EXPENSE MANAGER

A PROJECT REPORT

Submitted by

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In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

INFORMATION TECHNOLOGY

Vishwakarma Government Engineering College, Ahmedabad.

Gujarat Technological University, Ahmedabad

May , 2024

VISHWAKARMA GOVERNMENT ENGINEERING COLLEGE

Nr. Visat three roads, Sabarmati-Koba highway, Chandkheda, Ahmedabad-382424

CERTIFICATE

This is to certify that the project report submitted along with the project entitled Expense Manager has been carried out by Pargi Sunilkumar Lalsingbhai under my guidance in fulfillment for the degree of Bachelor of Engineering in Information Technology, 8th Semester of Gujarat Technological University, Ahmadabad during the academic year 2023-24.

Prof.Dipak C Patel	Prof. Vibha D Patel
Internal Guide	Head of the Department

Date: - 15/04/2024

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Sunilkumar Lalsingbhai Pargi** has successfully completed internship in our organization as an intern in **Python/Django** for the duration of **13 Weeks**.

He/She has worked on project title **Expense Manager**.

During this tenure, we found that candidate is hardworking, conscientious & a responsible intern. The feedback of him/her participation has always been positive and we wish him/her all the best in future.

For, Arth Infosoft Pvt. Ltd

(Authorised Signature)

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DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled Expense Manager submitted in fulfillment for the degree of Bachelor of Engineering in Information Technology to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me and no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

PARGI SUNILKUMAR LALSINGBHAI

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ACKNOWLEDGMENT

First, I would like to thank Mr.Mayanksir for giving me the opportunity to do an internship within the company Earth infosoft pvt ltd. For me this was a great experience I can learn from. It helped me to explore my skills and increased my interest in web development.

We really grateful and wish our profound our indebtedness to Mayanksir for guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this internship project documentation. Without this valuable support and guidance, this internship could not elevate up to this level of development from my point of View

Finally, I must acknowledge with due respect the constant support and patients of my parents. I would also like to thank Mr. MayankSir for helping us during my mobility period. I appreciate their patience and help.

Yours sincerely,
PARGI SUNILKUMAR LALSINGBHAI
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ABSTRACT

Personal finance management is an important part of people's lives. However, everyone does not have the knowledge or time to manage their finances in a proper manner. And, even if a person has time and knowledge, they do not bother with tracking their expenses as they find it tedious and time-consuming. Now, you don't have to worry about managing your expenses, as you can get access to an expense tracker known as expense manager that will help in the active management of your finances. An Expense Tracker also known as expense manager and money manager, an expense tracker is a web app that helps to keep an accurate record of your money inflow and outflow. Many people in India live on a fixed income, and they find that towards the end of the month they don't have sufficient money to meet their needs. While this problem can arise due to low salary, invariably it is due to poor money management skills. Future iterations of the Personal Expense Manager will explore integration with banking APIs for automatic transaction. It expand support for additional languages and currencies. In conclusion, the Personal Expense Manager is a user-friendly and feature-rich web that aims to revolutionize personal finance management, fostering a culture of financial responsibility and well-informed decision-makingamongusers.

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Abbreviations

ALU	**Arithmetical&Logical Unit**
SDLC	**SoftwareDevelopmentLifeCycle**
α	**SymbolicSpeed**
β	**Efficiency**

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1. OVERVIEW OF THE COMPANY

1.1 HISTORY

Arth Infosoft Pvt. Ltd. has Indian established IT growing company, aims to serve with affordable Graphic, Web and Software solutions. Arth specializes in particular, but not limited to graphic, website designing, web application and web portal development. Moreover, we are also ready to offer your business or services to a wider audience through our strong SEO (Search Engine Optimization) campaigns. Our online reputation is founded on the ability to deliver web services in Word press, Magento, PHP, Drupal, Joomla and much more with custom solutions based on client's requirement. We make every effort the long run clientele and hence 24X7 supports are not only our strategy but our business value.

1.2 DIFFERENT PRODUCT/SCOPE OF WORK

Arth comprises of a qualified and experienced team of creative web designers, developers and software programmers. The company abides by systematic and timely execution of all the small to the large range of web assignments.

We have created numerous artistically challenging projects and our diverse creative website design portfolios speaks for itself and even see our customized software product eduWare or eduExam which are excellently suitable for educational organizations. Some of the successful assignments are described below:

- Custom WordPress Theme Design and Development: We provide WordPress Theme Design and Development which is also sold over theme forest.
- Mobile Website Design & Development: We are on the cutting edge of advancements in terms of emerging technology and provide a full range of present day services including mobile website design and development.
- Corporate Identity Package: Our clientele also includes graphic designing solutions like corporate identity package for the startups. Our unique and artistry graphic designs ensure your business stands strong/tall in the market.

1.3 ORGANIZATION CHART

Fig 1.1 Organization chart

1.4 CAPACITY OF PLANT

- It has a capacity of approx. 50 employees.

2. OVERVIEW OF THE DEPARTMENT.

2.1 IT INCLUDES THE DETAILS ABOUT THE WORK BEING CARRIED OUT IN EACH DEPARTMENT.

HARDWARE

- Laptop

LIST THE TECHNICAL SPECIFICATIONS OF MAJOR EQUIPMENT USED IN EACH DEPARTMENT.

(1) BACKEND

- Sql Lite / Postgres Sql
- Django
- Python
- Mern

(2) FRONTEND

- HTML
- CSS
- JavaScript

(3) OTHER TECHNOLOGIES

- Machine Learning
- Artificial Intelligence

2.2 PREPARE SCHEMATIC LAYOUT WHICH SHOWS THE SEQUENCE OF OPERATION FOR MANUFACTURING OF END PRODUCT.

The production is carried out in following steps:

1. Plannig
2. Analysis
3. Design
4. Implementation
5. Testing and Integration
6. Maintence

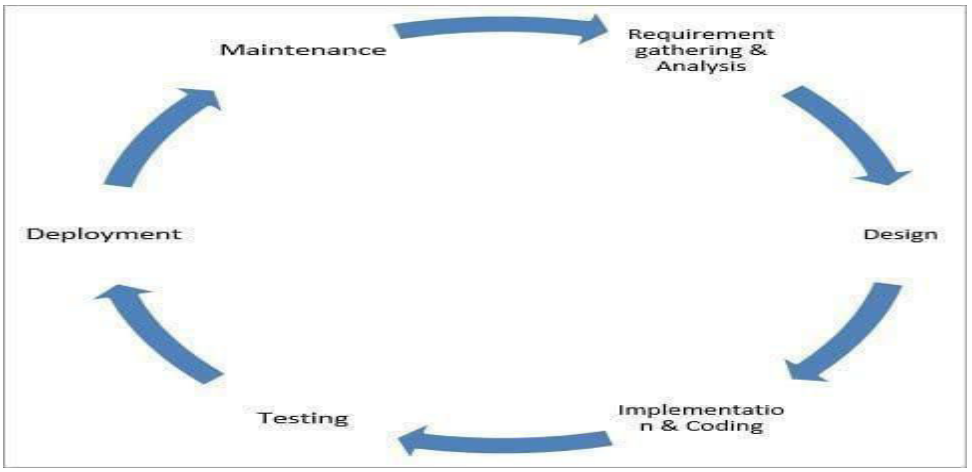


Fig 2.1 SDLC

2.3 EXPLAIN IN DETAILS ABOUT EACH STAGE OF PRODUCTION.

(1) REQUIREMENT GATHERING AND ANALYSIS

- We have collected all the information regarding project. Once requirement gathering is done, an analysis is done to check the feasibility of the development of a product. Once the requirement is clearly understood, the SRS (Software Requirement Specification) document is created. This document should be thoroughly understood by the developers and also be reviewed by the customer.

(2) DESIGN

- In this phase, the requirement gathered in the SRS document is used as an input and software architecture that is used for implementing system development is derived. We have design all the public pages like homepage, contact us page, about us page, login page, signup page etc. through HTML, CSS, JavaScript.

(3) IMPLEMENTING OR CODING

- Python Machine Learning Algorithm is used for implementation Implementation/Coding started according to the requirement. The Software design is translated into source code. All the components of the software are implemented in this phase

(4) TESTING

- Testing starts once the coding is complete and the modules are released for testing. In this phase, the developed software is tested thoroughly and any defects found are assigned back to get them fixed. Testers refer SRS document to make sure that the software is as per the customer's standard.

(5) DEPLOYMENT

- Once the product is tested, it is deployed in the production environment or first User Acceptance Testing (UAT), or application testing, is the final stage of any software development or change request lifecycle before go-live. UAT meaning the final stage of any development process to determine that the software does what it was designed to do in real-world situations. Actual users test the software to determine if it does what it was designed to do in real-world situations, validating changes made and assessing adherence to their organization's business requirements. The main purpose of acceptance testing is to validate end-to-end business flow is done depending on the customer expectation.

(6) MAINTENANCE

- After the deployment of a product on the production environment, maintenance of the product i.e., if any issue comes up and needs to be fixed or any enhancement is to be done is taken care by the developers.

3. INTRODUCTION TO PROJECT

3.1 PROJECT SUMMARY

The "Expense Manager" website is designed to provide users with a comprehensive platform for managing their expenses, tracking income, and gaining valuable insights into their financial habits. With a user-friendly interface and robust features, our application aims to streamline the process of financial management, empowering users to make informed decisions and achieve their financial goals.

- **USER:**

  User can create its profile also can use image for profile image. User can add expenses with various categories and subcategories by adding more details. He/She can also get receipts by adding expenses which occurs in a list and can be also used as receipts. In expense form which is provided user can upload its existing receipts that can be saved for future purposes. User can manage income by adding details like its currency and transaction type i.e. credit, cash etc. By this at the user will get its budget that can be used after income and expenses done from it

- **ADMIN:**

  It maintains the database. It manages the expenses and income details for user. It manages the user's account setting. It also manages the value of currency , transaction etc for user's convenience.

3.2 PURPOSE

The purpose of Expense Manager project is aiming to address various needs and challenges associated with the money management of user's by giving accurate budget. It serves several purposes, primarily aimed at ensuring financial health and efficiency within an organization.

- Cost Control
- Budgeting
- Financial Planning
- Resource Allocation

3.3 OBJECTIVE

1. Cost Reduction
2. Budget Adherence
3. Efficiency Improvement
4. Risk Management

3.4 SCOPE

The scope of Expense Manager website can be tailored to suit the needs and preferences of its target users, whether they are individual consumers, small businesses, or large enterprises. Regular updates and enhancements based on user feedback and market trends are essential for maintaining the website's relevance and competitiveness.

3.5 TECHNOLOGY AND LITERATURE REVIEW

(1) LITERATURE REVIEW/BACKGROUND STUDY

- This project is giving by our company for training and testing the models

(2) TECHNOLOGY

- The front end used in our project is HTML, CSS and JavaScript. We will follow the Iterative model for developing this Project and whole Project will be developed using the SDLC scenario.

(3) HTML

- HTML an initialize of Hyper Text Mark-up Language for web pages. It provides a means to describe the structure of text-based information in document by denoting text as headings, paragraphs, lists and so on and to supplement that text with interactive forms, embedded images and other objects.

(4) CSS

- CSS stands for Cascading Style Sheets.
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media.
- CSS saves a lot of work. It can control the layout of multiple web pages all at once.
- External stylesheets are stored in CSS files.

(5) JAVA SCRIPT

- JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive. Where HTML and CSS are languages that give structure and style to web pages, JavaScript gives web pages interactive elements that engage a user.

(6) PYTHON

- Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Python is dynamically typed and garbage-collected. It supports multiple programming paradigms, including structured, object-oriented and functional programming.
- Python is commonly used for developing websites and software, task automation, data analysis, and data visualisation. Since it's relatively easy to learn, Python has been adopted by many non-programmers, such as accountants and scientists, for a variety of everyday tasks, like organising finances

(7) DJANGO

- Django is a high-level web framework written in Python that encourages rapid development and clean, pragmatic design.
- It follows the Model-View-Template (MVT) architectural pattern, which is similar to the Model-View- Controller (MVC) pattern.
- Django provides a set of tools and libraries for building web applications efficiently, including built-in features for URL routing, template rendering, form handling, authentication, and more.
- It promotes the Don't Repeat Yourself (DRY) principle by emphasizing reusability and reducing redundancy in code. Django's philosophy revolves around making it easier to build complex, database-driven websites by providing a robust and secure foundation

(8) POSTGRE SQL

- PostgreSQL is an open-source relational database management system (RDBMS) known for its reliability, scalability, and extensive feature set. It supports a wide range of advanced SQL features, including complex queries, transactions, triggers, and stored procedures.
- PostgreSQL is ACID-compliant, ensuring that transactions are processed reliably and consistently.
- It offers support for various data types, including JSON, XML, arrays, and user-defined types, making it suitable for handling diverse data requirements. PostgreSQL provides built-in replication, partitioning, and indexing capabilities for optimizing performance and ensuring high availability.

- It is highly extensible, with support for custom functions, data types, and procedural languages, allowing developers to tailor the database to their specific needs.

- In summary, Django is a web framework for building web applications, while PostgreSQL is a powerful relational database management system. When used together, Django provides the structure and tools for developing web applications, while PostgreSQL serves as the backend database for storing and managing data efficiently.

3.6 PROJECT PLANNING

Project Planning is concerned with identifying and measuring the activities, milestones and deliverables produced by the project. Project planning is undertaken and completed sometimes even before any development activity starts. Project planning consists of following essential activities:

- ➢ Scheduling manpower and other resources needed to develop the system.
- ➢ Staff organization and staffing plans.
- ➢ Risk identification, analysis, and accurate planning.
- ➢ Estimating some of the basic attributes of the project like cost, duration and efforts.

The effectiveness of the subsequent planning activities is based on the accuracy of these estimations. Project management involves planning, monitoring and control of the people, process and the events that occurs as the software evolves from a preliminary concept to an operational implementation. Cost estimation is a relative activity that is concerned with the resources required to accomplish the project plan.

3.6.1 PROJECT DEVELOPMENT APPROCH AND JUSTIFICATION

A Software process model is a simplified abstract representation of a software process, which is presented from a particular perspective. A process model for software engineering is chosen based on the nature of the project and application, 14 the methods and tools to be used, and the controls and deliverables that are required. All software development can be characterized as a problem-solving loop which in four distinct stages is encountered:

- ➢ Requirement analysis
- ➢ Design

- ➢ Coding
- ➢ Testing
- ➢ Deployment

3.6.2 PROJECT EFFORT AND TIME, COST ESTIMATION

(1) EFFORT ESTIMATION

- Each company determines the output it expects from its team members. Let us call the average output of a team member per man-hour as the unit output. Assume that one has to deliver an end-to-end login module's functionality for an application. The time spent on the login functionality should include the corresponding time required for gathering the requirements, doing a requirement analysis, architecture inputs, form design, object/class design, implementing the business rules, data validation and storage, framework (i.e., code for login module's constants, enumerations, utilities), testing, debugging, deployment up to user acceptance, etc. Now, the estimator has to figure out how many man-hours it would take to complete the login module, keeping all these factors in mind.
- The sequence of work and dependencies should be considered as they do cause delays in completion. For example, form design should be done first (all the way up to acceptance by the customer), then object design (up to acceptance by the architect), followed by coding (for business rules, calculations, and data validations), internal testing, and user acceptance testing. A wise estimator would always take support from other people to understand the scope of work to do a given task.
- Implementing the business rules, data validation and storage, framework (i.e., code for login module's constants, enumerations, utilities), testing, debugging, deployment up to user acceptance, etc. Now, the estimator has to figure out how many man-hours it would take to complete the login module, keeping all these factors in mind. The sequence of work and dependencies should be considered as they do cause delays in completion. For example, form design should be done first (all the way up to acceptance by the customer), then object design (up to acceptance by the architect), followed by coding (for business rules, calculations, and data validations), internal testing, and user acceptance testing. A wise estimator would always take support from other people to understand the scope of work to do a given task.

(2) COST ESTIMATION

- The COCOMO Model Like all estimation models for software, the COCOMO models require sizing information. Three different sizing options are available as part of the model hierarchy: object points, function points, and lines of

source code. Like function points, the object point is indirect software that is computed using counts of the number of

1) Screens (at the user interface),
2) Reports,
3) Components likely to be required to build the application.

- Once complexity is determined, the number of screens, reports, and components are weighted according to Table above. The object point count is then determined by multiplying the original number of object instances by the weighting factor in table above and summing to obtain a total object point count.
- When component-based development or general software reuse is to be applied, the percent of reuse (%reuse) is estimated and the object point count is adjusted: NOP = (object points) X [(100 - %reuse) / 100]. Where NOP is defined as new object points. To derive an estimate of effort based on the computed NOP value, a "productivity rate" must be derived. PROD=NOP/ person-month.

- For different levels of developer experience and development environment maturity. Once the productivity rate has been determined, an estimate of project effort can be derived as

  Estimated effort = NOP/PROD.

- There are three types of software project: Organic project, Semi-detached project, Embedded Project.

Cost required to develop project=effort*rs/month

Effort Estimation (E):

In Organic=2.4 (KLOC) 1.05 PM

In semidetached=3.0(KLOC) 1.12 PM

In Embedded=3.6(KLOC) 1.20 PM

Duration Estimation (D):

In Organic=2.5(effort) 0.38 months

In semidetached=2.5(effort) 0.35 months

In Embedded=2.5((effort) 0.32 months

Person Estimation: P=E/D

ADVANTAGES OF COCOMO:

- COCOMO is factual and easy to interpret.
- One can clearly understand how it works.
- Accounts for various factors that affect cost of the project.
- Works on historical data and hence is more predictable and accurate.

DISADVANTAGES OF COCOMO:

- COCOMO model ignores requirements and all documentation.
- It ignores customer skills, cooperation, knowledge and other parameters.
- It oversimplifies the impact of safety/security aspects.
- It ignores hardware issues It ignores personnel turnover levels It is dependent on the amount of time spent in each phase.

3.6.3 ROLES AND RESPONSIBILITIES

This phase defines the role and responsibilities of each and every member involved in developing the system. To develop this system there was only one group with two members working on the whole application. Each member was responsible for each and every part of developing the system. Each of the group members has sufficient knowledge in several programming languages.

3.6.4 GROUP DEPENDENCIES

1. LOGICAL DEPENDENCIES

Also known as causal dependencies. These dependencies are an inherent part of the project and cannot be avoided. Tasks characterized as logical dependency usually use the output of the preceding tasks as input so you can't run them in parallel.

Consider baking a cake as your project. You can't start the process unless you have all the ingredients you need.

2. RESOURCE DEPENDENCIES

This dependency originates from a project constraint as it deals with the availability of shared resources. If two tasks require the same resource for completion, then they'll be dependent on the completion of the other.

3. PREFERENTIAL DEPENDENCIES

These dependencies generally depend on the team members, other stakeholders, and industrial practices. Preferential dependencies arise when tasks are scheduled to follow developed standard practices.

In most cases, the project can compete even if you ignore the preferential dependencies in your tasks, but there will be some quality issues.

4. EXTERNAL DEPENDENCIES

No matter how much you plan, there are things bound to be out of your control. Some tasks are dependent on outside factors and project managers can't do anything to influence their project progress To deal with these dependencies, it's recommended to have a backup plan.

Delays from the suppliers or other unforeseen circumstances may take place which can affect your progress. A good project manager always makes some contingency plans so everything keeps running smoothly even in the face of adversity.

5. CROSS-TEAM DEPENDENCIES

This is a common occurrence in large organizations. Sometimes multiple teams work on a single, complex project and they rely on each other to complete the project on time. Effective Expense manager can be implemented to avoid long hours.

3.7 PROJECT SCHEDULING(GANTT CHART)

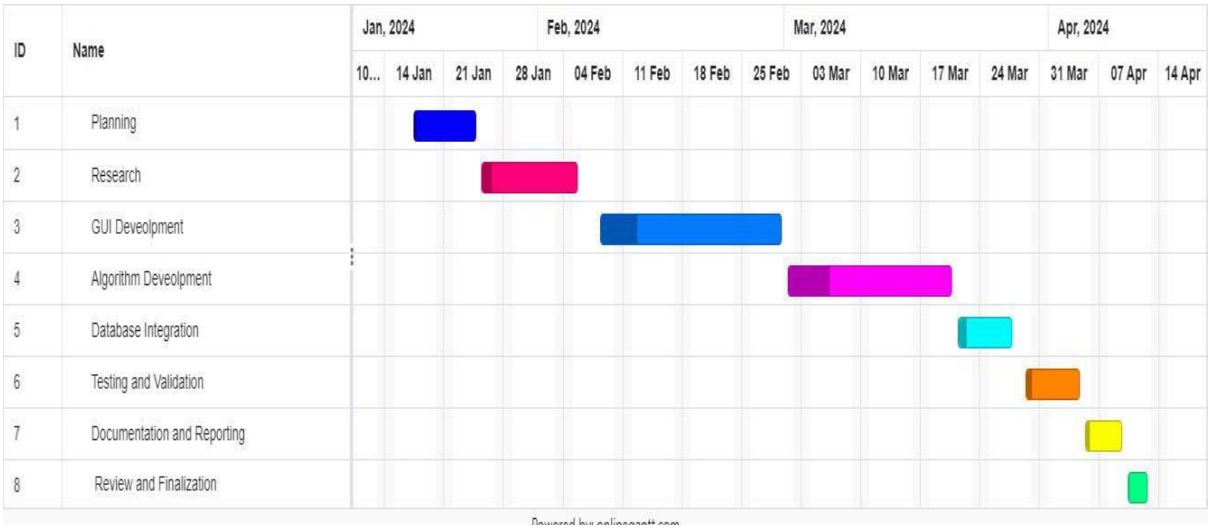


Fig 3.1.Gantt chart

4. SYSTEM ANALYSIS

4.1 STUDY OF CURRENT SYSTEM

The "Expense Management Software Market" research report 2023 provides a thorough and in-depth study of the industry's segmentation based on Types, Applications and Regions. It covers the important factors affecting market growth as well as the current trends, opportunities and concerns. The market's CAGR status is included, giving important information about how the market has performed over time. The Expense Management Software Market report is an invaluable tool for organisations, providing a thorough overview of market dynamics, SWOT analysis and future strategies for enterprises to successfully map their path forward.

4.2 PROBLEM AND WEAKNESSES OF CURRENT SYSTEM

1. SUSCEPTIBLE TO COSTLY HUMAN ERRORS

Did you know that up to 9 out of 10 spreadsheets consist of human errors?

Unfortunately, even the smallest of mistakes in a spreadsheet can cause catastrophic consequences. Fidelity Magellan Fund once suffered a $2.6 billion overstatement when an accountant accidentally omitted the minus sign on a net capital loss of $1.3 billion.

There is always a greater chance of human error with manual processes, especially when it comes to complex data sets, such as those involved with expense management. Failure to accurately track you company’s expenditure and pay invoices on time can wreak havoc on your business’s bottom line.

2. LACK OF COLLABORATION AND ACCESS

Because Excel spreadsheets are a single file, only one user at a time may access and modify the data. It can also be challenging to collaborate with other departments because you have to manually share or email a copy of the relevant spreadsheet with your colleagues.

When it comes to expense management data, however, these Excel spreadsheets are frequently shared and proofed across numerous teams and departments. To guarantee that everyone is viewing the current version, users must be rigorous about version control and sharing when updates are made.

3. TIME-CONSUMING MANUAL PROCESS

The quantity of expense management data you need to review, analyse, and track will grow as your business evolves. The only way to validate your data when using Excel

spreadsheets, however, is to manually double check and re-enter any inaccurate information. This is a time-consuming and labour-intensive task.

As a result, Excel spreadsheets slow workers down and reduce accuracy by requiring them to perform repetitive processes that could be simplified or automated using expense management and invoicing software.

4. INACCURACY LEADS TO SLOWER DECISION MAKING

There's no denying that manual processes which increase the chances of inaccuracy lead to slower decision making within companies. Extracting expense data and invoices from different departments, as well as consolidating them and summarising the information, is incredibly time consuming.

Because spreadsheets are prone to inaccuracies, everyone involved in processing the information must double-check the data as much as possible, which can further slow the process.

5. LACK OF VERSION CONTROL

The sharing of Excel spreadsheets from team to team might lead to concerns with the data's version and validity. You should consider who had the most recent access to the data. Who did what to the spreadsheet and when? Can you confirm that the calculations are correct? If you don't trust the answers, you may need to start all over again.

6. DATA ISN'T UPDATED IN REAL-TIME

Excel spreadsheets don't update in real-time, so each update requires manual input. Because Excel spreadsheets can be difficult to modify, they are usually updated at the end of the day or every few days. Typically, this entails keeping daily paper records and then manually entering them to update the Excel spreadsheet at a later date. Not only is this a waste of time, but it also raises the likelihood of data being entered inaccurately or decisions being made based on out-of-date information.

7. INCREASED POTENTIAL TO LOSE IMPORTANT DATA

If a spreadsheet owner is unfamiliar with best practices for data storage and backup, they might keep just one version of their spreadsheet in a single location, such as on their desktop.

In the event of a technical issue, however, there's no guarantee of complete data recovery, meaning a company could lose all of their vital data in a split-second.

4.3 REQUIREMENTS OF NEW SYSTEM

AUDIT TRAIL FOR FASTER VERIFICATIONS

Every expense report on Fyle has an audit trail that contains the information of every action on that report. This simplifies audits and helps employers keep track of and verify all reported expenses with ease.

ACCESS TO ADVANCED ANALYTICS

Expense analytics provide insight into the spending trends of an organization in real-time. They can also know the most violated policies and the most frequent violators to identify and address bottlenecks. This data can be very valuable in increasing your organization's financial productivity as well.

CORPORATE CREDIT CARDS MANAGEMENT

Employers have access to direct bank feeds from every bank and card program. This helps detect and avoid any bottlenecks or the chance of fraud and misuse. Automated credit card reconciliation matches expense reports entries with card statements and prompts in case of mismatches or duplicates. Reconciliation need not be daunting anymore.

4.4 SYSTEM FEASIBILITY

A feasibility study is a high-level capsule version of the entire System analysis and Design Process. The study begins by classifying the problem definition. Feasibility is to determine if it's worth doing. Once an acceptance problem definition has been generated, the analyst develops a logical model of the system. A search for alternatives is analyzed carefully. There are 3 parts in feasibility study.

1) Operational Feasibility

2) Technical Feasibility

3) Economical Feasibility

OPERATIONAL FEASIBILITY

Operational feasibility is the measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development.The operational feasibility assessment focuses on the degree to which the proposed development projects fits in with the existing business environment and objectives with regard to development schedule, delivery date, corporate culture and existing business processes.To ensure success, desired operational outcomes must be imparted during design and development. These include such design-dependent parameters as reliability, maintainability, supportability, usability, producibility, disposability, sustainability, affordability and others. These parameters are required to be considered at the early stages of design if desired operational behaviours are to be realised. A system design and development requires appropriate and timely application of engineering and management efforts to meet the previously mentioned parameters

effectively when its technical and operating characteristics are engineered into the design. Therefore, operational feasibility is a critical aspect of systems engineering that needs to be an integral part of the early design phases.

TECHNICAL FEASIBILITY

This involves questions such as whether the technology needed for the system exists, how difficult it will be to build, and whether the firm has enough experience using that technology. The assessment is based on outline design of system requirements in terms of input, processes, output, fields, programs and procedures. This can be qualified in terms of volume of data, trends, frequency of updating inorder to give an introduction to the technical system. The application is the fact that it has been developed on windows XP platform and a high configuration of 1GB RAM on Intel Pentium Dual core processor. This is technically feasible .The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. It is an evaluation of the hardware and software and how it meets the need of the proposed system.

ECONOMICAL FEASIBILITY

Establishing the cost-effectiveness of the proposed system i.e. if the benefits do not outweigh the costs then it is not worth going ahead. In the fast paced world today there is a great need of online social networking facilities. Thus the benefits of this project in the current scenario make it economically feasible. The purpose of the economic feasibility assessment is to determine the positive economic benefits to the organization that the proposed system will provide. It includes quantification and identification of all the benefits expected. This assessment typically involves a cost/benefits analysis.

4.5 ACTIVITY OF EXPENSE MANAGER ARCHITECTURE

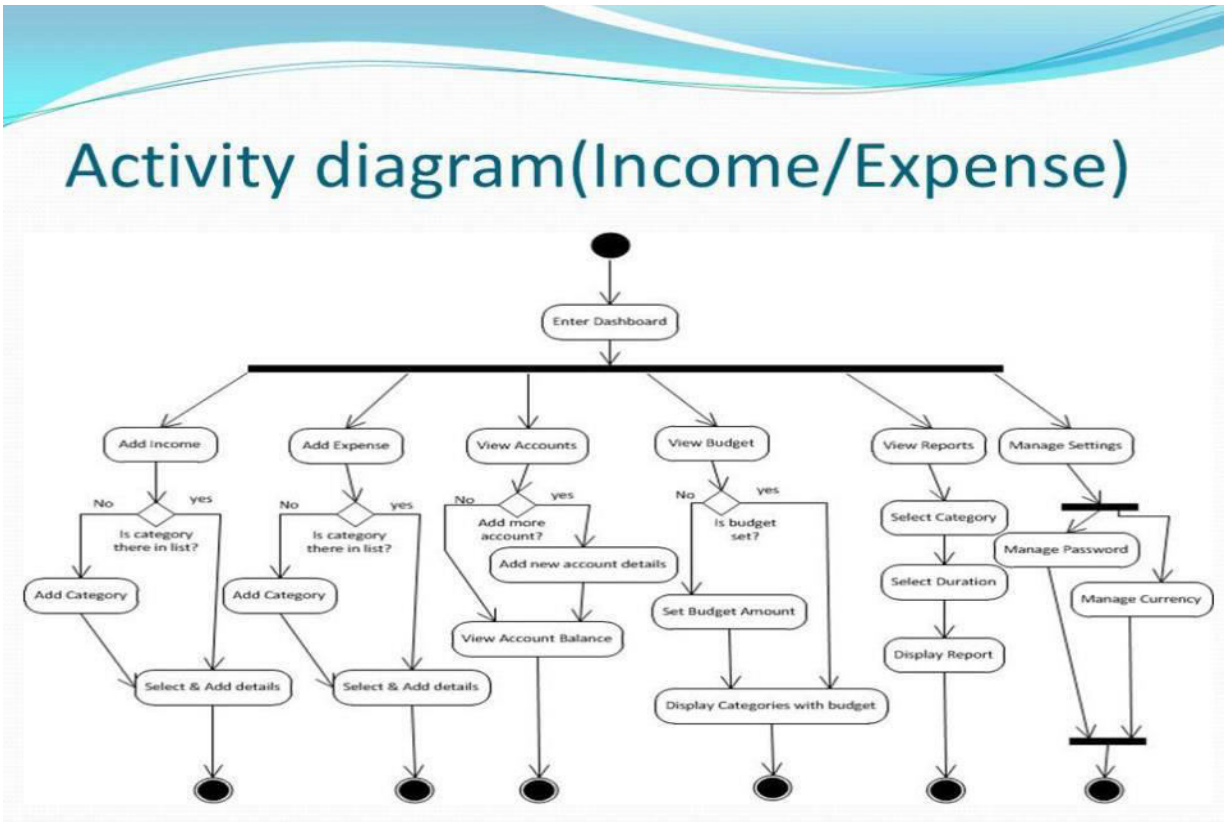


Fig 4.1 Activity diagram

4.5.1 USE CASE DIAGRAM

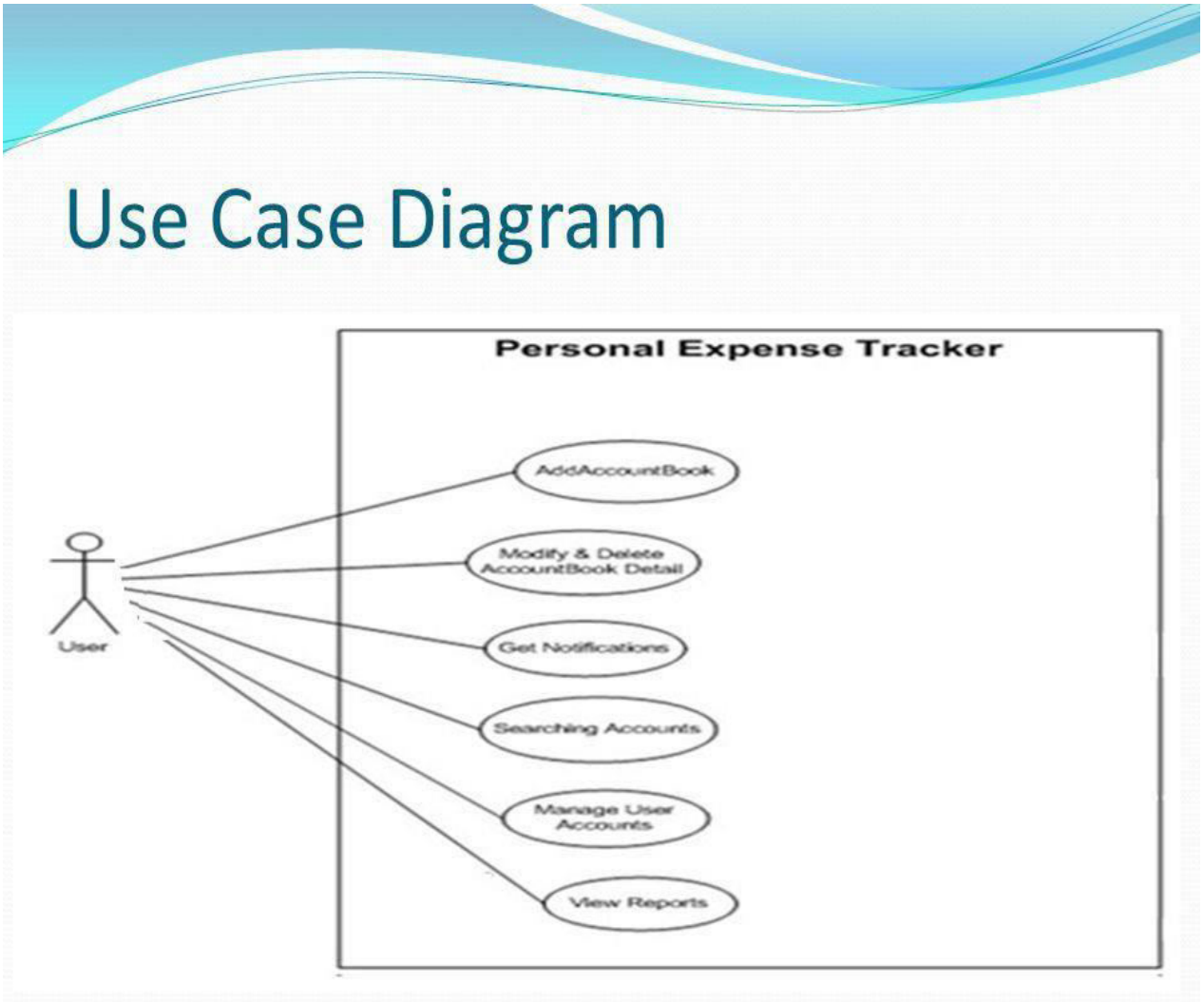


Fig 4.2 Use case diagram

- In software and systems engineering, a use case is a list of steps, typically defining interactions between actor and a system, to achieve a goal.
- The actor can be a human, an external system, or time.
- In systems engineering, use cases are used at a higher level than within software engineering, often representing missions or stakeholder goals.
- The detailed requirements may then be captured in Systems Modeling Language or as contractual statements.
- As an important requirement technique, use cases have been widely used in modern software engineering over the last two decades.
- Use case driven development is a key characteristic of process models and frameworks.
- With its iterative and evolutionary nature, use case is also a good fit for agile development.

4.5.2 SEQUNSE DIAGRAM

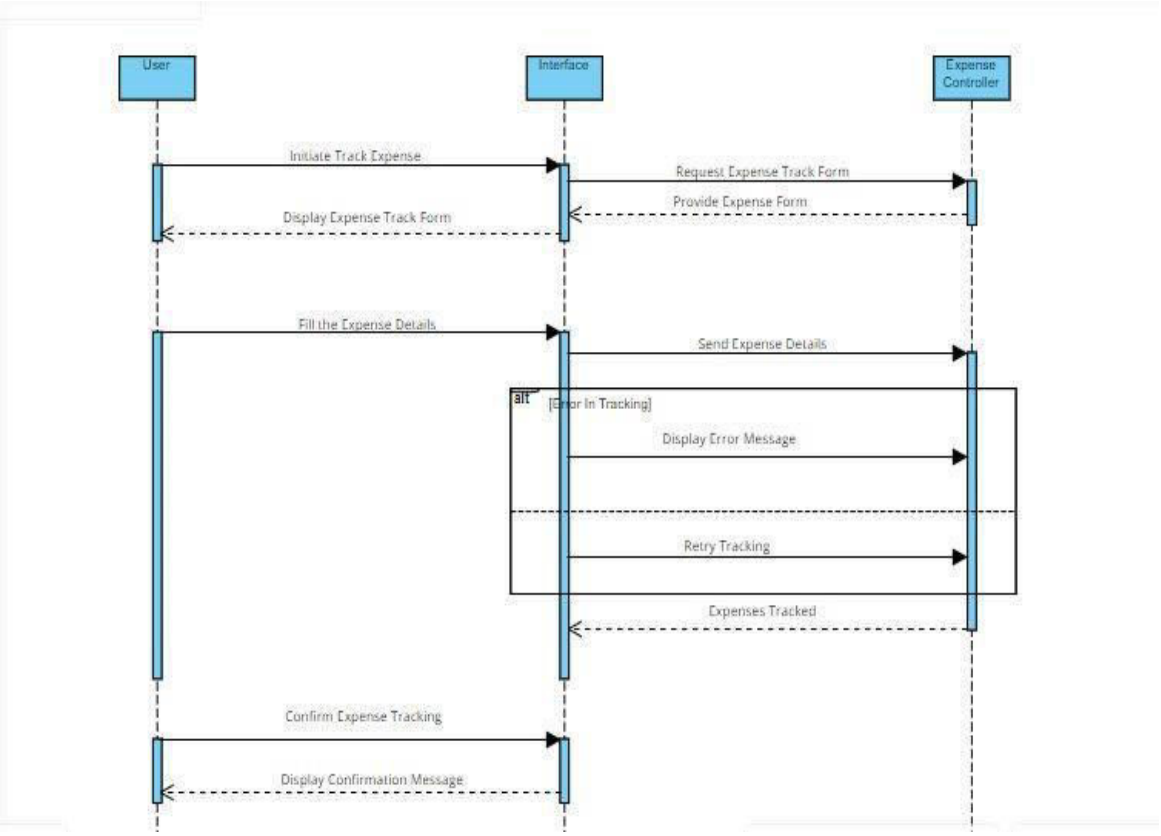


Fig 4.3 Sequnse diagram

4.5.3 E-R DIAGRAM

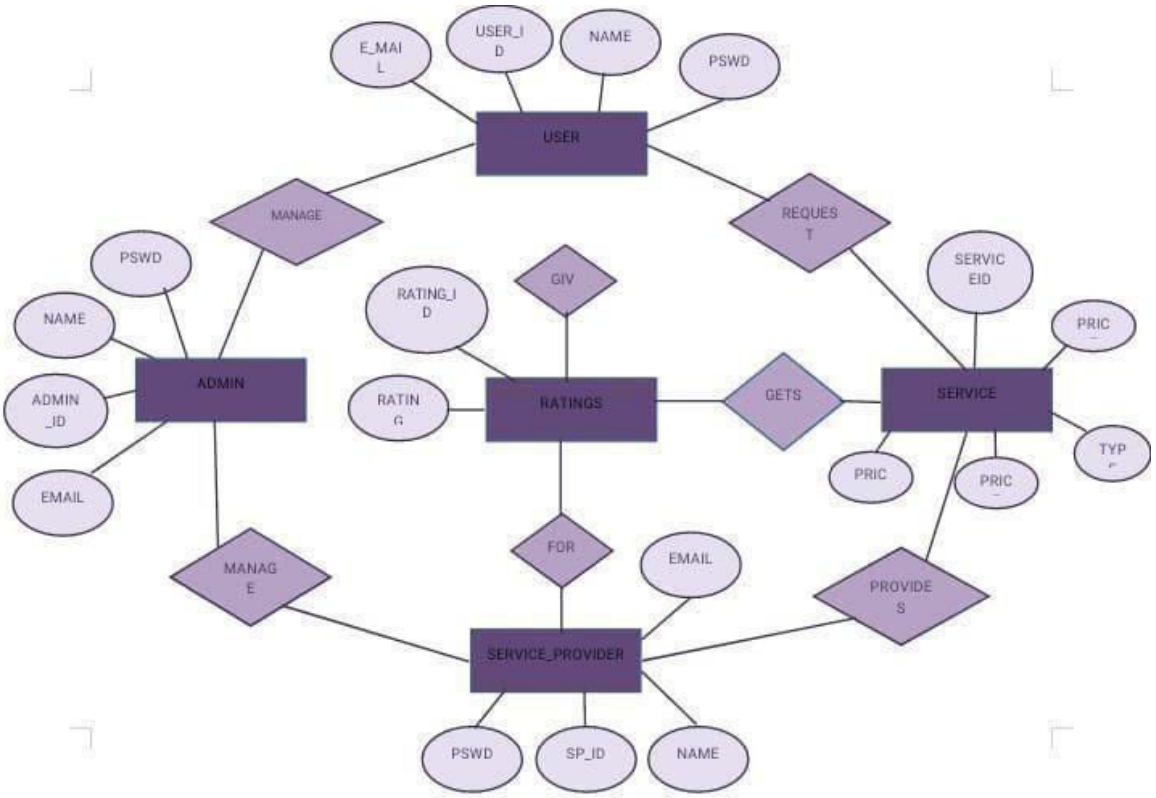


Fig 4.4 E-R diagram

4.6 FEATURES OF EXPENSE MANAGER

- Expense Tracking:- By adding expenses along with their categories and sub-categories, users can access their expense details listed with the status of transactions, indicating whether they are completed by the user or pending.
- Income Management::- Users can record their sources of income, such as salaries, salary obtained on which date and currency of salary.
- Income management allows users to have a complete view of their financial inflows alongside their expenses.
- Budgeting Tools:- Budget creation and management functionalities enable users to look at expense for different categories and track their progress against these budgets.
- Receipt Management:- Users can upload and store digital copies of receipts for their expenses.
- Receipts can be attached to individual transactions for easy reference and expense verification.

4.7 LIST MAIN MODULES

4.7.1 SIGNUP / LOGIN MODULE

LOGIN

Clicking on Login link in header should open a popup and allow user to log in to the system. This Login screen would be central place to allow different types of users logging in to the system i.e., Users, and admin would redirect to dashboard.

SIGNUP

Users should be able to register themselves with select their role using sign up screen. This should be a separately designed page where users would be redirected when they click on Create New Account link in Login Dialog. User should straightaway be able to login to the system once they create their account.

4.7.2 FEATURE MODULE

- User Authentication and Authorization
- Expense Entry
- Expense Categorization
- Budget Management
- Reporting and Analytics

4.7.3 TESTIMONIAL MODULE

- Testimonial Submission Form
- Moderation
- Continuous Collection

4.7.4 ADMIN MODULE

- Sign in
- Login
- Logout

4.8 SELECTION OF HARDWARE /SOFTWARE /ALGORITHMS/ METHODOLOGY/TECHNIQUES/ APPROACHES AND JUSTIFICATION

HARDWARE REQUIREMENTS

- Minimum 2.27Ghz processor
- RAM: 4GB minimum Software Requirements.
- Software Requirements
- Visual Studio Code (For live preview)

JUSTIFICATION

There are various applications for expense manager in present days. But as per our observation most of the applications are not user friendly. Because of this common people faces difficulty while using existing applications. As a solution, our proposed application is user friendly where everyone can use and it helps in expenditure savings. The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system .Thus by this all it proves it is user friendly. This application can lead to error free, secure, reliable and fast management system

5. SYSTEM DESIGN

5.1 SYSTEM DESIGN & METHODOLOGY

(1) SYSTEM DESIGN

- Requirements Gathering: Understand the needs and requirements of the users and stakeholders. Identify key features, functionalities, and constraints of the expense management system.
- Analysis: Analyze existing expense management processes and systems, if any. Identify pain points, inefficiencies, and areas for improvement. Consider the scalability and future growth of the system.
- Use Case Definition: Define the use cases or scenarios that the expense management system should support. This includes tasks such as expense entry, budgeting, reporting, user management, and integration with external systems.
- System Architecture: Design the high-level architecture of the expense management system. Determine whether it will be a web-based application, mobile app, or both. Choose appropriate technologies, frameworks, and databases based on scalability, performance, and security requirements.

(2) METHODOLOGY

The expense management process typically follows these steps: Employees log expenses, then submit them for reimbursement either directly to their manager, accounting department, or via an expense management system. Managers/approvers either approve or deny these claims.

5.2 DATABASE DESIGN / DATA STRUCTURE DESIGN / CIRCUIT DESIGN /PROCESS DESIGN/ STRUCTURE DESIGN

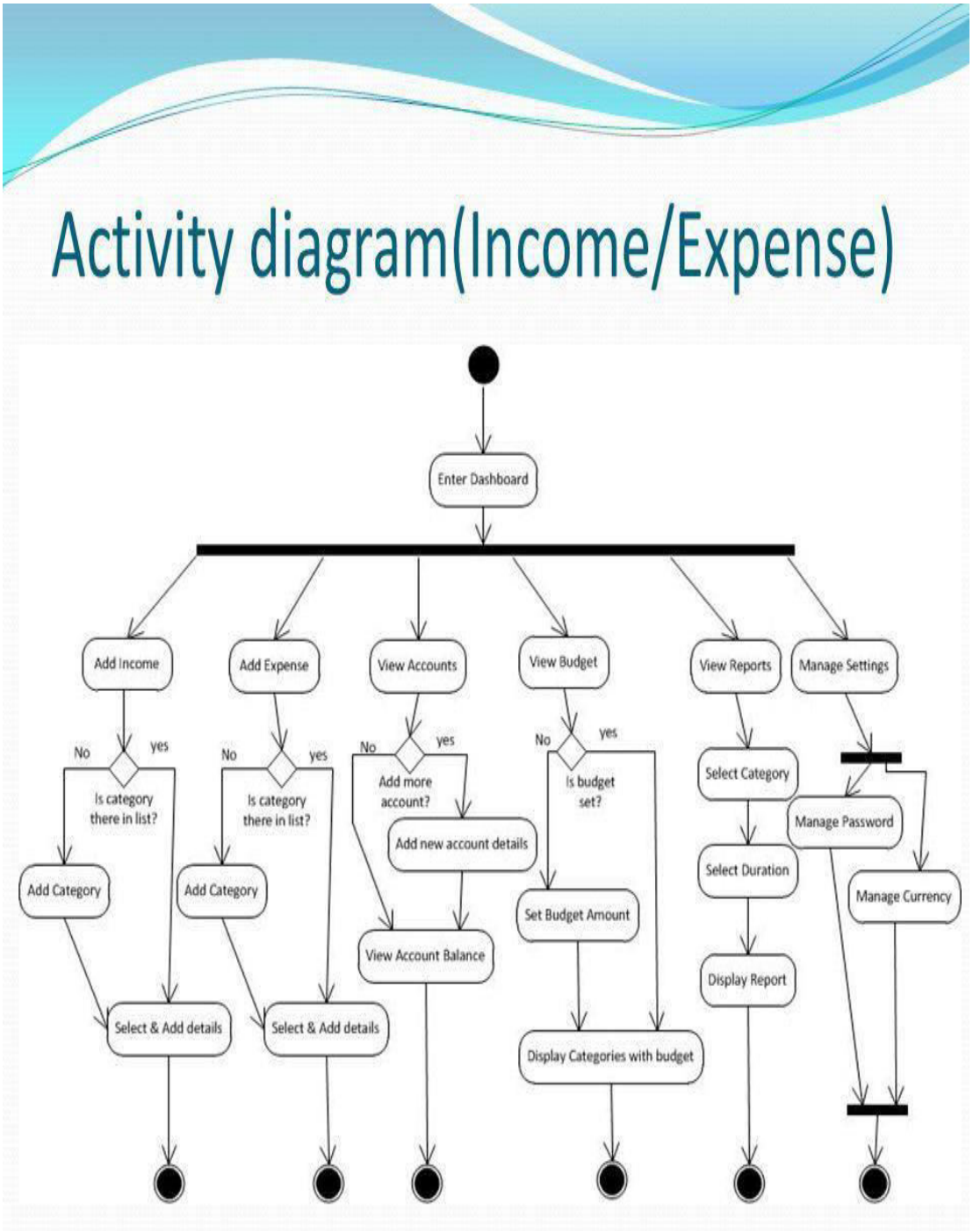


Fig 5.1 Database design

5.3 INPUT / OUTPUT AND INTERFACE DESIGN

5.3.1 STATE TRANSITION DIAGRAM

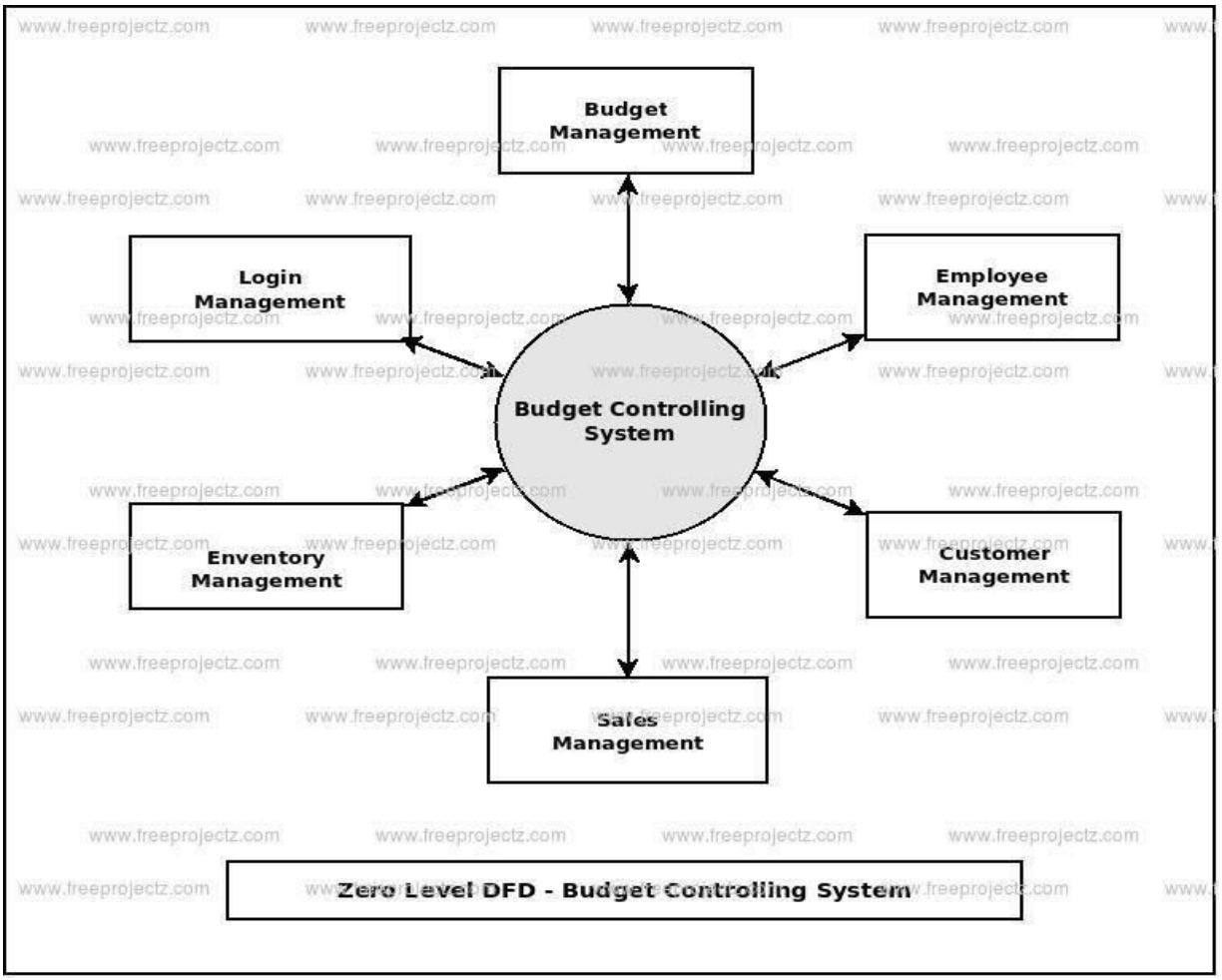


Fig 5.2 State transition diagram

5.3.2 SAMPLES OF FORMS, REPORTS AND INTERFACE

User Side

Step 1: Enter the URL to open the system

Step 2: It shows home page

Step 3: Sign-up if you are a new user

Step 4: Click on Login Button for Login

Step 5: Provide user name and password

Step 6 If username and password both is correct then it will login successfully.

Step 7 Its shows Dashboard

Step 8 expense create form

Step 9 manage income form

Step 10: fill both forms

Step 11: expense and income lit occurs

Step 12: receipt download/upload

Step 13: gets budget

Step 14: logout from website

5.3.3 ACCESS CONTROL / MECHANISM / SECURITY

SECURITY

As the system all the data are dumped at the server side the server provides the security to the unauthorized access of data.

6. IMPLEMENTATION

6.1 IMPLEMENTATION PLATFORM / ENVIRONMENT

- Our project is suitable to all type of users like single and multi-users.
- Multi users are allowed to operate the website at the same time.
- We provide the interface which is user friendly.
- We have GUI (graphical user interface) by which all type of users can easily access the application.
- One user at a time and also multi users can access the website at the same time and use all the services.
- If we don't provide the GUI in the website, then user won't like our website.
- For better performance and reliability, we have to include GUI in the website.
- So, for the more security and performance we have to use the GUI.

6.2 PROCESS / PROGRAM / TECHNOLOGY / MODULES SPECIFICATION(S)

USER AUTHENTICATION

- Identification and authentication are used to establish a user's identity.
- If a new user registers, then they first need to sign-up as a user basedon their need
- Each user is required to log in to the system.

PASSWORD PROTECTION

- Every user who is to be allowed to access the portal is given his own username and password and given his own access rights so that only authorized and authenticated users can access the project.

CONFIDENTIALITY

- Ensuring user confidentiality is a top priority for us.
- Our system is designed with the help of private routing that ensures that one user cannot access the data of another user.

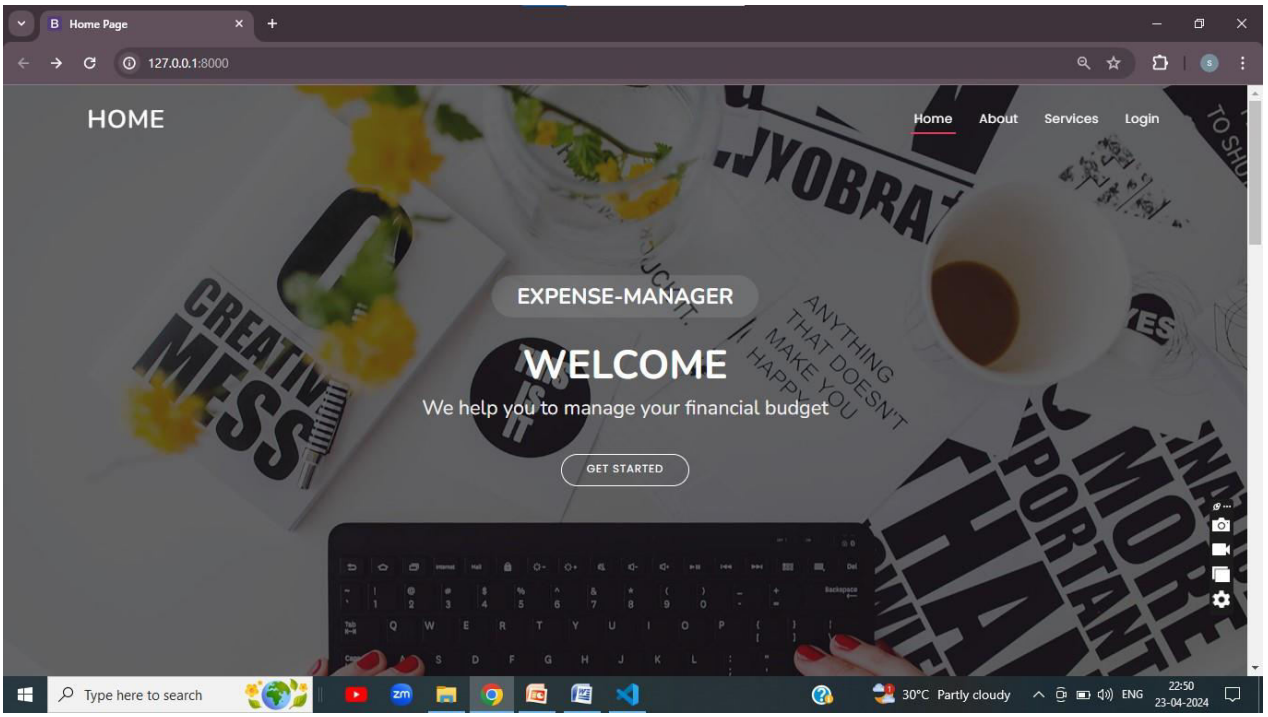
- To achieve this, we provide a unique key to each user to secure their data and prevent unauthorized access

SCALABILITY

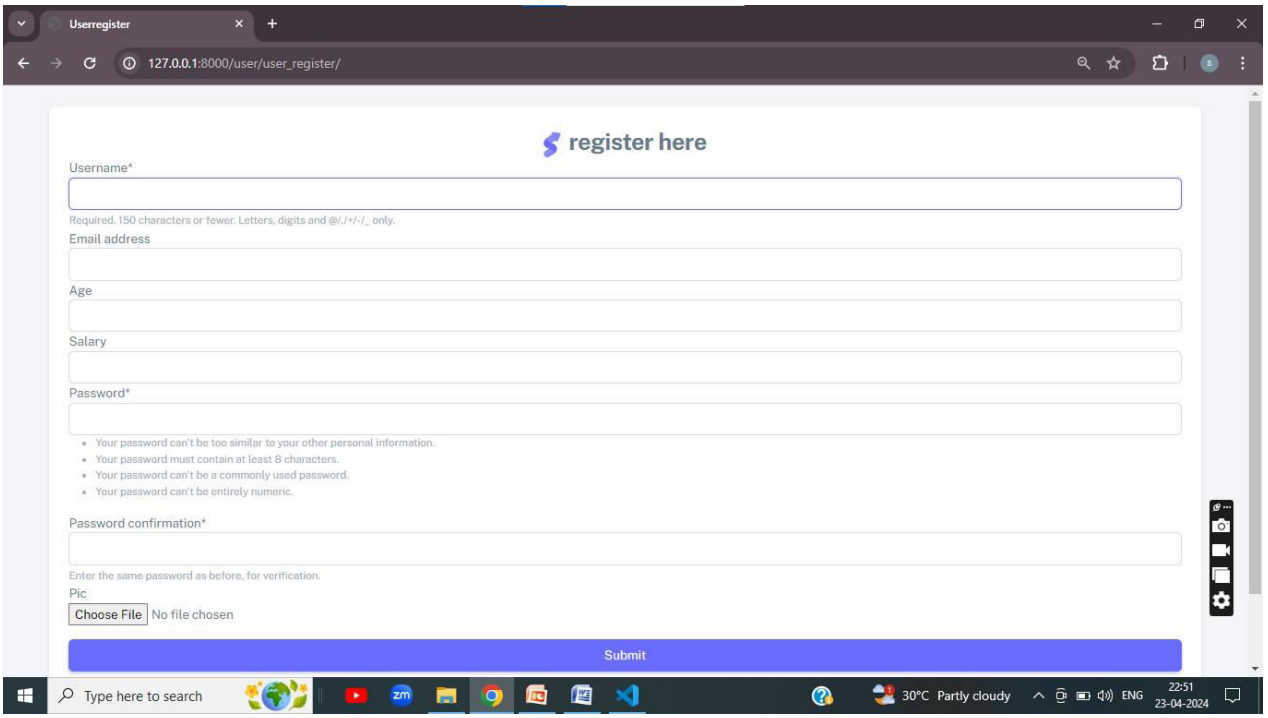
- We provide the scalable website to make sure that every user can access the website in a proper order.
- User likes those type of website which are in one particular order that user cannot wait for the usage of the services.

6.3 FINDING /RESULTS / OUTCOMES

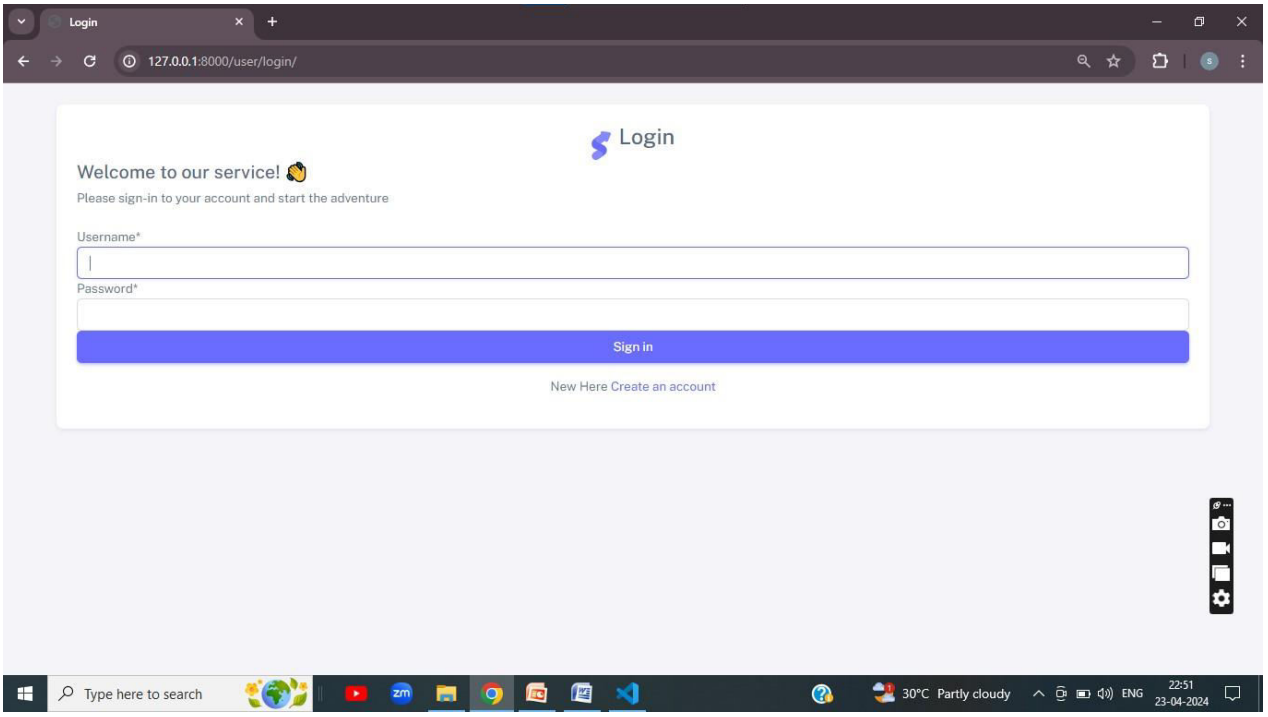
(1) HOME PAGE



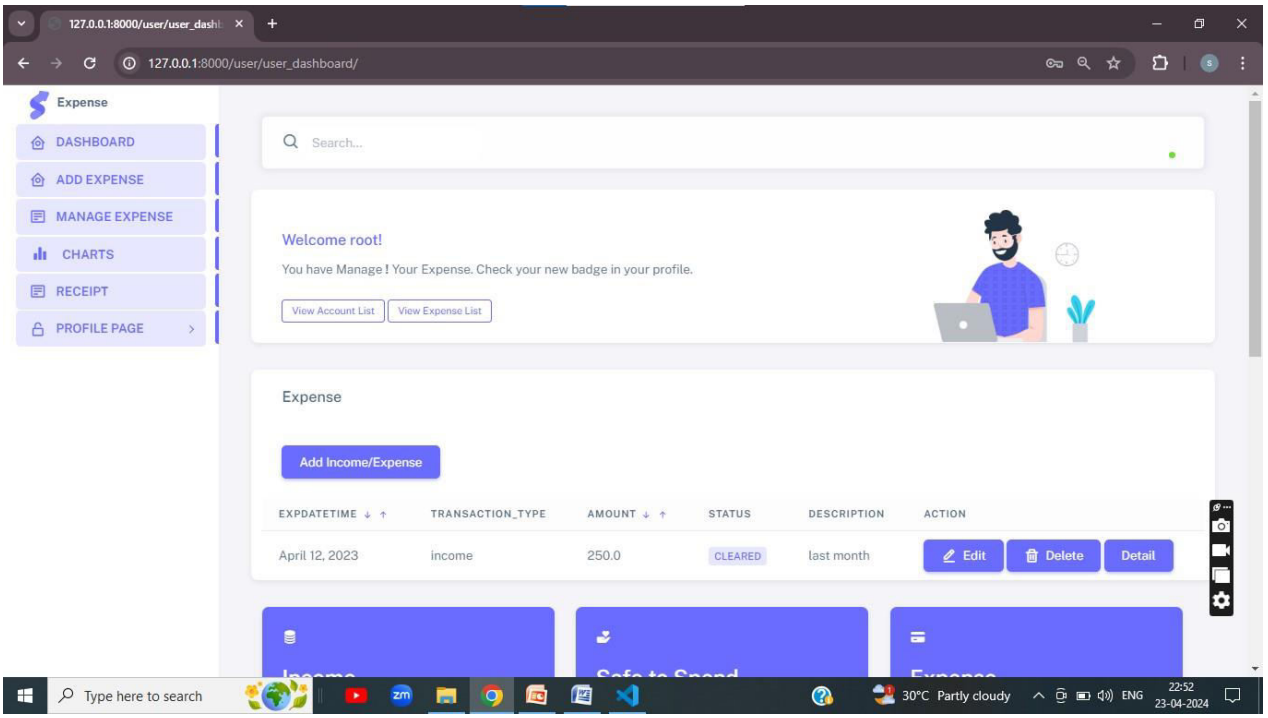
(2) REGISTER PAGE



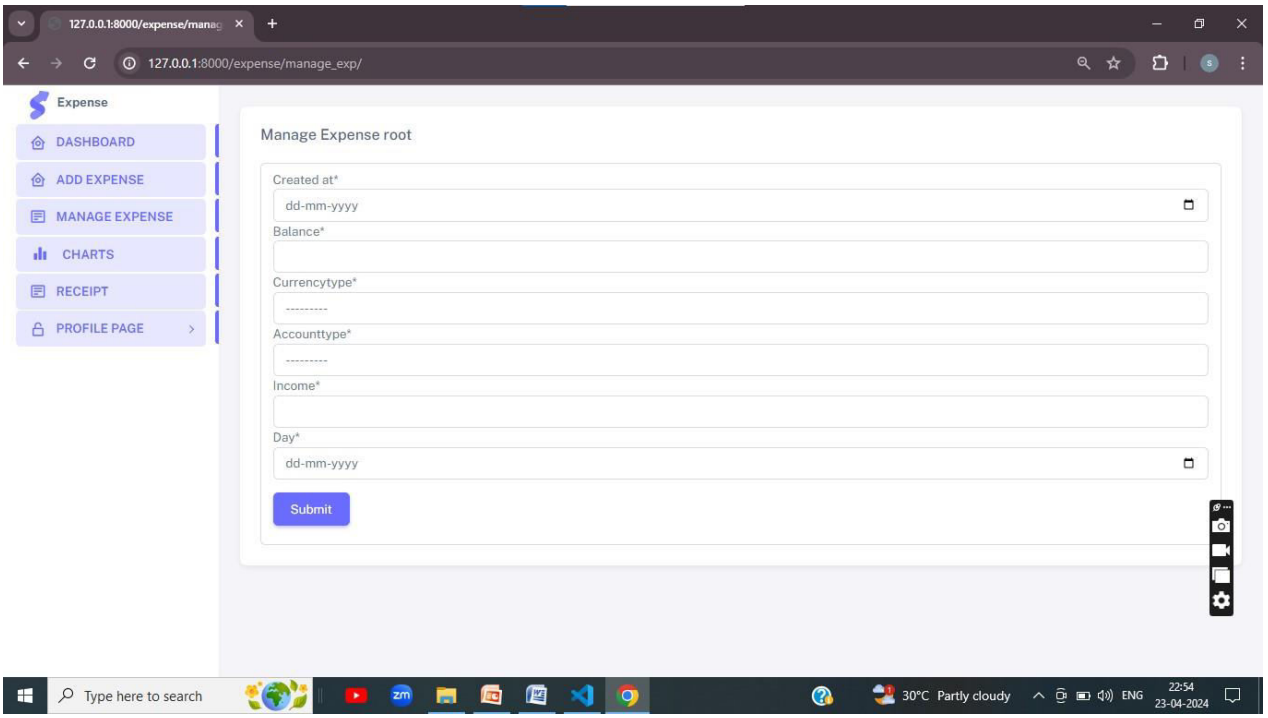
(3) LOGIN PAGE



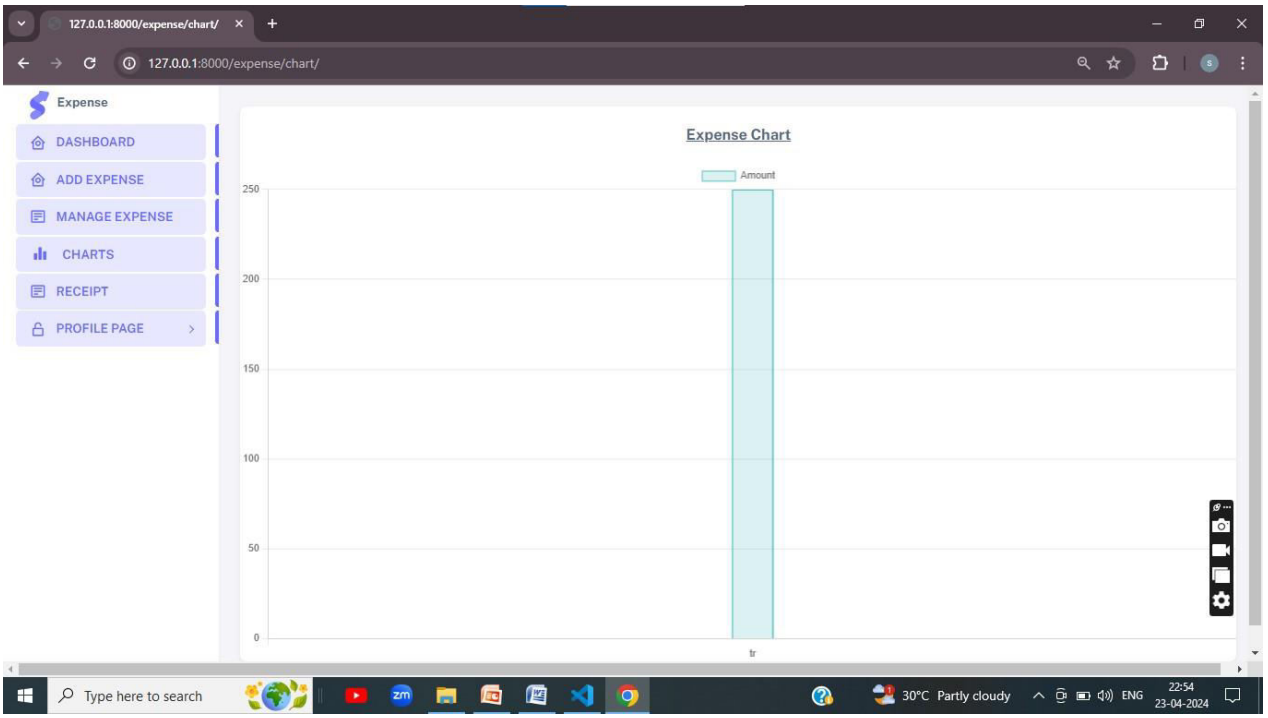
(4) DASHBOARD



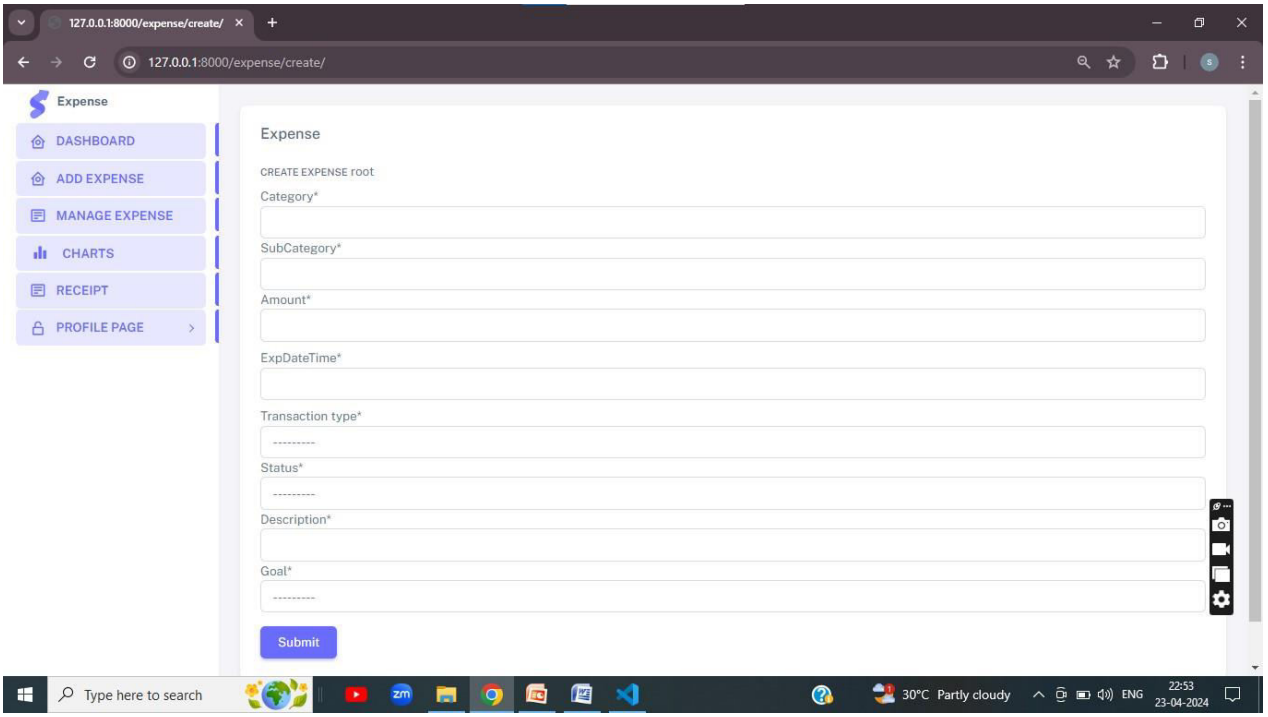
(5)MANAGE EXPENSE



(6) EXPENCE CHART



(7) CREATE EXPENSE



7. TESTING

7.1 TESTING PLAN / STRATEGY

- In this project we have done the manual testing to verify that all our functionality works properly or not. The testing process is carried out when we had completed the implementation of all the functionality So here the testing had been done at the end of the internship.
- In this project, we have done the functional testing that check each functionality works properly or not. All the testing procedure is carried out manually.
- First of all, we create the test cases for each functionality and what should be our expected output should be note down. Then we check all the functionality and check the actual output and compare with expected output. If match, then we can pass the test case else we have to give the remarks that what changes should have to done.

7.2 TEST RESULTS AND ANALYSIS

7.2.1 TEST CASES

Test ID	Test Condition	Expected Output	Actual Output
1	User pages	User can see all expenses an income details	This functionality working proper.
2	User Authentication Functionality	Login, Logout, Create Account should be done properly.	Done Properly all the Authentication functionality
3	Add expense	Properly user can add all the expense details	All the details should be saved properly and should occur in a list
4	Dashboard	User can see all expenses with its categories along with chart and its profile.	All the pages had properly displayed all the details

5	Budget (money left after expense done and salary received)	User should accurate value when expense gets subtracted from income resulting into budget	Budget page working properly.
6	Admin	Admin can see all the register and user entered details. .	Admin managed all the things properly. Admin also added values for some contents for user.

8. CONCLUSION AND DISCUSSION

8.1 OVERALL ANALYSIS OF PROJECT VIABILITIES

During the internship first of all they gave the basic knowledge of programming languages and then they gave the project. In project first of all we have to design the webpages according they have given as per the SRS (Software Requirements Specification) then we have to design the databases for our website. After designing the database, we have to integrate all the webpages with database and lastly, we have to do testing of our website. After completing the project, we have to upload the project to the GitHub.

8.2 PHOTOGRAPHS AND DATE OF SURPRISE VISIT BY INSTITUTE MENTER

➢ Mentor: - Mayank Patel

➢Date: - 2nd April 2024

8.3 DATES OF CONTINUOUS EVALUATION

➢ CE-1

➢ CE-2

8.4 PROBLEM ENCOUNTERED AND POSSIBLE SOLUTIONS

- Occasionally, I encounter issues while fetching data from APIs, specifically related to missing product details, sorting and filtering options. To address this problem, implementing hooks methods in our algorithms could be a viable solution as it would help resolve any concurrency issues.
- Another challenge I faced was retrieving data from various sources such as context method, use state method, includes method, and Slide method.

8.5 SUMMARY OF PROJECT WORK

During Internship they have assign the project name Expense Manager. So, The Expense Management system project aimed to delve into the complexities of money management .The project sought to enhance understanding of financial problems occurs sometimes due to lack of skills of money management.

Conclusion

- After diligent development and thorough testing, we are pleased to announce the successful completion and deployment of our “Expense Manager Website”.
- The project has been meticulously crafted to meet the specified requirements, and we're proud to declare it free of any discernible bugs or errors according to our stringent testing standards. Our journey with this project, titled 'Expense Manager ', has been both enriching and rewarding.
- As we reflect on our accomplishments, we recognize that this is merely the beginning of a much larger endeavor. Just as every successful journey marks the start of a new path, our completion of this project opens doors to further exploration and the pursuit of new goals.
- By centralizing expense tracking, automating manual processes, and providing insightful analytics, these platforms empower users to gain better control over their finances, identify spending patterns, and make informed decisions to achieve their financial goals. Moreover, the user experience and adoption strategies are vital aspects that contribute to the success of expense tracker websites, ensuring that users find the platforms intuitive, valuable, and easy to adopt.

8.6 LIMITATION AND FUTURE ENHANCEMENT

- To enhance the accuracy and efficiency.
- Manual entry of expenses can be time-consuming and prone to errors. Users may find it tedious to input expenses regularly, leading to incomplete or inaccurate data.
- As the organization grows or the volume of expenses increases, the expense management system may face scalability challenges. Performance issues and slowdowns may occur when handling large amounts of data.
- Improve UI and expand the system's functionality to include features such as chatbot ,automated reporting and data visualization.
- Strengthen integration capabilities with accounting software, bank APIs, and other financial platforms for seamless data synchronization and reconciliation.
- By addressing these limitations and incorporating future enhancements, the expense management system can evolve into a more efficient, intelligent, and user-friendly solution that meets the evolving needs of organizations and users.

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