



Project Title: Web-Based Expense and Income Management System

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1. Introduction

1.1 Purpose

This system enables users to efficiently track, manage, and analyze their financial transactions. It includes graphical insights for better planning and TDS optimization.

1.2 Document Conventions

- Web app refers to the web-based system.

1.3 Intended Audience

- General users like college students managing finances
 - Freelancers & working professionals
 - Taxpayers seeking TDS optimization
-

2. System Overview

2.1 Product Perspective

- Web-based application for tracking income/expenses.
- Users can manually enter financial data.
- Each transaction includes: amount, type, category, date, description.

2.2 User Classes

- Basic Users: For expense tracking.
- Tax-conscious Users: Looking for TDS help.

2.3 Operating Environment

- Browser-based
- Platforms: Windows/macOS/Linux
- Backend: Node.js
- Database: MySQL

2.4 System Design

- Frontend: React.js, CSS
 - Backend: Node.js
 - **Features:**
 - Responsive UI
 - Dashboard with charts
 - Secure auth (Login/Signup)
 - TDS help
-

3. Functional Requirements

3.1 Dashboard

- Shows total income
- Shows total expenses
- Shows total savings
- Visual pie and bar charts of the spending breakdown

3.2 Expense & Income Management

- **Add Income:** Fields: amount, date, description
- **Add Expense:** Fields: amount, date, description, category (e.g. Food, Rent, Health)
- **Edit/Delete:** Modify or remove transactions with confirmation

3.3 TDS Optimization

- Analyze income sources (salary, freelance, etc.) [under development]

3.4 Investment Recommendations

- Under development
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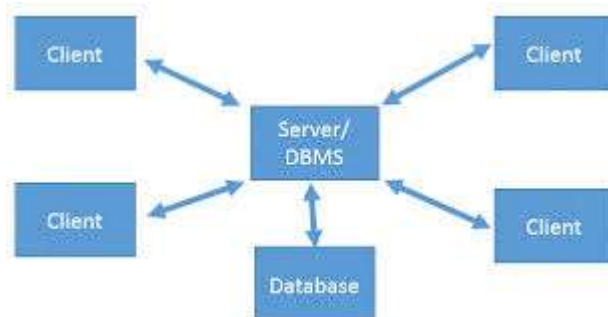
4. Non-Functional Requirements

- **Performance:** System should load dashboard in under 2 seconds for users.
 - **Scalability:** Should handle multiple concurrent users.
 - **Maintainability:** Modular code for easy bug fixes and updates.
 - **Portability:** Accessible across all major browsers and operating systems.
 - **Usability:** Simple UI.
-

5. Technical Architecture

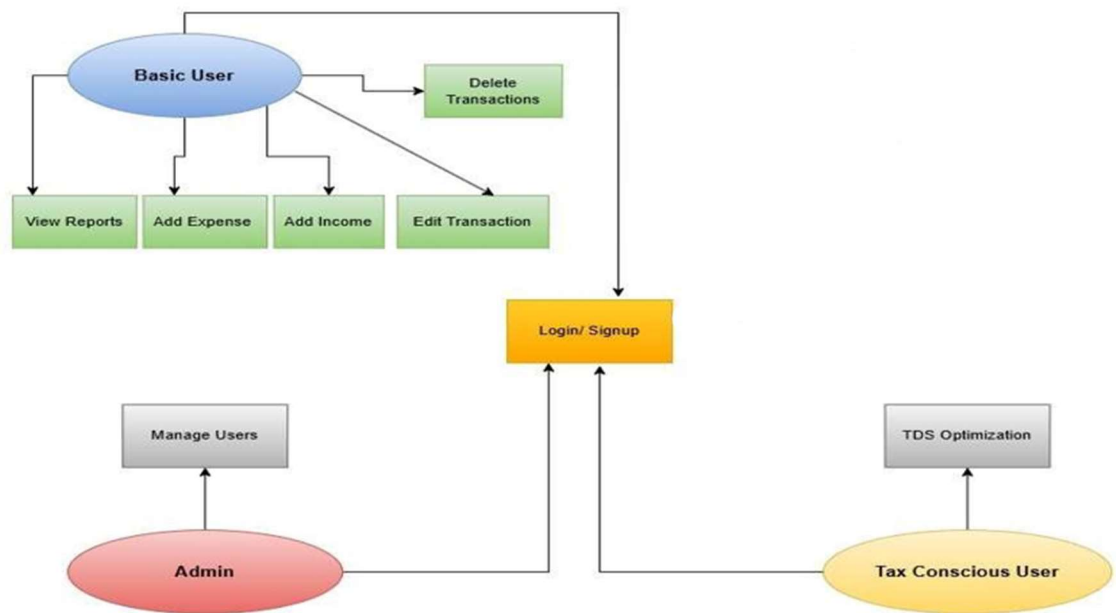
- **Client (Frontend):**
React.js, CSS
- **Server (Backend):**
Node.js
- **Database:**
MySQL

Diagram:

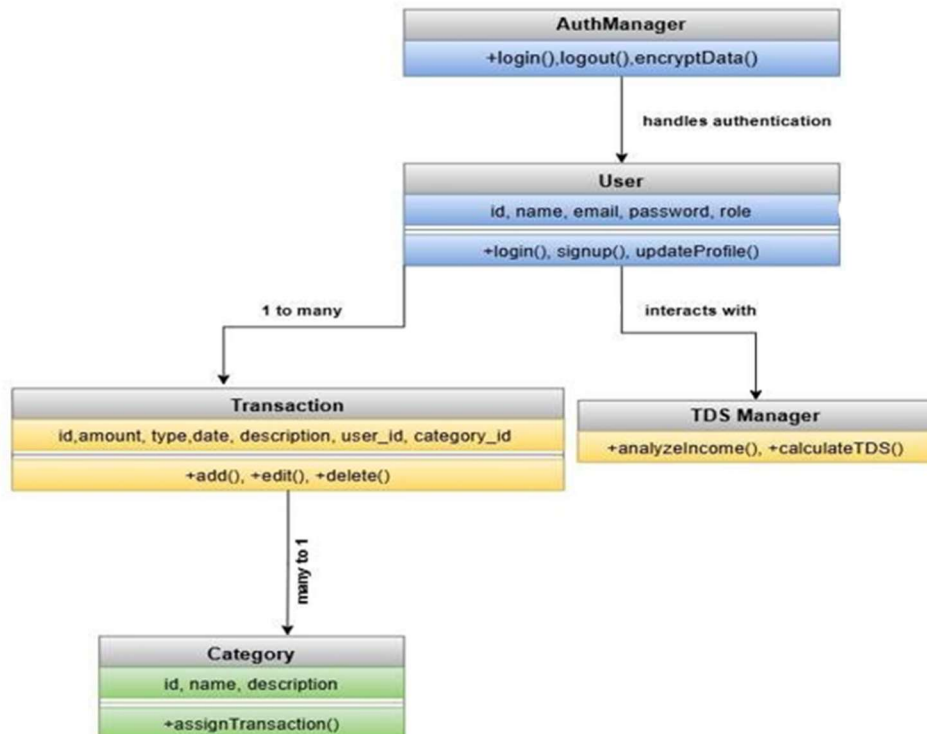


6. System Modeling

- [Use Case Diagram](#)

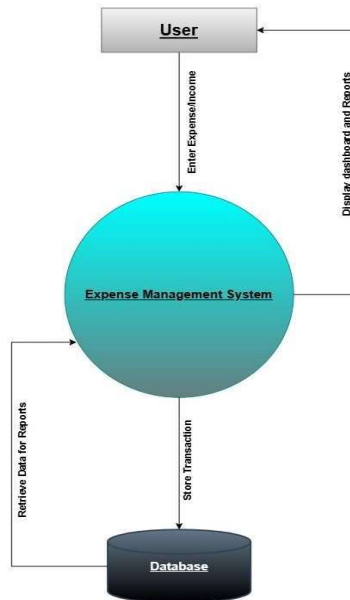


- [Class Diagram](#)

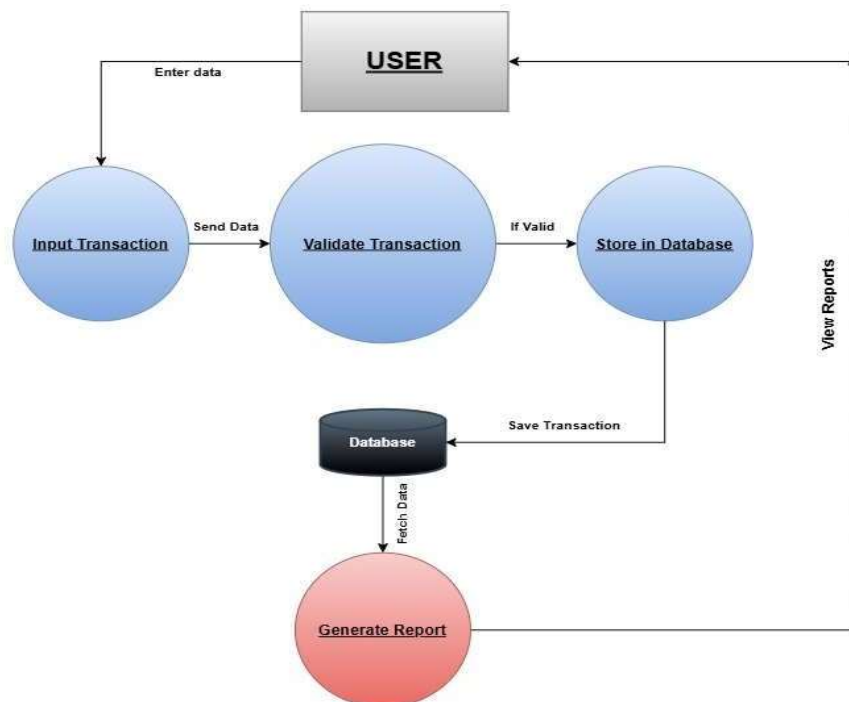


- DFD Level 0 & Level 1

DFD LEVEL 0:



DFD LEVEL 1:



7. Database Schema Design

Table Name	Fields
Users	user_id (PK), name, email, password_hash, role
Transactions	trans_id (PK), user_id (FK), amount, type, category, date, description
TDS_Records	record_id (PK), user_id (FK), source, amount, tds_percentage

8. Testing Plan

Test Type	Description
Unit Testing	Testing of transaction add/edit/delete
Integration Testing	Front-end + backend + database flow
UI Testing	To ensure all components service correctly
Security Testing	To test login

Test Case ID	Test Case Description	Input	Expected Output	Actual Output	Status
TC01	Add income transaction	Amount: 10,000, Date: 01/04/25	Income added to balance	10,000 added	Pass
TC02	Add expense with category "Food"	Amount: 1,000, Category: Food	Expense deducted, reflected in chart	Reflected	Pass
TC03	Edit existing transaction	New Amount: 1,200	Transaction updated successfully	Updated	Pass
TC04	Login with invalid credentials	Email: wrong@abc.com , Pass: 123456	Error: Invalid credentials	Error shown	Pass
TC05	View dashboard charts	N/A	Pie & bar charts rendered	Displayed	Pass
TC06	TDS optimization with dual income	Salary: 50k, Freelance: 20k	TDS estimate and suggestions shown	Displayed	Pass

TC01

Manage Transactions

Add New Transaction

Type:

Expense

Income

Amount:

10000

₹

Date:

01-04-2025

Category:

Salary

Description:

Part-Time

Add Transaction

Output:

4/1/2025	Income	Salary	Part-Time	+ ₹10000.00	Edit	Delete
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TC02

Add New Transaction

Type:

Expense

Income

Amount:

1000

₹

Date:

16-04-2025

Category:

Food

Description:

(Optional)

Add Transaction

Output:

Your Transactions						
Date	Type	Category	Description	Amount	Actions	
4/16/2025	Expense	Food	-	- ₹1000.00	Edit	Delete

TC03

on Tutorial... 3.10.12 Documentat... 4. Using Python on... What's New In Pyth... Microsoft Office Pro... GB sir limits and co... 1 Limits, Left hand L...

Web-Based Expense and Income Management System

Dashboard [Get My Profile](#) [Logout](#)

Edit Transaction (ID: 26)

Type:

Amount:

Date:

Category:

Description:

[Update Transaction](#)

[Back to Dashboard](#)

Output:

Date	Type	Category	Description	Amount	Actions
4/16/2025	Expense	Food	-	- ₹1200.00	Edit Delete

TC04

Web-Based Expense and Income Management System

[Sign Up](#) [Sign In](#)

Sign In

Email:

Password:

[Sign In](#)

Output

[Sign Up](#) [Sign In](#)

Sign In

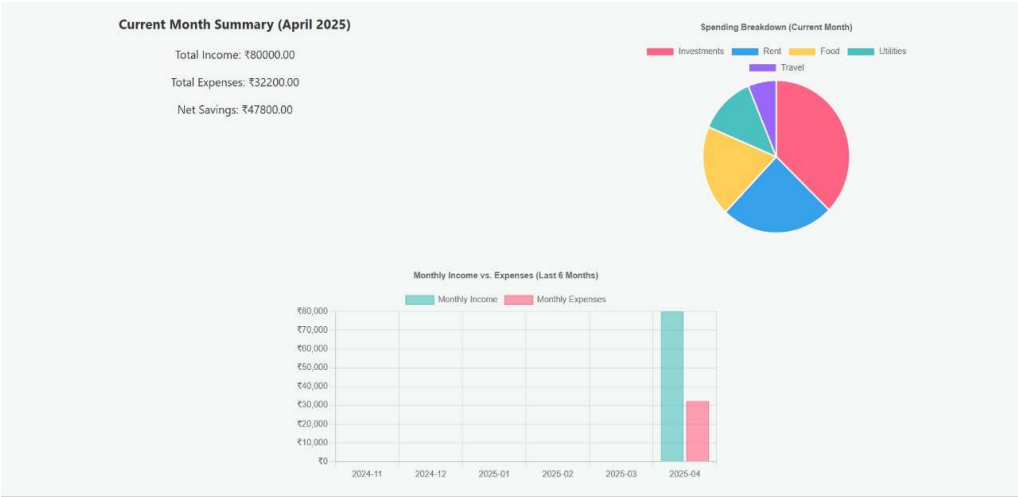
Login failed: Invalid email or password

Email:

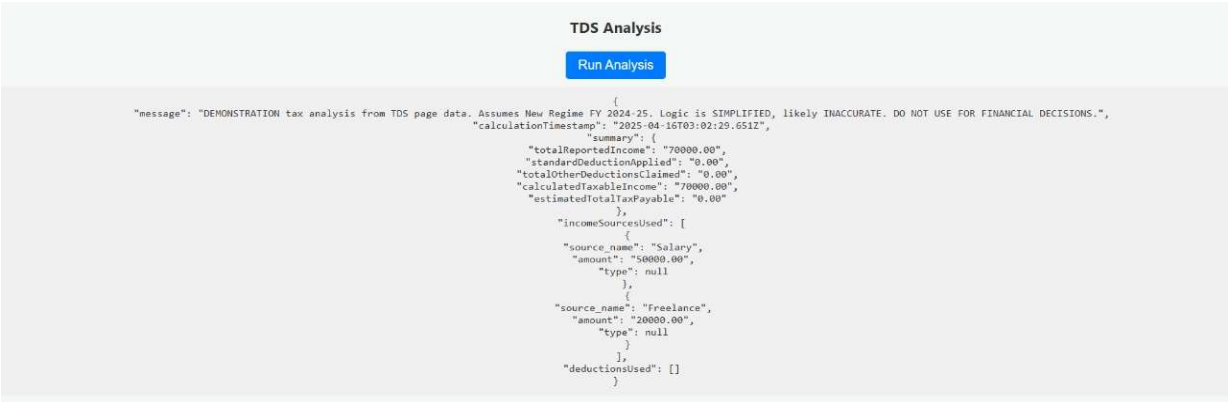
Password:

[Sign In](#)

TC05



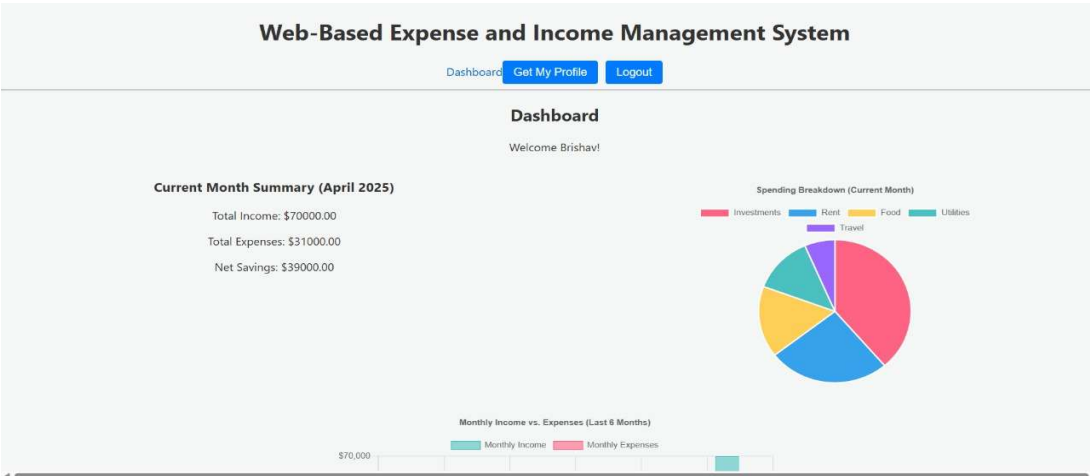
TC06



9. User Manual / Help Guide

- Step 1: Register or Login
- Step 2: Navigate to dashboard
- Step 3: Add income or expenses
- Step 4: Use filters to analyze spending

Dashboard



Add transaction form

Manage Transactions

Add New Transaction

Type:

☒ Expense

☐ Income

Amount:

0.00

Date:

14-04-2025

Category:

-- Select Category --

Description:

(Optional)

Add Transaction

Insights section

Add New Transaction

Your Transactions

Date	Type	Category	Description	Amount	Actions
4/14/2025	Expense	Investments	-	- \$12000.00	Edit Delete
4/14/2025	Expense	Utilities	-	- \$4000.00	Edit Delete
4/14/2025	Expense	Travel	Weekend trip to Rishikesh	- \$2000.00	Edit Delete
4/14/2025	Expense	Food	-	- \$5000.00	Edit Delete
4/14/2025	Expense	Rent	-	- \$8000.00	Edit Delete
4/14/2025	Income	Miscellaneous	Part-Time	+ \$10000.00	Edit Delete
4/14/2025	Income	Salary	Salary	+ \$60000.00	Edit Delete

TDS Optimization

Web-Based Expense and Income Management System

[Dashboard](#) [Manage Income Sources \(TDS\)](#) [TDS Optimizer](#) [Investments](#) [Get My Profile](#) [Logout](#)

TDS Optimization

Add Tax Deduction / Exemption

Section(e.g., 80C, 80D)

Description(e.g., Life Insurance, PPF)

Amount

Date Incurred/Paid(dd-mm-yyyy)

Add Deduction

Your Added Deductions

(asdf) a/c: 45556.00

TDS Analysis

Run Analysis

[Back to Dashboard](#)

10. Maintenance Plan

- Regular bug fixes
- Monthly code refactoring for performance
- Annual security audit

11. Future Scope / Enhancements

- Enhancing and fully upgrading TDS in the website
- Extending the website to a mobile app (React Native / Flutter)
- Automatic bank statement import
- AI-powered budgeting assistant
- Notification system (SMS/Email alerts)

12. Glossary

Term Definitions

TDS Tax Deducted at Source