

# Acknowledgement

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To all who have played a role in this journey, we offer our deepest thanks and appreciation.

# Abstract

**TrackIt** is a sophisticated and comprehensive financial management application crafted to streamline the tracking of both income and expenses for individuals and businesses alike. This cutting-edge tool is designed with user-friendliness in mind, offering an intuitive interface that simplifies the process of inputting and categorizing financial transactions. With **TrackIt**, users gain a clear and detailed overview of their financial health, facilitating more informed decision-making and enhanced financial stability.

**TrackIt** excels in providing real-time updates on account balances, ensuring that users always have the most current view of their financial standing. This feature is essential for maintaining an accurate and up-to-date understanding of one's finances. Alongside this, the app offers detailed reports on spending patterns. These reports delve into various aspects of financial behaviour, helping users gain insight into their expenditure habits and making it easier to identify areas where adjustments can be made.

**TrackIt** offers real-time balance updates and detailed reports on spending patterns, helping users understand their financial behaviour and make informed decisions. The app includes budget planning tools and customizable alerts to prevent overspending, while also managing daily, weekly, monthly, and yearly expenses with ease.

Users can categorize expenses, upload images of bills, add location details, and specify amounts. This data is securely stored, allowing users to view and sort expenses by different timeframes. The app also supports sharing bills and managing group expenses, and displays financial data through interactive graphs.

With features like income tracking, expense limits, and automatic calculations, **TrackIt** helps reduce manual work and provides a streamlined approach to financial management. By consolidating all financial information in one place, **TrackIt** empowers users to enhance their savings strategies and achieve financial stability efficiently.

# Introduction

In this project we propose a website known as “**Trackit**” which will help to manage our income and expenses. It also acts as an indicator or reminder to remind the users of updating their expenses and paying their bills for the month. Due to some conflict or some other stress we sometimes forget about the payments and bills that we have to pay. This site will help you to make a note for what are the things we have to pay for by the end of month and/or year like gas bills, phone bill, electricity bill, taxes and some other personal expenses. In this fast-moving world this mobile application and website will be very useful for people who have a family and especially for business persons. Budgeting is an integral part of the society. Budget Tracking involves recording and analysing the incomes and expenses of a person or an organization over a particular period of time. Today, since we are living in a fast paced society, many people are looking forward to efficient ways to budget their time and money. During recent years, some research has been carried out on household budget. It has been noted that in most cases, budget management is being done mentally and never being put on paper which makes Budget Tracking very difficult. Tracking income and expenses is essential for managing personal finances or running a business. Here’s an introduction to help you get started



# Objective and Scope of the Project

## Objective

The primary objective of the "TrackIt" project is to develop a comprehensive personal finance management tool. This tool aims to help users efficiently track their income, expenses, and budget, offering clear insights into their financial status. By doing so, the project seeks to empower users to make informed financial decisions, achieve their financial goals, and maintain overall financial health .

## Scope

The scope of the "TrackIt" project encompasses several key features and functionalities:

### 1. Income and Expense Tracking:

- **Detailed Recording:** Users can record all their income sources, such as salaries, freelance earnings, and investments, in a structured manner.
- **Expense Categorization:** Users can categorize expenses into predefined categories like bills, groceries, entertainment, and more, allowing for better analysis and control.

### 2. Budget Management:

- **Budget Creation:** Users can create monthly, quarterly, or annual budgets tailored to their financial goals and spending habits.
- **Monitoring and Adjustment:** The tool provides real-time updates on budget performance, allowing users to adjust their budgets as needed to stay on track.

### 3. Financial Reports:

- **Comprehensive Reports:** Users can generate detailed reports that summarize income, expenses, and budget performance over specific periods.
- **Visual Representations:** Graphs and charts provide visual insights into financial data, making it easier to understand spending patterns and financial trends.

### 4. Account Management:

- **Multiple Account Support:** Users can manage different types of accounts, such as savings, cash, and investment accounts, within the tool.
- **Account Addition and Deletion:** Users can add new accounts or delete old ones as their financial situation changes.

### 5. User-Friendly Interface:

- **Intuitive Design:** The interface is designed to be user-friendly, ensuring that users with varying levels of financial literacy can navigate and use the tool effectively.

# Technological Background

## HTML (HyperText Markup Language)

HTML provides the foundation for the "TrackIt" web application, structuring content and defining the layout. HTML elements are used to create forms for user input, organize financial data, and display charts and graphs. HTML5 semantic tags, like `<header>`, `<footer>`, `<section>`, and `<article>`, enhance accessibility and SEO, ensuring that the application is both userfriendly and search engine optimized.

## CSS (Cascading Style Sheets)

CSS is used to style the HTML content, enhancing the visual appeal and ensuring a responsive design. With CSS3, advanced features like transitions, animations, and media queries are utilized to create a dynamic and adaptive user interface. The "TrackIt" project uses CSS to maintain a consistent look and feel across different devices, ensuring a seamless user experience.

## JavaScript (JS)

JavaScript adds interactivity and dynamic behavior to the "TrackIt" application. It handles clientside scripting, enabling real-time updates, form validation, and dynamic content manipulation without requiring a page reload. JavaScript libraries and frameworks, such as jQuery or Chart.js, may be used to create interactive charts and graphs that provide visual insights into the user's financial data.

## PHP (Hypertext Preprocessor)

PHP is the server-side scripting language used in "TrackIt" to manage the application's backend. It processes user inputs, interacts with the database, and generates dynamic content. PHP scripts handle tasks such as user authentication, financial data storage and retrieval, and budget calculations. By embedding PHP within HTML, the application can deliver personalized and dynamic web pages based on user interactions.

## Git and GitHub

Version control is managed using Git, a distributed version control system that tracks changes in the source code. GitHub, a platform for hosting Git repositories, is used for collaborative development. It allows multiple developers to work on the "TrackIt" project simultaneously, manage changes, and resolve conflicts efficiently. GitHub also facilitates issue tracking, code reviews, and continuous integration, ensuring that the project maintains high quality and reliability.

## Integration of Technologies

In "TrackIt", HTML structures the content, CSS styles it, JavaScript adds interactivity, and PHP handles server-side logic and database interactions. Git and GitHub ensure efficient version control and collaboration. This combination of technologies creates a robust, user-friendly web application for comprehensive financial tracking, budget planning and data visualization.

# Problem Approach

Many individuals face challenges in managing their finances effectively due to a variety of factors. Here are some key issues that contribute to these difficulties:

1. **Lack of Basic Financial Literacy:** Many people do not have a strong foundation in financial literacy. This means they may not understand fundamental concepts such as budgeting, saving, investing, or the impact of interest rates on debt. Without this knowledge, it's challenging to make informed financial decisions, leading to mismanagement of funds.
2. **Inadequate Tracking of Expenses:** Without proper tracking mechanisms, individuals can easily lose sight of where their money is going. This often leads to overspending, as people may not realize how much they are spending on non-essential items. Tools like expense tracking apps or maintaining a spending diary can help, but many people do not use these tools consistently.
3. **Difficulty in Creating and Sticking to a Budget:** Budgeting is a fundamental aspect of financial management, but many people struggle with it. Creating a realistic budget requires an understanding of income, expenses, and financial goals. Sticking to a budget requires discipline and often involves making difficult choices about spending. Without a budget, it's easy to spend more than one earns, leading to financial instability.
4. **Insufficient Savings for Emergencies and Future Goals:** A significant number of individuals do not save adequately for emergencies or future goals. Emergency savings are crucial to cover unexpected expenses such as medical emergencies or car repairs. Additionally, saving for long-term goals like buying a house, education, or retirement is essential for financial security. Many people, however, find it challenging to save regularly due to various financial pressures and priorities.
5. **Challenges in Managing and Paying Off Debts:** Debt management is another common challenge. Whether it's credit card debt, student loans, or mortgages, managing and paying off debts can be overwhelming without a clear plan. High-interest rates can quickly compound debt, making it even harder to pay off. Developing a debt repayment strategy, such as the snowball or avalanche method, can help, but it requires knowledge and discipline.

## Conclusion

Effective financial management requires a combination of knowledge, tools, and disciplined behavior. Improving financial literacy, consistently tracking expenses, creating and sticking to a budget, saving for emergencies and future goals, and developing a clear debt repayment plan are crucial steps individuals can take to improve their financial health.

## Solution Approach

The "TrackIt" project aims to address these challenges by providing a robust tool that offers:

1. **Comprehensive Tracking:** Users can track all their income sources and expenses in one place.
2. **Budget Planning:** The tool helps users create realistic budgets based on their financial goals and track their progress.
3. **Visual Insights:** Graphs and charts provide clear visual representations of financial data, making it easier to understand spending patterns.
4. **Multiple Accounts Management:** Users can manage different accounts, including savings and cash, and monitor their overall financial health.
5. **User-Friendly Design:** The intuitive interface ensures users can easily navigate and use the tool without extensive financial knowledge.

# Feasibility Study

## Summary:

This comprehensive feasibility study assesses the viability and practicality of **'Track It'**, an online finance tracking website. Our in-depth analysis evaluates technical, economic, operational, and social aspects to determine whether the project is worth pursuing. We examine the project's potential benefits, risks, and challenges to ensure a well-informed decision-making process.

## Technical Feasibility:

Technical feasibility assesses a project's practicality from a technical perspective. It evaluates compatibility with existing systems, available tools, technical expertise, scalability, and performance. A technically feasible solution can be implemented, maintained, and supported within given constraints, ensuring a stable and efficient outcome, and minimizing technical risks and challenges.

- The feasibility to produce outputs in a given time.
- Response time under certain conditions.
- Ability to process a certain volume of the transaction at a particular speed.
- Facility to communicate data.

## Economic Feasibility:

Economic feasibility assesses a project's financial practicality, evaluating costs versus benefits. It considers initial investment, operating costs, revenue, return on investment (ROI), and break-even point. A project is economically feasible if it generates sufficient financial returns to justify investment, ensuring a positive impact on the organization's financial health.

- Cost of Hardware and Software.
- Cost of Software to be acquired to build and run the product is a onetime cost.
- Database is the major part of hardware and software cost.
- Cost saving decision is needed.

## Operational Feasibility:

Operational feasibility assesses a project's ability to be implemented and integrated into existing operations. It evaluates the impact on workflows, processes, and resources, considering factors such as staffing, training, and infrastructure. A project is operationally feasible if it can be successfully executed and sustained within the organization's existing framework.

- If there is sufficient support for the management from the user?
- Will the system be used and work properly if it is being developed and implemented?
- Will there be any resistance from the user that will undermine the possible application benefits?

## Social Feasibility:

Social feasibility assesses a project's acceptance and impact on stakeholders, including users, customers, and communities. It evaluates factors such as social norms, cultural values, and potential resistance to change. A project is socially feasible if it aligns with stakeholder needs and values, ensuring adoption and minimizing negative social consequences.



- **Team Dynamics:** Establish clear roles, respect, and open communication to foster a positive, productive, and inclusive team environment.
- **Shared Goals:** Unite under a common objective, motivating each other to ensure collective success and a sense of accomplishment.
- **Learning Environment:** Encourage experimentation, feedback, and growth, promoting continuous learning, improvement, and innovation.
- **Social Impact:** Assess the project's potential social impact, ensuring it aligns with societal values, needs, and expectations.

## **Conclusion:**

Based on our comprehensive feasibility study, we conclude that '**Track It**' is viable and worth pursuing. Our analysis demonstrates that the project is technically, economically, operationally, and socially feasible, with a clear path forward for successful implementation and operation.

# Software Development Life Cycle (SDLC)

The project will follow the Iterative Waterfall Model, a variant of the traditional Waterfall model that incorporates iterative cycles to allow for refinement and improvements based on feedback and evolving requirements. This model is structured into sequential phases, with each phase providing a distinct focus while allowing for iterative development and testing. Here's how the iterative waterfall model will be applied:

## 1. Feasibility Study

- **Objective:** Evaluate the feasibility of the project in terms of technical, financial, and operational aspects before proceeding to the development phase.
- **Iteration Aspect:** Feasibility findings may be revisited and updated throughout the project to accommodate any changes in scope or constraints.

## 2. Requirements Gathering and Analysis

- **Objective:** Collect and analyse all the requirements for the project. This involves understanding user needs, business requirements, and any constraints.
- **Iteration Aspect:** Requirements may be revisited and refined through iterations to ensure accuracy and completeness.

## 3. System Design

- **Objective:** Develop the system architecture and design based on the gathered requirements. This includes both high-level and detailed design.
- **Iteration Aspect:** Design may be iteratively updated based on feedback and new insights gained during the development phase.

## 4. Implementation

- **Objective:** Code the system according to the design specifications. This phase involves developing the software components and integrating them.
- **Iteration Aspect:** Iterative cycles involve implementing features, then reviewing and revising them based on testing and feedback.

## 5. Testing

- **Objective:** Test the system to ensure that it meets the specified requirements and is free of defects. This phase includes unit testing, integration testing, and system testing.
- **Iteration Aspect:** Testing is performed iteratively, with each iteration focusing on different aspects of the system. Feedback from testing leads to revisions and improvements.

## 6. Deployment

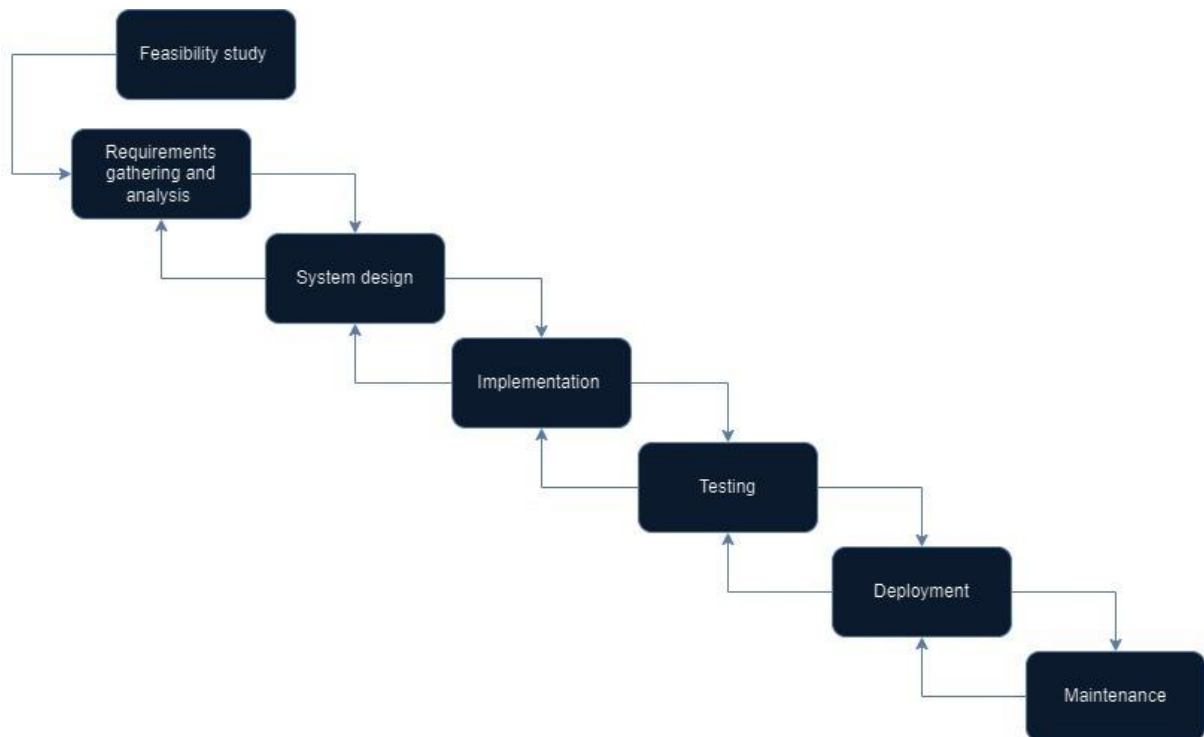
- **Objective:** Deploy the system to the production environment, making it available to end-users.
- **Iteration Aspect:** Deployment may occur in stages, with iterative releases to gather user feedback and make incremental improvements.

## 7. Maintenance

- **Objective:** Provide ongoing support and maintenance to address issues, perform updates, and ensure the system continues to operate effectively.
- **Iteration Aspect:** Maintenance includes iterative updates and enhancements based on user feedback and changing requirements.

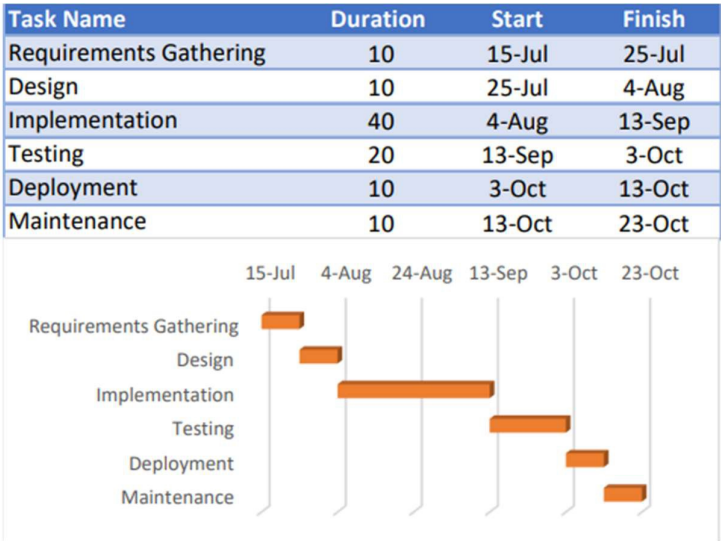
The iterative nature of this model allows for flexibility and responsiveness to changes, making it suitable for projects where requirements may evolve or become clearer over time. Each iteration

provides an opportunity to refine the project, ensuring better alignment with user needs and expectations.



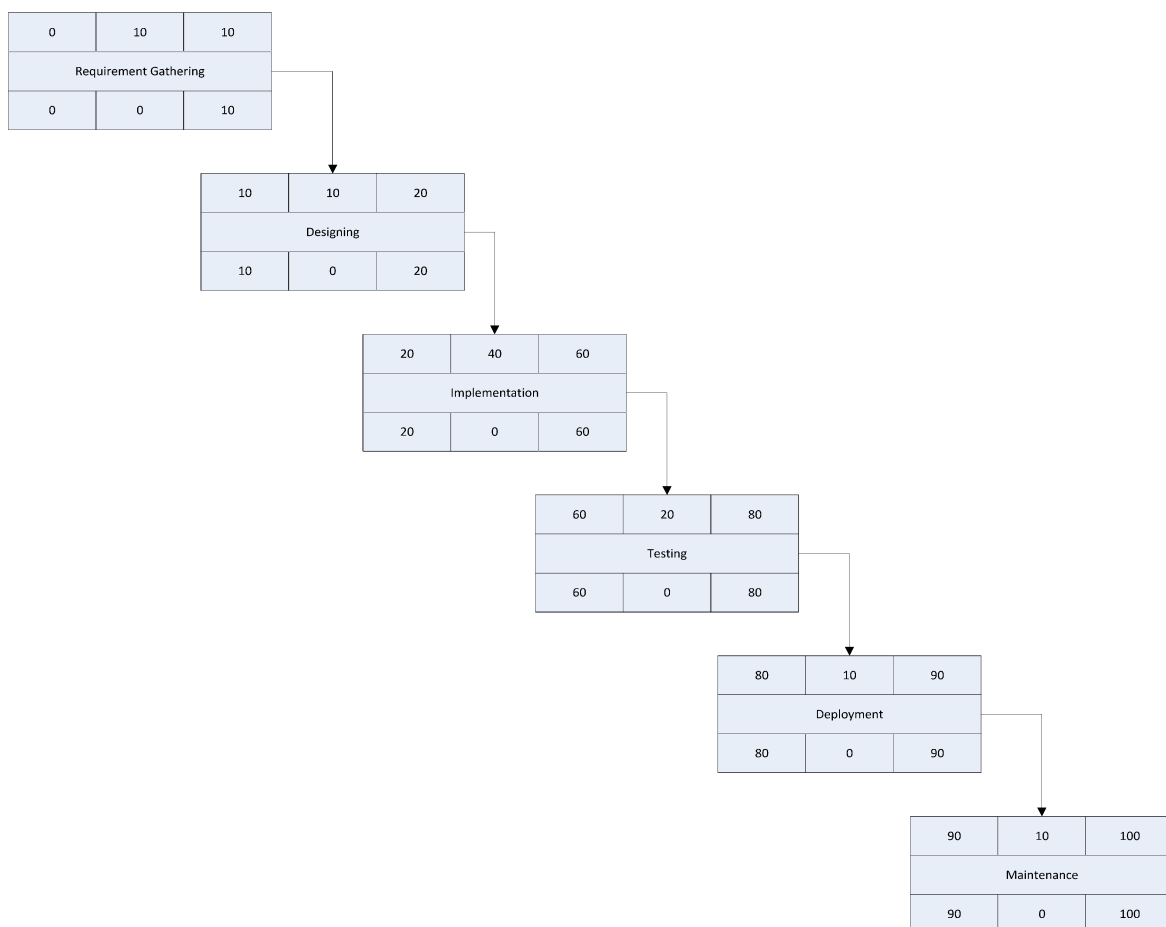
# Gantt Chart

A Gantt chart is a visual project management tool that provides a clear overview of a project's timeline. It represents tasks as horizontal bars, where the length of each bar corresponds to the task's duration and its position indicates the start and end dates. Gantt charts excel at displaying task dependencies, milestones, and resource allocation. This visual representation makes it easy to identify potential bottlenecks, track progress, and make adjustments to the project schedule. By providing a clear picture of the project timeline, Gantt charts facilitate effective communication among team members and stakeholders



## Pert Chart

A PERT (Program Evaluation and Review Technique) chart is a network diagram used to analyze and represent the tasks involved in completing a project. It focuses on identifying the critical path, which is the sequence of tasks that directly impact the project's overall duration. PERT charts use nodes to represent events or milestones and arrows to indicate tasks and their dependencies. By visualizing task relationships, PERT charts help project managers identify potential delays, assess the impact of uncertainties, and calculate the probability of project completion within a specific timeframe. This information is invaluable for making informed decisions, allocating resources efficiently, and managing project risks.



# Software Requirements Specification (SRS)

## Purpose

The purpose of this document is to describe the software requirements for the "TrackIt" finance tracking website. This website is designed to help users manage their income and expenses, provide reminders for bill payments, and offer insights into their financial status through detailed reports and visualizations. The intended audience includes end-users, developers, and project managers.

## Scope

The scope of the "TrackIt" project encompasses the development of a personal finance management tool that offers the following functionalities:

- Income and Expense Tracking
- Budget Management
- Financial Reports
- Account Management
- User-Friendly Interface

## Product Perspective

TrackIt is a standalone web application designed to help users manage their personal finances. It integrates functionalities such as income and expense tracking, budget management, financial reporting, and account management to provide a comprehensive personal finance management solution.

## Product Functions

- **Income and Expense Tracking:** Users can record and categorize their income and expenses.
- **Budget Management:** Users can create, monitor, and adjust budgets.
- **Financial Reports:** Users can generate detailed financial reports with visual representations.
- **Account Management:** Users can manage multiple accounts and their details.
- **User Authentication:** Users can register, log in, and manage their accounts securely.

## Functional Requirements

### 1. User Authentication and Authorization

- Users must be able to register and log in to the website.
- User details must be encrypted during registration.
- There will be two types of users: Admin and User.

### 2. Income and Expense Tracking

- Users can record all their income sources (e.g., salaries, freelance earnings, investments).
- Users can categorize expenses (e.g., bills, groceries, entertainment).

### **3. Budget Management**

- Users can create monthly, quarterly, or annual budgets.
- The system provides real-time updates on budget performance.
- Users can adjust their budgets as needed.

### **4. Financial Reports**

- Users can generate detailed reports summarizing income, expenses, and budget performance.
- The system provides visual representations (graphs and charts) of financial data.

### **5. Account Management**

- Users can manage multiple accounts (e.g., savings, cash, investment accounts).
- Users can add new accounts or delete old ones.

## **Non-Functional Requirements**

### **1. Usability**

- The interface must be intuitive and easy to navigate.
- The design should cater to users with varying levels of financial literacy.

### **2. Security**

- All user data must be encrypted.
- The system must adhere to data protection regulations.

## **Software and Hardware Requirements**

### **1. Software Requirements**

- **Operating System:** Windows, macOS, or Linux for development.
- **Web Server:** Apache.
- **Database:** MySQL.
- **Programming Language:** HTML, CSS, JavaScript, PHP.
- **Browser Compatibility:** Latest versions of Chrome, Firefox, Safari, and Edge.
- **Development Tools:** Visual Studio Code or any preferred IDE, Git for version control.

### **2. Hardware Requirements**

- **Processor:** Intel Core i3 or higher.
- **RAM:** 4GB or higher.
- **Storage:** 128GB or higher.

## Cost analysis is done by COCOMO Model

- Taking software project as organic type as team size is adequately small, the problem is well understood and has been solved in the past and also team members have nominal experience regarding the problem.
- a, b, c and d are constants for organic type system and the corresponding values are shown below:

Values			
a	b	c	d
2.4	1.05	2.5	0.38

- KLOC- Kilo Lines of Codes is the estimated size of the software product.
- EAF - Effort Adjustment Factor. The factors and the corresponding values for developing this project are shown below, considering the values are high for organic type system below:

Factors	Values
Software reliability(f1)	1.0
Application Database(f2)	1.0
Product complexity(f3)	1.0
Runtime Performance(f4)	1.0
Memory Constrints(f5)	1.0
Volatility of Virtual Machine(f6)	1.0
Turnaround time(f7)	1.0
Analyst capability(f8)	1.0
Application experience(f9)	1.13
S/w Engineer capability(f10)	1.0
Virtual machine experience(f11)	1.0
Programming language experience(f12)	1.07
Application of s/w engineering methods(f13)	1.0
Use of software tools(f14)	1.0
Required development schedule(f15)	1.0

### COCOMO 1

Here LOC = 2000

Therefore KLOC =  $2000/1000 = 2$



## For Organic:

### Effort:

$$a \times (\text{KLOC})^b \text{ PM}$$

$$= 2.4 \times 2^{1.05} \text{ PM}$$

$$= 4.969271 \text{ PM}$$

### Development Time:

$$c \times (\text{Effort})^d \text{ Months}$$

$$= 2.5 \times (4.969271)^{0.38} \text{ Months}$$

$$= 4.5976 \text{ Months}$$

$$\approx 5 \text{ Months}$$

## COCOMO 2:

### Effort Adjustment Factor (EAF):

$$= f_1 \times f_2 \times f_3 \times f_4 \times f_5 \times f_6 \times f_7 \times f_8 \times f_9 \times f_{10} \times f_{11} \times f_{12} \times f_{13} \times f_{14} \times f_{15}$$

$$= 1.0 \times 1.0 \times 1.0 \times 1.0 \times 1.0 \times 1.0 \times 1.0 \times 1.0 \times 1.13 \times 1.0 \times 1.0 \times 1.07 \times 1.0 \times 1.0 \times 1.0$$

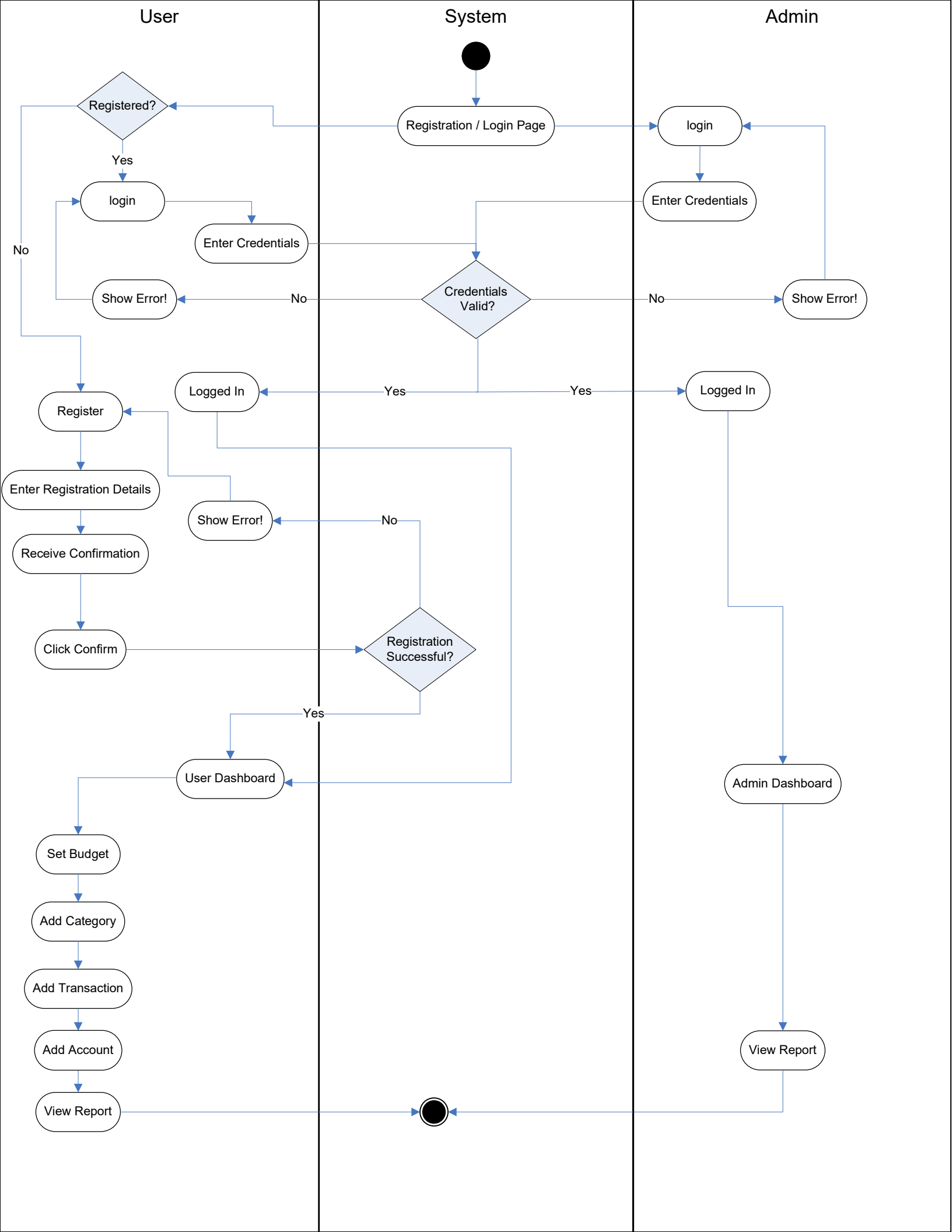
$$= 1.2091$$

### Effort:

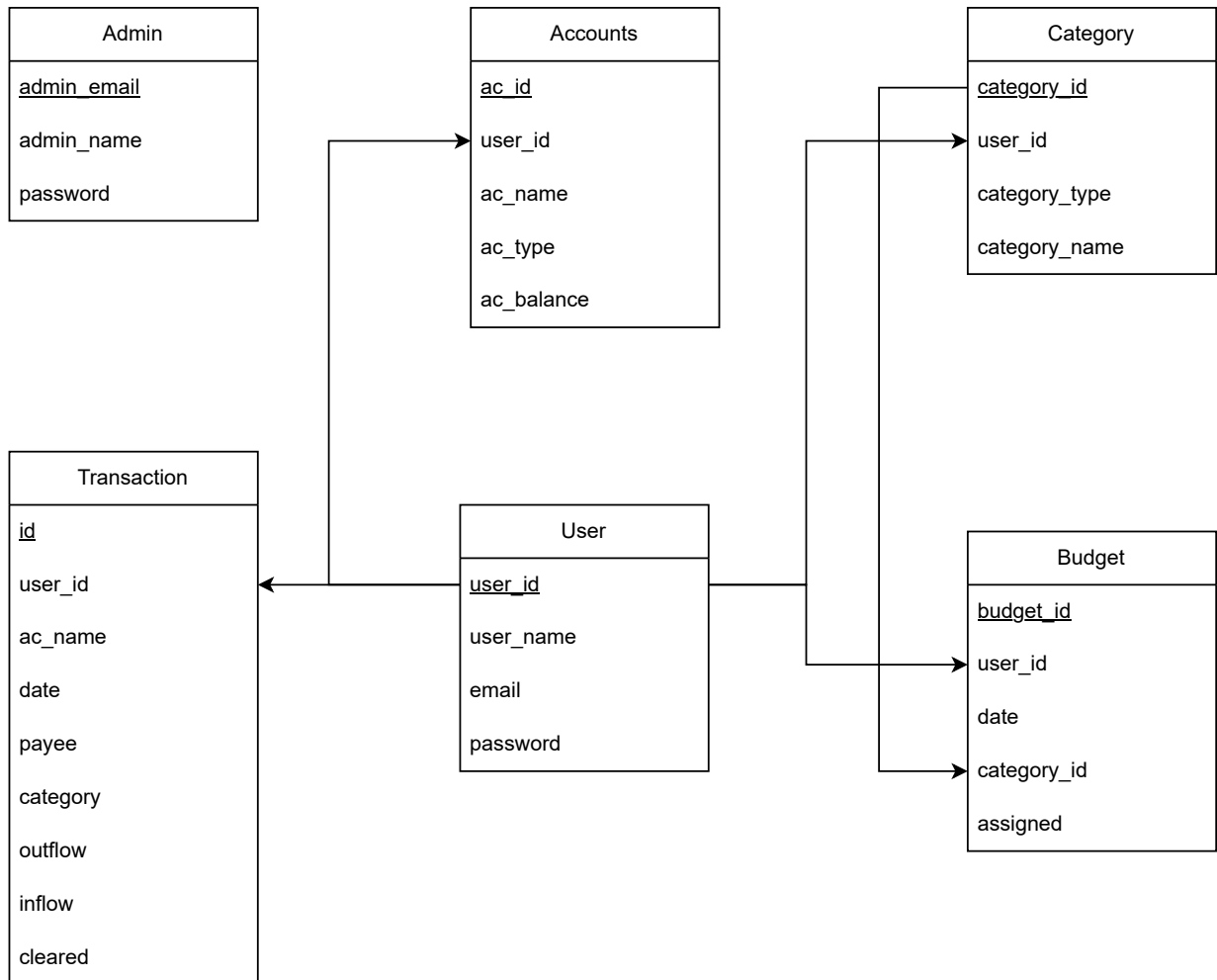
$$= 3.2 \times (\text{KLOC})^{1.05} \times \text{EAF PM}$$

$$= 3.2 \times (2)^{1.05} \times 1.2091 \text{ PM}$$

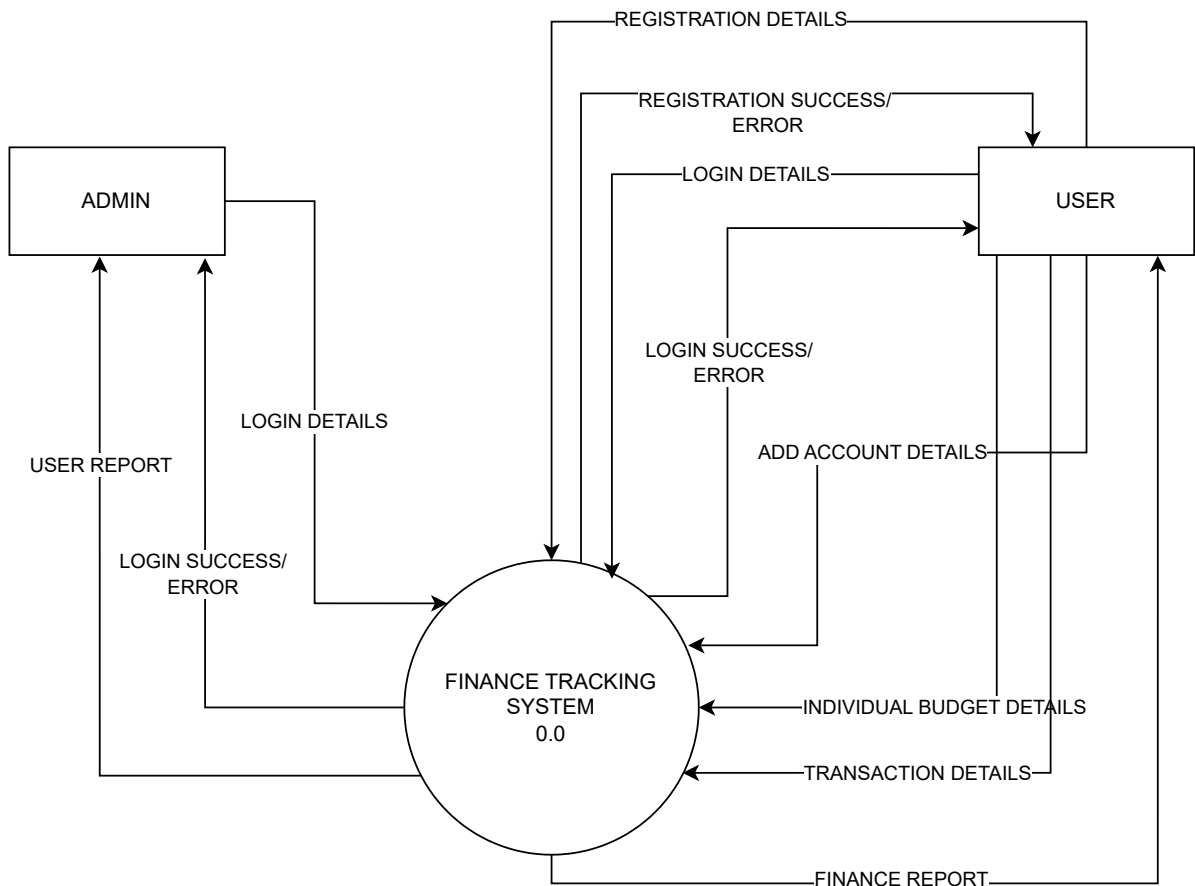
$$= 8.0111 \text{ PM}$$



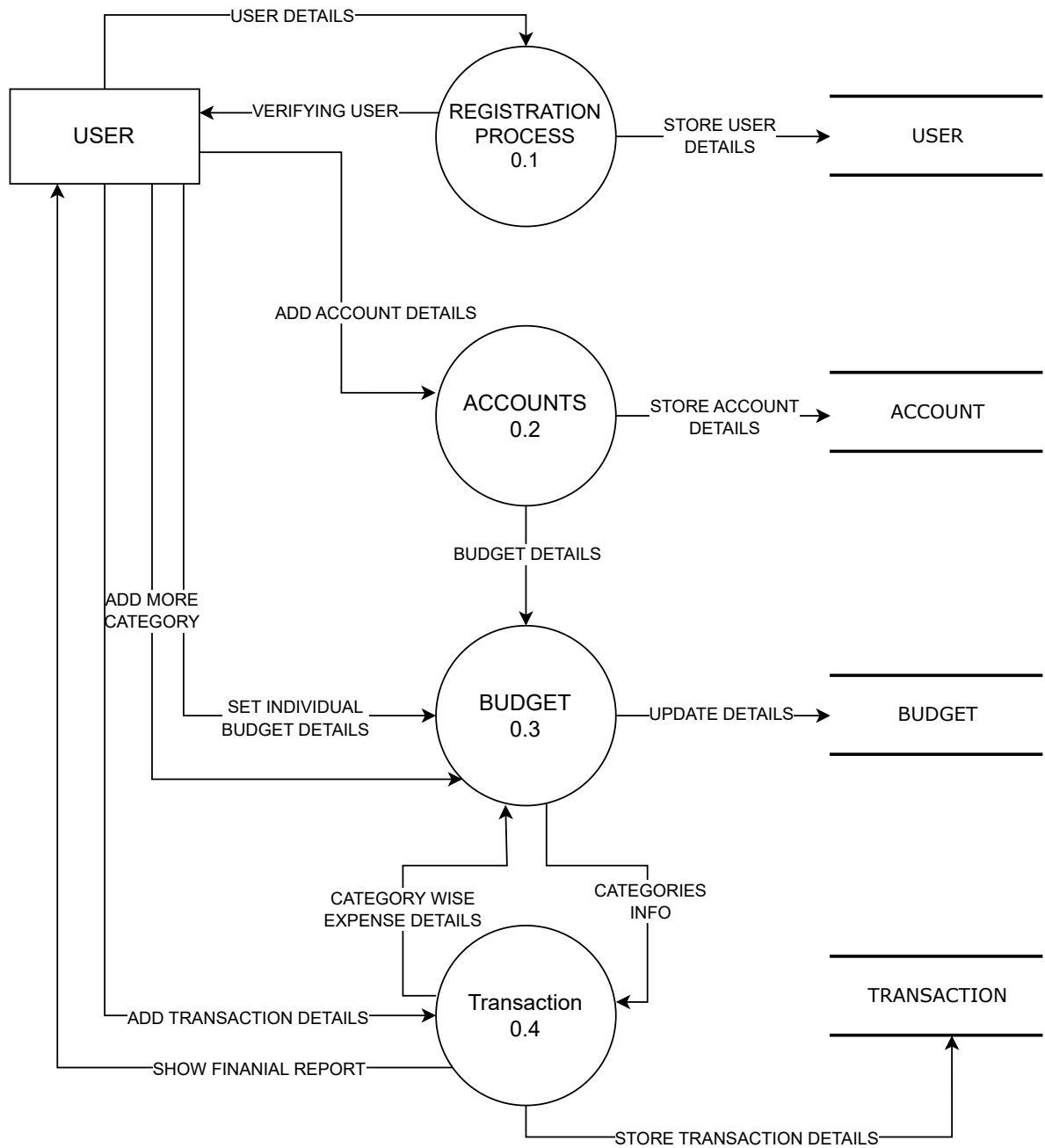
## Database Schema



## Level 0 DFD



## Level 1 DFD



## ER Digram

