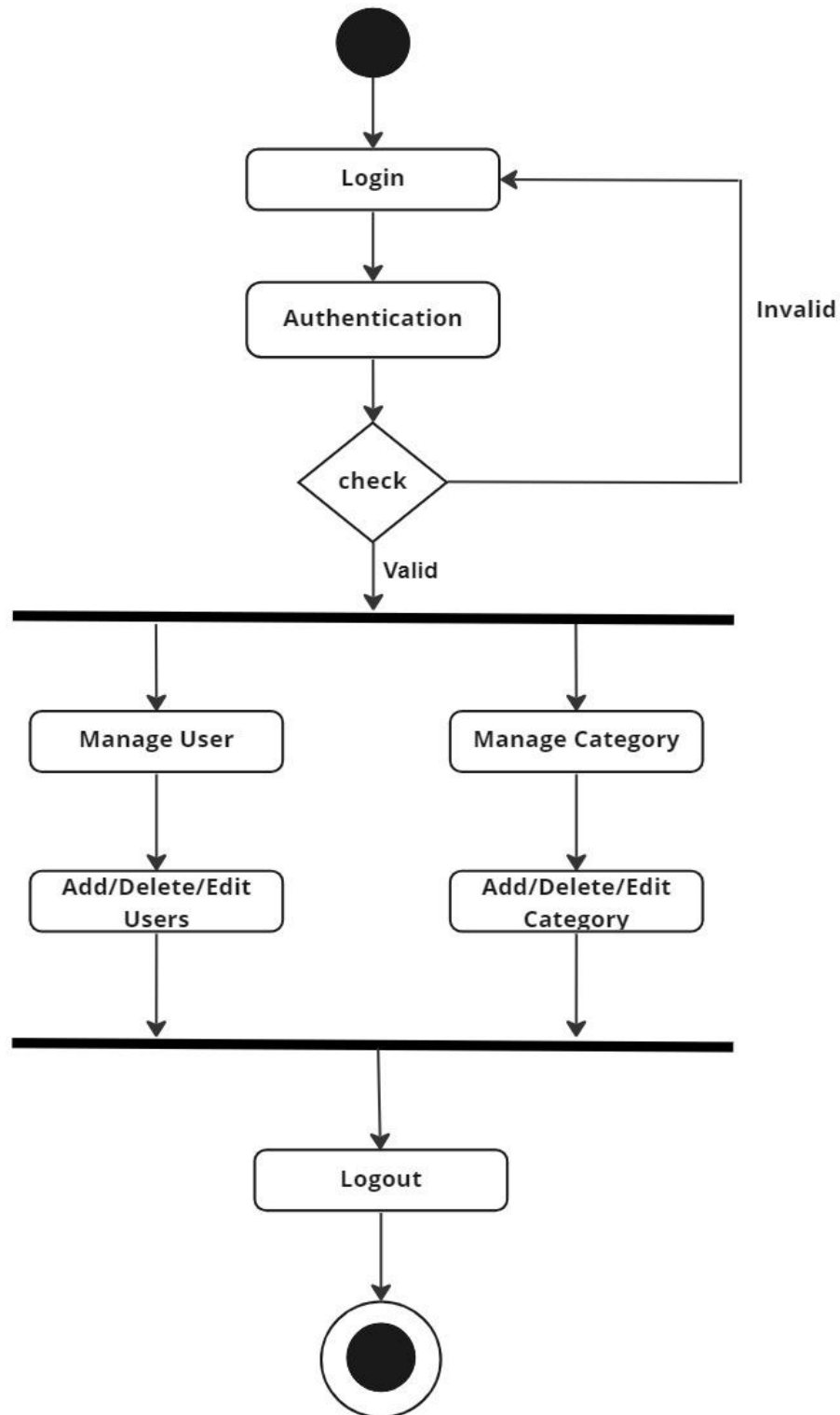




3.2.2 Activity Diagram

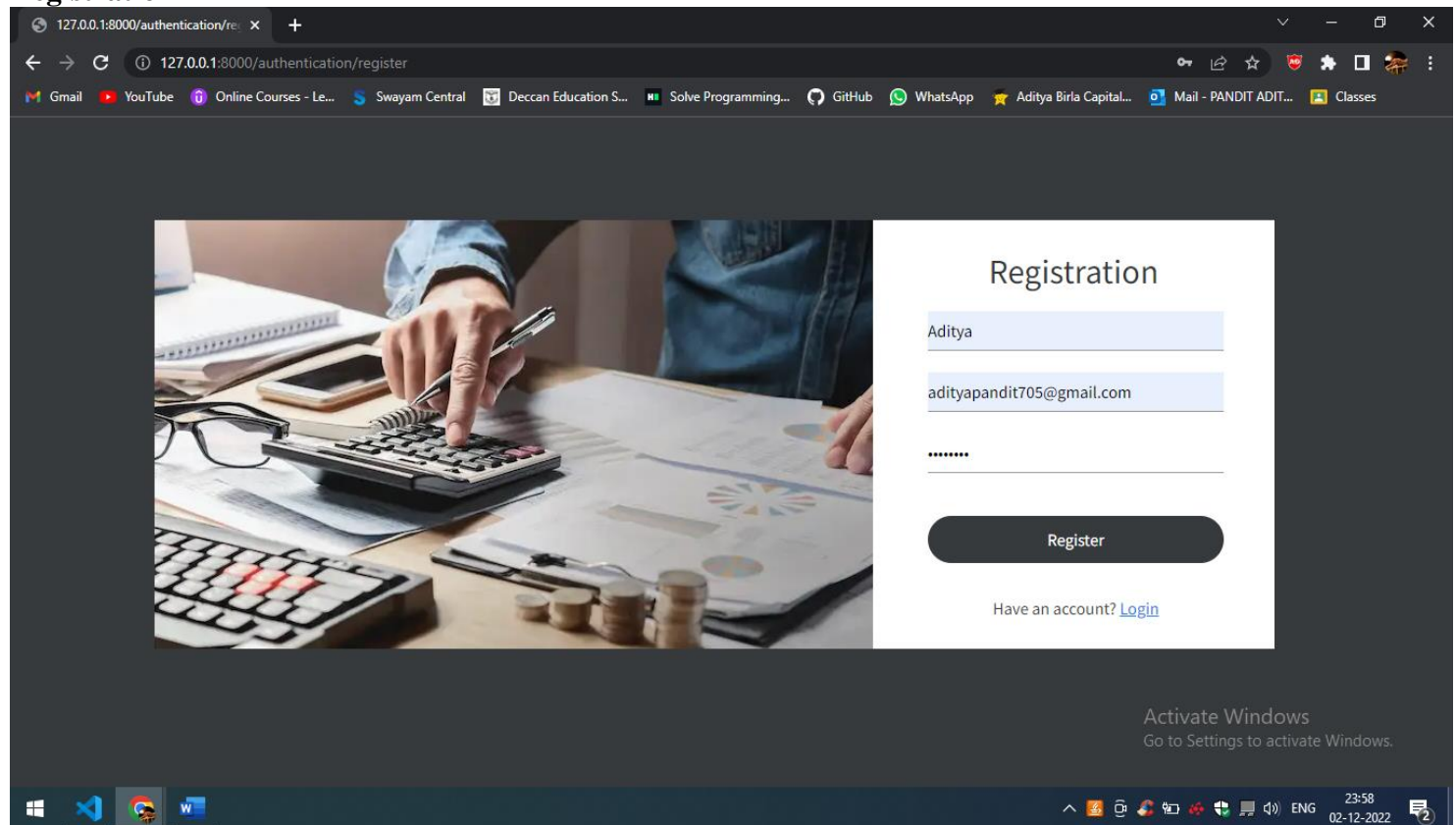


Admin

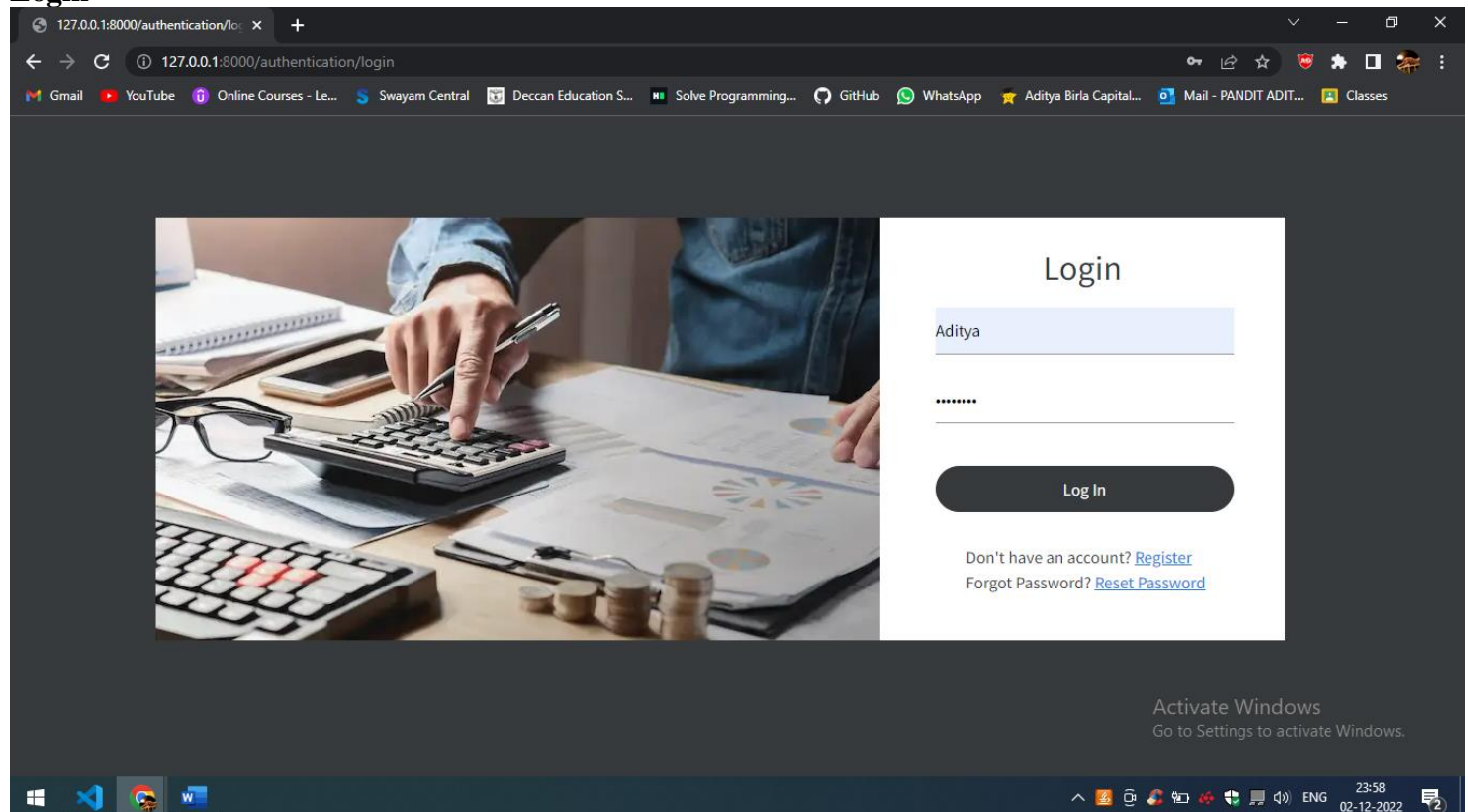


3.3 Input/Output Screens

Registration



Login




Reset Password

127.0.0.1:8000/authentication/re: x +

127.0.0.1:8000/authentication/request-reset-link

Gmail YouTube Online Courses - Le... Swayam Central Deccan Education S... Solve Programming... GitHub WhatsApp Aditya Birla Capital... Mail - PANDIT ADIT... Classes



Reset password link

Email

Have an account? [Login](#)
Don't have an account? [Register](#)

Activate Windows
Go to Settings to activate Windows.


00:08
03-12-2022

Set new password

Password Reset Instructions - adi: x 127.0.0.1:8000/authentication/set: x +

127.0.0.1:8000/authentication/set-new-password/MTI/bftxf-134c059d7969abaa95fe942d0120d6a8

Gmail YouTube Online Courses - Le... Swayam Central Deccan Education S... Solve Programming... GitHub WhatsApp Aditya Birla Capital... Mail - PANDIT ADIT... Classes



Set new password

Password

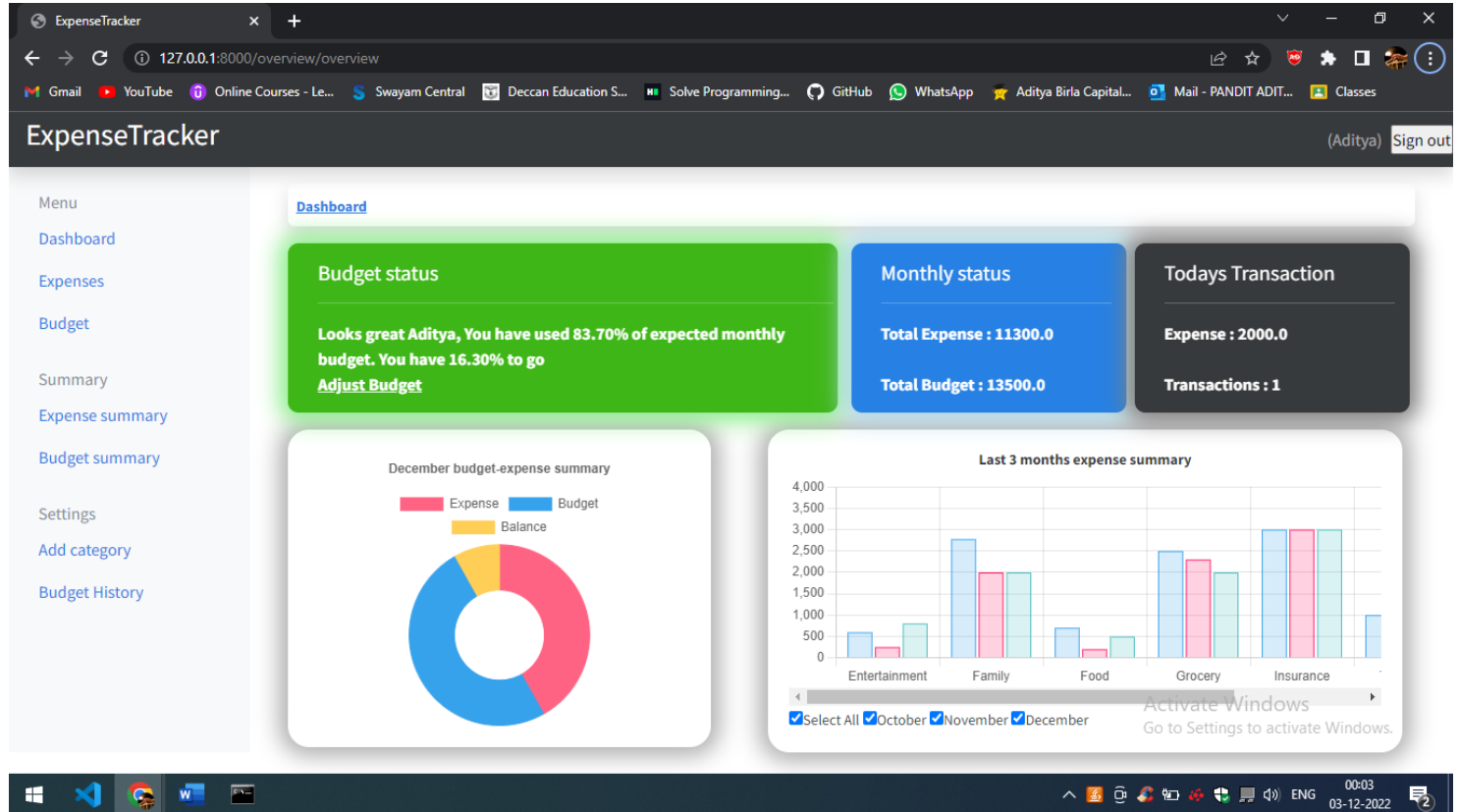
Confirm Password

Have an account? [Login](#)
Don't have an account? [Register](#)

Activate Windows
Go to Settings to activate Windows.

00:10
03-12-2022

Dashboard



Add Expense

ExpenseTracker (Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
- Expense summary
- Budget summary
- Settings
- Add category
- Budget History

Add Expenses

Amount

200

Description

KFC

Category

Food

Date of Expense

03-12-2022

Submit

Activate Windows
Go to Settings to activate Windows.

00:13
03-12-2022

Expense added successfully

ExpenseTracker Expense saved successfully (Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
- Expense summary
- Budget summary
- Settings
- Add category
- Budget History

Expenses / My Expenses

Add

Export PDF Export Excel Export CSV

Search

Amount Spend	Catgory	Description	Date	Operations
2000.0	Family	Mom's birthday	2022-12-03	Edit
200.0	Food	KFC	2022-12-03	Edit
3000.0	Traveling	Vaishno devi	2022-12-02	Edit
800.0	Entertainment	Swar Zankar	2022-12-02	Edit
2000.0	Grocery	Grocery	2022-12-01	Edit
500.0	Food	Sub-way	2022-12-01	Edit
3000.0	Insurance	LIC	2022-12-01	Edit
2000.0	Family	Birthday Party	2022-11-25	Edit

Activate Windows
Go to Settings to activate Windows.

Edit Expenses

ExpenseTracker (Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
- Expense summary
- Budget summary
- Settings
- Add category
- Budget History

Expenses / Edit Expenses

Edit Expenses

Amount
2000.0

Description
Mom's birthday

Category
Family

Date of Expense
03-12-2022

Submit

Activate Windows
Go to Settings to activate Windows.

Expense updated successfully

Menu

Dashboard

Expenses

Budget

Summary

Expense summary

Budget summary

Settings

Add category

Budget History

Expenses / My Expenses

Add

Export PDFExport ExcelExport CSV

Search

Amount Spend	Catgory	Description	Date	Operations
2500.0	Family	Mom's birthday	2022-12-03	Edit
200.0	Food	KFC	2022-12-03	Edit
3000.0	Traveling	Vaishno devi	2022-12-02	Edit
800.0	Entertainment	Swar Zankar	2022-12-02	Edit
2000.0	Grocery	Grocery	2022-12-01	Edit
500.0	Food	Sub-way	2022-12-01	Edit
3000.0	Insurance	LIC	2022-12-01	Edit
2000.0	Family	Birthday Party	2022-11-25	Edit

Activate Windows
Go to Settings to activate Windows.

ExpenseTracker

Expense Updated successfully

(Aditya) Sign out

Windows taskbar

Add Budget

Menu

Dashboard

Expenses

Budget

Summary

Expense summary

Budget summary

Settings

Add category

Budget History

Budget / Add Budget

* If you don't want to consider a category for budget amount, please put 0

December Budget

Budget Amount

Food1000Traveling3000

Grocery2500Insurance3000

Entertainment1000Family3000

Submit

Activate Windows
Go to Settings to activate Windows.

ExpenseTracker

(Aditya) Sign out

Windows taskbar

Budget added successfully

ExpenseTracker Budget saved successfully (Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
- Expense summary
- Budget summary
- Settings
- Add category
- Budget History

Budget / My Budget

Delete

December Budget

Sr.No.	Category	Budget Amount	Edit Budget Amount
1	Food	1000.0	Edit
2	Traveling	3000.0	Edit
3	Grocery	2500.0	Edit
4	Insurance	3000.0	Edit
5	Entertainment	1000.0	Edit
6	Family	3000.0	Edit

Activate Windows
Go to Settings to activate Windows.

Edit Budget Amount

ExpenseTracker (Aditya) Sign out

Budget / Edit Budget Amount

Edit Food Budget Amount

Food

Submit

Activate Windows
Go to Settings to activate Windows.

Budget amount updated successfully

ExpenseTracker Budget Amount Updated successfully (Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
- Expense summary
- Budget summary
- Settings
- Add category
- Budget History

Budget / My Budget Delete

December Budget

Sr.No.	Category	Budget Amount	Edit Budget Amount
1	Food	1000.0	Edit
2	Traveling	3000.0	Edit
3	Grocery	2500.0	Edit
4	Insurance	3000.0	Edit
5	Entertainment	1000.0	Edit
6	Family	3000.0	Edit

Activate Windows
Go to Settings to activate Windows.

Add Category

ExpenseTracker (Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
- Expense summary
- Budget summary
- Settings
- Add category
- Budget History

Category / Add Category

Add Category

Category

Submit

Activate Windows
Go to Settings to activate Windows.

Category added successfully

ExpenseTracker

Category saved successfully



(Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
 - Expense summary
 - Budget summary
- Settings
 - Add category
 - Budget History

Category / My Categories

Add

Category	Operations
Family	Edit 
Medical	Edit 

Activate Windows
Go to Settings to activate Windows.

Budget History

ExpenseTracker

(Aditya) Sign out

Menu

- Dashboard
- Expenses
- Budget
- Summary
 - Expense summary
 - Budget summary
- Settings
 - Add category
 - Budget History

Budget History

Budget History

Select Month
November

Select Year
2022

Submit

Activate Windows
Go to Settings to activate Windows.

Viewing budget history

ExpenseTracker

(Aditya) Sign out

Menu

[Dashboard](#)

[Expenses](#)

[Budget](#)

[Summary](#)

[Expense summary](#)

[Budget summary](#)

[Settings](#)

[Add category](#)

[Budget History](#)

Budget History / Monthly History

November, 2022 budget history

Sr.No.	Category	Budget Amount
1	Food	1000.0
2	Traveling	5000.0
3	Grocery	2500.0
4	Insurance	3000.0
5	Entertainment	1000.0
6	Family	3000.0

Activate Windows

Go to Settings to activate Windows.

Windows Start Taskbar

00:59
03-12-2022

4. Testing

4.1 Importance of testing

In projects, testing is a way to make sure that the requirements under a project are fulfilled accurately and it is risk free from manual errors, system environment issues, coding issues, deadlock, crashes, performance, security etc. Testing also helps to make our product better by knowing and understanding the risks associated with it. Risks can be related to User experience, Usability, Functionality etc. Some of the factors that state the importance of testing:

- It produces a defect-free product/software.
- It ensures that the customer/end-user is satisfied. It ensures all the requirements are met.
- It ensures the proper working of all the functionalities of an application/software/product.
- It makes sure that the system is reliable.
- It ensures that the software/product works as expected.
- It ensures security and safety. It ensures a good performance of the system.
- It improves the quality of the product. The risks associated with the product/software are reduced and in turn the loss is also reduced.

4.2 Types of testing

Unit Testing

Unit testing operates on individual modules in which the smallest testable parts are run independently and perform the required test of the project. It was carried to validate that each unit of the software code performs as expected. Unit tests isolate a section of code and verify its corrections.

Validation Testing

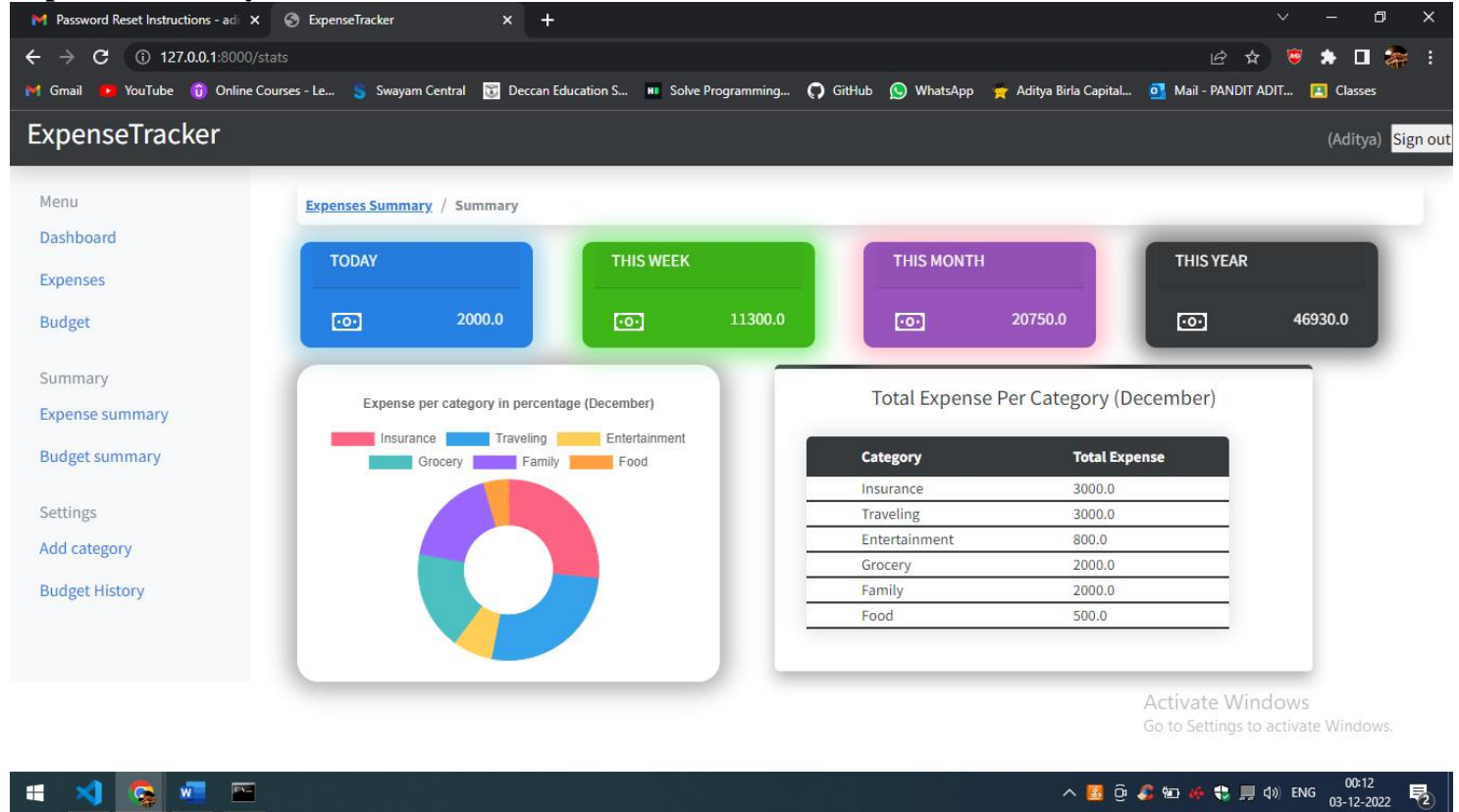
It gives the confirmation that the product meets its intended use and the needs of its users. It was carried out to confirm that all functional and performance specifications were satisfied or not by presenting the result after the test is carried out.

4.3 Test cases

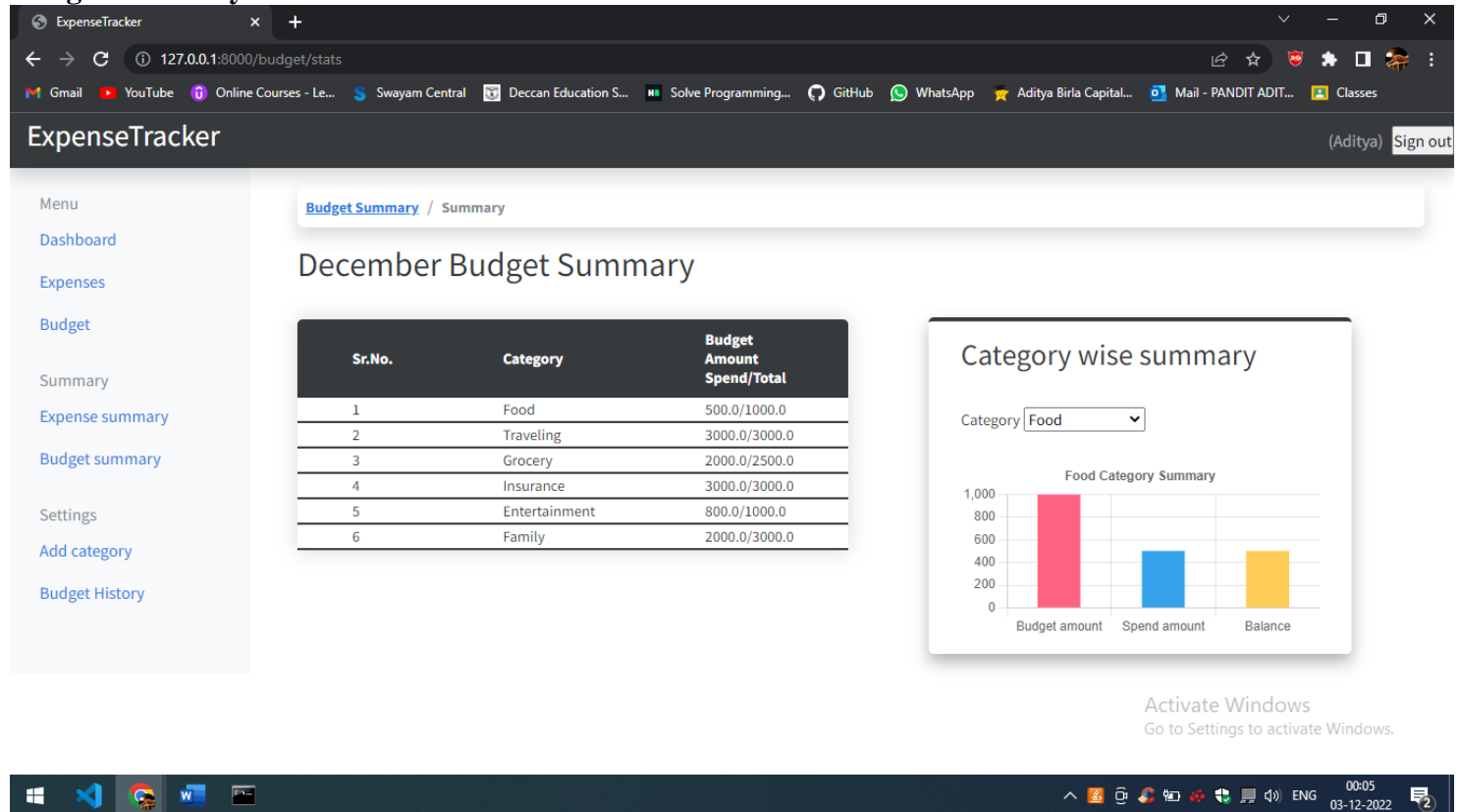
Test case ID	Feature	Description	Steps to execute	Expected Result	PASS/FAIL
TC001	Registration for new users	Check whether the user can register into system with valid inputs.	1) Enter username, email, and password in the respective fields. 2) Click on the register button.	Registration successful and account activation link sent on user's email.	PASS
TC002	Account activation for new users	Check whether the user get account activation link on email id.	1) Open email. 2) Click on account activation link.	Account activated successfully and redirect to login page.	PASS
TC003	Login for registered users	Check whether the user can login into system with valid inputs.	1) Enter valid username and password in the respective fields. 2) Click on the login button.	Successful login and dashboard will be displayed.	PASS
TC004	Add a new expense in the system.	Check whether the user can add expense details.	1) Enter the expense details in respective fields. 2) Click on the submit button.	Expense added successfully.	PASS
TC005	Add budget in the system	Check whether the user can add budget details.	1) Enter the budget amount as per category in respective field. 2) Click on the submit	Budget added successfully	PASS
TC006	Logout	Check whether the user can logout from the system.	Click on the logout button.	User logged out from the system and redirected to the home page successfully.	PASS

5. Reports

Expense Summary



Budget Summary



Expense Report in pdf format

ExpenseTracker

PDF Output

1 / 1 | 93%

ExpenseTracker

Expense List

No	Amount	Category	Description	Date
1	2500.0	Family	Mom's birthday	Dec. 3, 2022
2	200.0	Food	KFC	Dec. 3, 2022
3	800.0	Entertainment	Swar Zankar	Dec. 2, 2022
4	3000.0	Traveling	Vaishno devi	Dec. 2, 2022
5	500.0	Food	Sub-way	Dec. 1, 2022
6	3000.0	Insurance	LIC	Dec. 1, 2022
7	2000.0	Grocery	Grocery	Dec. 1, 2022
8	2000.0	Family	Birthday Party	Nov. 25, 2022
9	4000.0	Traveling	Goa Trip	Nov. 20, 2022
10	3000.0	Insurance	LIC	Nov. 19, 2022
11	200.0	Food	McDonald	Nov. 12, 2022
12	250.0	Entertainment	Kantara movie	Nov. 12, 2022
13	2300.0	Grocery	Monthly Grocery	Nov. 1, 2022
14	700.0	Food	KFC	Oct. 29, 2022
15	1000.0	Traveling	Katraj Udyan	Oct. 29, 2022
16	2780.0	Family	Dada Birthday	Oct. 23, 2022
17	600.0	Entertainment	Sa va ni events	Oct. 20, 2022
18	3000.0	Insurance	LIC	Oct. 5, 2022
19	2500.0	Grocery	Monthly Grocery	Oct. 1, 2022

Total : 34330.0

Activate Windows
Go to Settings to activate Windows.

Expense Report in excel format

Expenses_2022-12-03 01_09_18.502046.xls - Compatibility Mode - Excel

Aditya Pandit

File Home Insert Page Layout Formulas Data Review View Automate Help

Clipboard Font Alignment Number Styles Cells Editing Analysis Sensitivity

Amount

Amount	Description	Category	Date
2500.0	Mom's birt	Family	2022-12-03
200.0	KFC	Food	2022-12-03
800.0	Swar Zank	Entertainm	2022-12-02
3000.0	Vaishno di	Traveling	2022-12-02
500.0	Sub-way	Food	2022-12-01
3000.0	LIC	Insurance	2022-12-01
2000.0	Grocery	Grocery	2022-12-01
2000.0	Birthday P	Family	2022-11-25
4000.0	Goa Trip	Traveling	2022-11-20
3000.0	LIC	Insurance	2022-11-19
200.0	McDonald	Food	2022-11-12
250.0	Kantara m	Entertainm	2022-11-12
2300.0	Monthly G	Grocery	2022-11-01
700.0	KFC	Food	2022-10-29
1000.0	Katraj Udy	Traveling	2022-10-29
2780.0	Dada Birth	Family	2022-10-23
600.0	Sa va ni ev	Entertainm	2022-10-20
3000.0	LIC	Insurance	2022-10-05
2500.0	Monthly G	Grocery	2022-10-01

Expenses

Activate Windows
Go to Settings to activate Windows.

6. Drawbacks and limitations

- User can add only one monthly budget in the proposed system.
- System does not provide notification regarding expiration of budget or if user has over-used the budget amount.
- In dashboard, user can view only last three months expense summary, user don't have month selection choice.
- Proposed system works only with Indian currency, multiple currencies are not included in the proposed system.
- System does not provide interaction with user's income

7. Conclusion

The Expense Tracker is a web-based system, which is very easy and convenient to use. The system is developed to make the process of expense tracking easy. The system is complete in the sense that it is operational, and it is tested by entering data and getting the reports in proper order.

8. Future enhancement and conclusion

- System can work on both mobile platforms as well as web-based platforms.
- System will provide functionality to fetch transactions from UPI platforms like Google pay, Phone pay etc.
- Users can provide feedback about the system which will help to improvise the system in a better way.
- User can work with multiple currencies.
- User can download expense details in pdf, excel format within date range.
- System will provide notification for over-used budget or monthly expiration of budget.

9. Bibliography

Website References:

- <https://www.w3schools.com>
- <https://www.javapoint.com/>
- <https://www.stackoverflow.com/>
- <https://www.youtube.com/>
- <https://docs.djangoproject.com/en/4.1/>