

**J2EE Web Components**

**Project Phase 1**

**Section: ITE-5332-0NA**

**Expense Tracker Application**

***Team Composition:***

***Team Lead:***

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# 1. Business Case Requirements

## 1.1 Problem Statement:

Managing personal finances is a challenging task for many individuals. Often, people find it difficult to track their expenses, categorize spending, and stay within their monthly budgets. Traditional methods such as keeping a paper ledger or using spreadsheets are cumbersome and prone to human error. Without a structured approach, it becomes hard for individuals to understand their spending habits and control their finances.

The **Expense Tracker Application** seeks to address this problem by providing a convenient, intuitive, and reliable platform for users to track and manage their daily expenses, categorize them, and set monthly budgets. This will empower users to gain a clear understanding of their financial situation and improve their financial planning.

## 1.2 Target Audience:

The target audience for this application includes:

- **Young Professionals:** Individuals who are beginning to manage their finances independently.
- **Families:** People managing household expenses, budgeting for long-term savings, and investments.
- **Students:** College students managing their personal finances with limited budgets.
- **Freelancers:** Independent workers who need to track irregular income and expenses.

The primary needs of the target audience are:

- Easy tracking and categorization of expenses.
- Clear visualization of their financial status through graphs and charts.
- A simple tool to set and manage monthly budgets.

- Ability to review, edit, or delete expenses.

### **1.3 Proposed Solution:**

The **Expense Tracker Application** provides the following features:

#### **A. User Management**

- User Registration
- User Login
- Password stored securely (hashed)
- Session management (Logout)

#### **B. Expense Tracking**

**Add, Edit, and Delete Expenses:** Users can log their expenses in real-time, making it easy to track their financial activities

- Add Expense (Amount, Category, Date, Notes)
- Edit Expense
- Delete Expense
- View List of Expenses
- Categorize Expenses (e.g., Food, Transportation, Entertainment) - to better understand spending patterns
- Set Monthly Budgets for Each Category - helping them stay on track and avoid overspending
- View Expense Reports (Monthly/Weekly) - reports on their spending habits
- Notifications & Alerts for Budget Limits - for users to keep track of budget limits or when they are approaching a budget limit

#### **C. Income Tracking**

- Add Income Source & Amount

#### **D. Dashboard**

- Total Income vs. Expenses (Charts and Graphs)
- List of Recent Transactions

The solution will be developed using **Java EE (J2EE)** for backend services, ensuring scalability and reliability. The front end will include user-friendly interfaces for a smooth user experience.

## **1.4 Scope:**

- **Mandatory Core Functionalities:**

- User registration and login
- Add, edit, and delete expenses
- Categorize expenses
- Set and track monthly budgets
- Visual reports and charts on expenses
- Notification and alert system

- **Optional Enhancements:**

- Expense export to CSV or PDF
- Multi-user accounts for shared household or family budgets
- Integration with bank APIs for automated expense tracking
- Cloud synchronization for accessing the app across devices

## 2. Business Case Justification

### 2.1 Relevance:

The **Expense Tracker** application is highly relevant in today's fast-paced world, where financial literacy is key to managing personal and household finances. With an increasing number of people living paycheck to paycheck, there is a strong demand for tools that allow individuals to track their spending, manage budgets, and save efficiently. The application fulfills this need by providing a user-friendly tool for financial management.

### 2.2 Expected Outcomes:

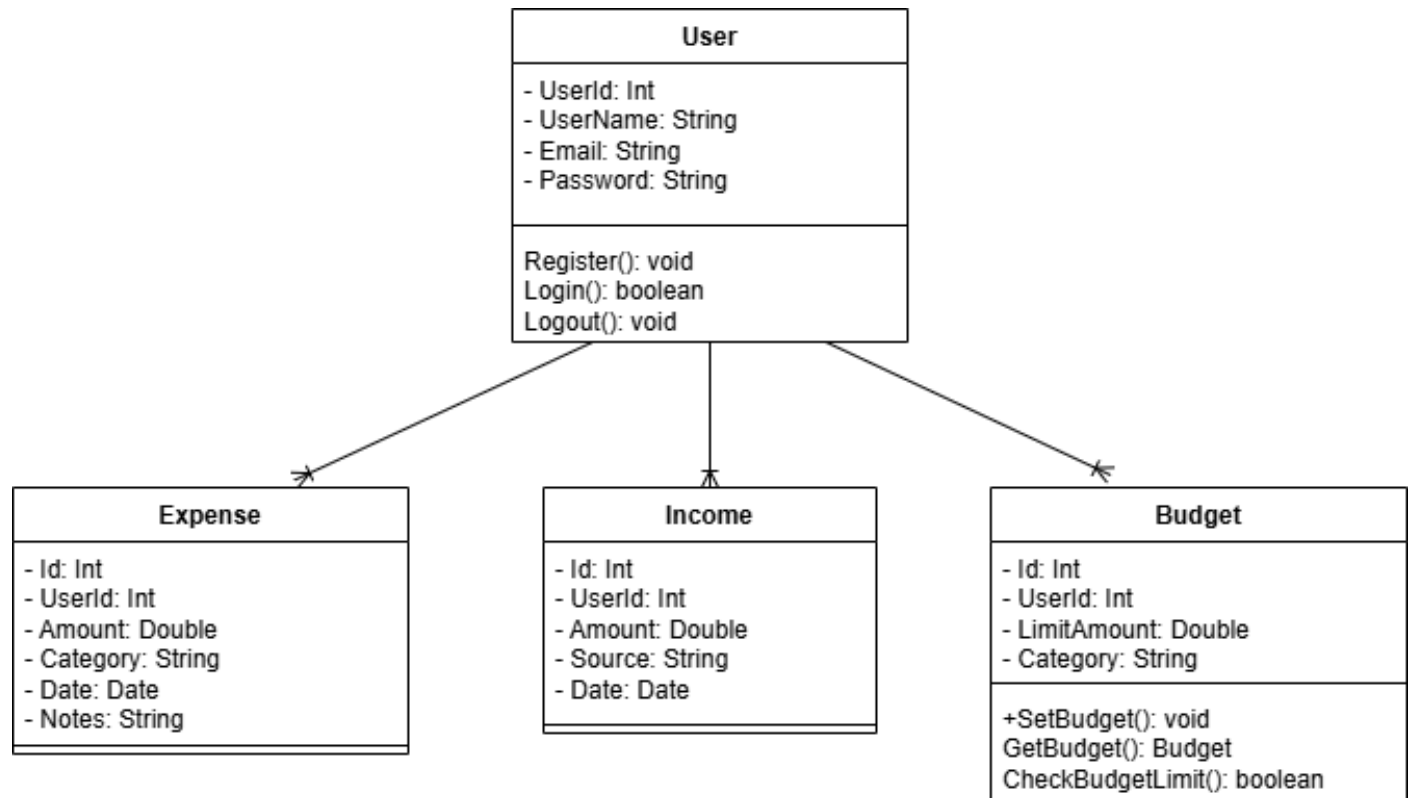
- **Increased Financial Awareness:** Users will gain better insight into their spending habits, allowing them to make informed financial decisions.
- **Better Budget Management:** The application will help users track their budget and prevent overspending, contributing to better financial health.
- **User Retention:** With real-time updates and visual reports, users are more likely to engage regularly with the application to track and manage their finances.

### 2.3 Feasibility:

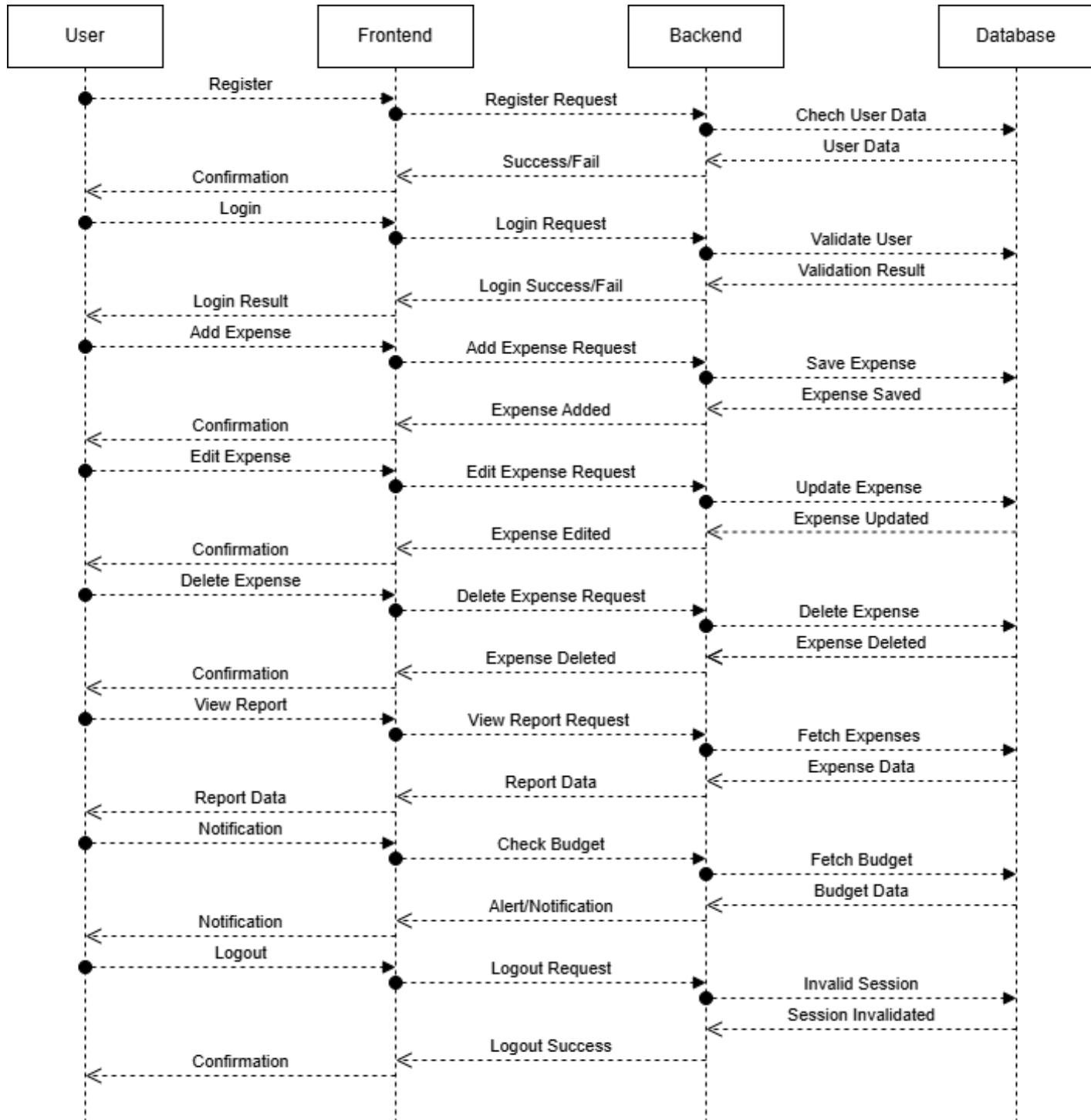
The project is feasible within the allotted timeline and resources. Java EE (J2EE) will provide a robust backend that can scale with the increasing number of users and data. The front-end interface will be simple and intuitive, ensuring that users can navigate the app without a steep learning curve. With the available resources, the core functionalities can be developed within a few months, and additional features can be rolled out in phases.

### 3. UML Diagrams

#### 3.1 Class Diagram:



### 3.2 Sequence Diagram:



# J2EE Application Level Sequence Diagram

