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Student Kit

Objective

The primary objective of developing an Expense Tracker is to create a robust and efficient software solution that automates and streamlines the management of personal finances, allowing users to track their expenses, manage budgets, and gain insights into their spending habits.

Requirements Specification (RS)

A Requirements Specification (RS) document is a critical component of software development projects. It outlines the detailed functional and non-functional requirements of the system that needs to be developed. Below is an example of how you can structure an RS document for an Expense Tracker:

Sr No.	Requirement	Essential/Desirable	Description	Remarks
RS1	User Registration	Essential	Allow users to create a new account	
RS2	User Login	Essential	Enable users to log in to the system	
RS3	View Expense Summary	Essential	Provide a summary of all recorded expenses	

RS4	Add New Expense	Essential	Enable users to add new expenses with details	
RS5	Update Expense Details	Essential	Allow users to update existing expense records	
RS6	Set Budget	Essential	Allow users to set and manage budgets for different categories	
RS7	Generate Expense Reports	Essential	Generate reports for a chosen period	
RS8	Data Visualization	Essential	Provide charts/graphs to visualize spending habits	
RS9	Notification System	Desirable	Notify users about budget limits or reminders for expenses	
RS10	Data Security	Essential	Ensure security and privacy of user data	

Database Fields Specification

Customer Table

N o .	Field Name	Range of Valid Values for the Field	Remarks
1	User_ID	1 to 10000	Primary field
2	First_Name	Up to 15 characters in length	Special characters like underscore are not allowed.
3	Last_Name	Up to 15 characters in length	
4	Email_ID	Up to 30 characters in length with valid email rules	
5	Password	Up to 15 characters in length	Special characters like underscore are allowed.
6	Phone_No	1 to 10 integers in length	Special characters are not allowed.
7	Created_At	Date	Account creation date
8	Updated_At	Date	Last updated date

Expense Table

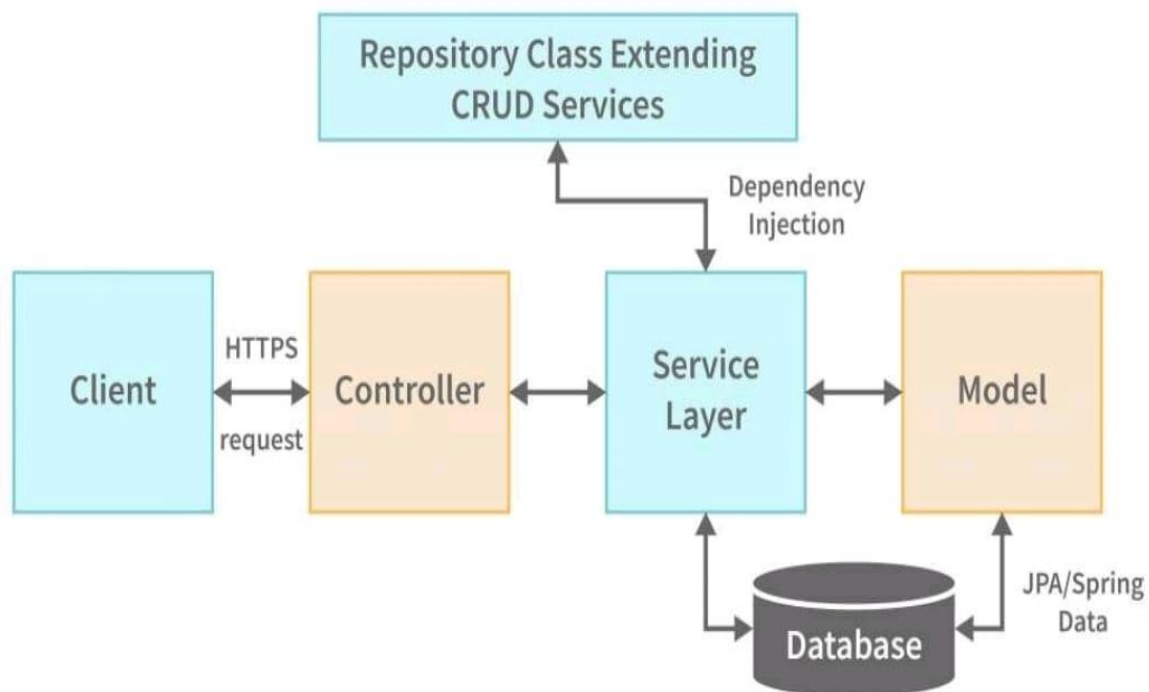
No.	Field Name	Range of Valid Values for the Field	Remarks
1	Expense_ID	Alphanumeric, unique identifier	Unique identifier for each expense
2	User_ID	Alphanumeric	Foreign key referencing User_ID
3	Amount	Decimal, non-negative values	Total amount of the expense
4	Category	String (e.g., "Food", "Transport", "Utilities")	Category of the expense
5	Date	Date	Date of the expense
6	Description	Up to 100 characters in length	Description of the expense

Budget Table

No.	Field Name	Range of Valid Values for the Field	Remarks
1	Budget_ID	Alphanumeric, unique identifier	Unique identifier for each budget
2	User_ID	Alphanumeric	Foreign key referencing User_ID
3	Category	String (e.g., "Food", "Transport")	Category for the budget
4	Amount	Decimal, non-negative values	Total budget amount
5	Start_Date	Date	Start date for the budget
6	End_Date	Date	End date for the budget

High Level/Detailed Design (HLD/DD)

Overview of the system



Design Components

The system is based on various screens based on the role of the user in organization

Customer User:

- **Login/Registration Screen**
- **Dashboard/Home Screen**
- **Profile Management**
- **Expense Management**
- **Expense Categories Management**
- **Billing and Invoices**
- **Payment Screen**
- **Payment History**
- **Budget Management**
- **Expense Statistics**

- **Notifications and Alerts**
- **Support and Contact**
- **Logout**
- **Settings**
- **Feedback and Surveys**

Organization User:

- **Admin Login Screen**
- **Admin Dashboard/Home Screen**
- **User Management**
- **Expense Management (for Users)**
- **Category Management**
- **Reports and Analytics**
- **User Access Control**
- **System Configuration**
- **Security and Auditing**
- **Notifications and Alerts**
- **Customer Support Tickets**
- **Maintenance and Updates**
- **Payment Processing**
- **Content Management (Documentation/Help)**
- **Logout**

Test-Plan (TP)

The test-plan is basically a list of test cases that need to be run on the system. Some of the test cases can be run independently for some components (report generation from the database, for example, can be tested independently) and some of the test cases require the whole system to be ready for their execution. It is better to test each component as and when it is ready before integrating the components.

It is important to note that the test cases cover all the aspects of the system (ie, all the requirements stated in the RS document).

Se No.	Test Case Title	Description	Expected Result	Requirement in RS Table	Results

1	User Registration	Test the user registration process	User can successfully create a new account	RS_1	Passed
2	User Login	Test user login functionality	User can log in using valid credentials	RS_2	Passed
3	View Expense	Test viewing expense details	User can view their expense details	RS_3	Passed
4	Manage Expense Categories	Test managing expense categories	User can add, edit, and delete expense categories	RS_4	Passed
5	Update Contact Information	Test updating contact information	User can successfully update their contact information	RS_5	Passed
6	Generate Expense Report	Test generating an expense report for a specific period	System generates an expense report for the chosen period	RS_6	Passed
7	Payment Processing	Test the payment processing functionality	System processes the payment successfully	RS_7	Passed
8	Notification System	Test the notification system for new expenses and limits	Users receive notifications for new expenses and budgeting limits	RS_8	Passed

9	Data Security	Test the data security measures	User data is secure and not accessible by unauthorized users	RS_9	Passed
10	Budgeting	Test the budgeting functionality	User can set and manage expense limits successfully	RS_10	Passed