Software Engineering Project Synopsis

NAME: Tejas Ajit Joshi
MIS: 612203078
DIV: 1
BATCH: T-5

NAME: Tejas Kolhe
MIS: 612203097
DIV: 1
BATCH: T-5

Project Proposed - **Digital Receipt Management System**

1. **Introduction to Research Area**

- The research area focuses on digital receipt management systems, which are becoming increasingly important in both personal and business contexts.
- With the rise of digital transactions and the need for better financial tracking, there is a growing demand for tools that can efficiently manage, store, and analyze receipts.
- This area intersects with software engineering, data extraction (OCR), cloud computing, and user experience design.
- The goal is to create a system that simplifies receipt management, enhances financial tracking, and integrates seamlessly with other financial tools.

2. **Introduction to Project Topic**

- The project topic is "Development of a Digital Receipt Management System with Advanced Features".
- This system aims to provide users with a comprehensive solution for managing receipts, both physical and digital.
- Key features include receipt scanning and storage, automatic receipt capture, OCR-based data extraction, categorization and tagging, expense analytics, warranty tracking, and multi-device access.
- The system will also support future extensions like integration with accounting software and blockchain-based proof of purchase.
- The project addresses the need for a unified, user-friendly platform to manage receipts efficiently, reducing the hassle of manual tracking and improving financial awareness.

3. Gap FIndings

- Lack of Comprehensive Solutions: Many existing receipt management tools focus on specific features (e.g., OCR or expense tracking) but fail to provide a holistic solution that combines scanning, storage, categorization, and analytics.
- Limited Automation: Most tools require manual entry or lack integration with merchants, emails, and payment gateways for automatic receipt capture.
- Poor User Experience: Many systems have clunky interfaces, making it difficult for users to search, filter, or categorize receipts effectively.
- Insufficient Support for Business Use: Few tools cater to small businesses, which need features like shared folders, tax-ready reports, and integration with accounting software.
- Sustainability Concerns: The reliance on physical receipts persists, contributing to environmental waste, despite the availability of digital alternatives.
- Security and Authenticity: There is a lack of systems that ensure the authenticity and immutability of receipts, which is crucial for audits and warranty claims.
- Existing receipt management software like expensify, wave receipt, shoeboxed provide some of these tools, but not all.
- Our Web based solution aims to fill in all these gaps and provide a smooth and efficient user experience

4. Proposed Solution

- The proposed solution is a Digital Receipt Management System that addresses the gaps identified above. The system will include:

1. a) Core Features:
    - Receipt scanning and storage with OCR for data extraction.
    - Automatic receipt capture via QR codes, APIs, and email integration.
    - Cloud-based storage for secure, long-term access.
    - Categorization, tagging, and search functionality for easy organization.
    - Expense analytics and reporting for personal and business use.
    - Warranty tracking with reminders and notifications.
2. b) Advanced Features:

- Integration with accounting software (e.g., QuickBooks, Tally).
- Blockchain-based proof of purchase for authenticity.
- Shared folders for family or business use.
- Third-party integrations with loyalty programs and payment services.

3. c) User-Centric Design:
    - Intuitive interface for seamless user experience.
    - Multi-device access with real-time syncing.
    - Notifications and reminders for important events (e.g., warranty expiration).

5. Tech Stack proposed

- Frontend User Interface - React.js
- Backend - Node.js / Express.js
- Database - MongoDB
- Optical Character Recognition - Tesseract.js / AWS Textract / Google Cloud Vision

6. Submitted By

- Tejas Joshi - 612203078
- Tejas Kolhe - 612203097