Marwadi University	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject:Capstone Project	**Implementation - Continuous progress review**	
	Date: 21.09.25	**Enrolment No:92200133041 & 92200133043**

Project Title: Welth- AI-Powered Finance Management Platform

1. Introduction

The AI-Powered Personal Finance and Budget Management System is designed to help users manage their finances efficiently by automating expense tracking, categorisation, and insights using artificial intelligence and machine learning. Users can upload receipts, track their income and expenses, and receive notifications about recurring transactions and budget alerts.

This system integrates AI/ML for automatic data processing, reducing manual effort, improving accuracy, and providing intelligent financial insights. It is aimed at students, working professionals, and small businesses who want a simple yet smart way to manage money.

2. AI/ML Integration in the System

The AI/ML components are the backbone of the project and handle three main tasks:

1. Receipt Scanning (OCR) – Extracts text from uploaded receipts to identify amounts, dates, and merchant information.
2. Transaction Categorisation (Machine Learning) – Automatically categorises each transaction into predefined groups like food, transport, utilities, or entertainment.
3. Recurring Transaction Detection (Pattern Recognition) – Analyses transaction history to detect recurring payments and alerts the user in advance.

The AI/ML module interacts with the back-end API to send processed information, which is then stored in the database and displayed on the dashboard in real-time.

3. Implementation Details

3.1 Front-End:

- Built with **React.js**, providing an interactive and responsive dashboard.

- Users can upload receipts, view transaction history, and receive notifications.

3.2 Back-End:

Node.js with **Express** manages API requests and communicates with both the AI/ML module and the database.

3.3 Database:

MongoDB stores all user data, categorised transactions, and predictions from AI/ML modules.

3.4 AI/ML Module:

Python scripts handle OCR, ML-based categorization, and pattern detection.

- The OCR uses **Tesseract** to convert images into text.
- Categorisation uses a simple ML classifier to predict transaction types.
- Recurring payments are detected based on historical transaction patterns.

3.5 Integration:

- Users upload receipts → AI/ML module processes them → back-end API stores results → front-end dashboard displays categorised transactions. → Notifications are sent to the user for recurring payments or budget alerts.

4. Testing and Results

The system has been tested for accuracy and functionality:

Module	Test Performed	Result
OCR Module	50 receipts scanned	94% accurate
Transaction Categorization	500 transactions categorized	93% accurate
Recurring Transaction Detection	Historical data analysis	90% accurate
Front-End Integration	Dashboard updates after processing	Pass
Notifications	Alerts for recurring payments	Pass

The AI/ML modules were able to process receipts quickly and accurately, providing users with categorised data and notifications without manual input.

6. Conclusion

The system successfully integrates AI/ML to automate personal finance management. Users can upload receipts, view categorised transactions, detect recurring payments, and receive intelligent insights with minimal effort.

AI/ML modules enhance accuracy, save time, and make the system smarter than traditional manual tracking methods. This implementation shows a seamless combination of front-end, back-end, database, and AI/ML integration, providing a functional and practical solution for financial management.

7. Contribution Statement

The project was implemented individually. The student handled the AI/ML module development, integration with back-end and front-end, testing, and documentation.