MediScan: Mobile Application for Prescription Recognition and Medicine Ordering

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Abstract - This paper presents MediScan, an Android-based application that leverages OCR and AI to scan handwritten prescriptions and streamline the medicine ordering process. With rising healthcare demands and a shift to digital platforms, MediScan offers a user-friendly interface with real-time tracking and order management, addressing issues in traditional prescription handling, especially for rural and elderly populations

1.INTRODUCTION

The Healthcare management is becoming increasingly dependent on digital solutions. Prescription misinterpretation, inaccessibility of pharmacies, and inefficient medicine management remain significant challenges. MediScan aims to provide a mobile solution that uses OCR and AI to extract data from prescriptions and facilitate medicine ordering.

2. PROBLEM STATEMENT

Despite digital advancement, many patients face challenges in interpreting handwritten prescriptions and obtaining medicines promptly. The absence of centralized prescription platforms leads to medication errors and delays. MediScan addresses these issues through intuitive design, real-time tracking, and accurate text extraction

3. OBJECTIVES

1. Develop an OCR-based prescription scanning module.
2. Enable direct medicine ordering through the app.
3. Provide accessibility features for elderly and rural users.
4. Incorporate real-time tracking and database management.

4. SYSTEM MODULES

The MediScan system is designed with a modular architecture to enhance scalability, maintainability, and ease of development. Each one of the module is responsible for a specific functionality and it also interacts with other modules of the application through well-defined interfaces.

A. User Authentication and Authorization Module

-Responsibilities:
1. Secure user registration and login functionality.
2.Integration with Firebase Authentication for credential management.
Features:
-Email/password login.

B. Prescription Scanning and OCR Module

-Responsibilities:
1.Capture or upload image of the prescription.
2.Extract text using Optical Character Recognition (OCR).
3.Preprocess and format the extracted data.
Features:
-Real-time text detection.

C. Medicine Identification and Matching Module

-Responsibilities:
1.Parse OCR output to identify medicine names and dosages.

2. Match detected medicines against a local or cloud-hosted medicine database.
Features:
-Real-time API calls to verify medicine details.

D. Cart and Order Management Module

-Responsibilities:
1.Allow users to select medicines, adjust quantities, and view pricing.
2.Compute order totals and apply any applicable discounts.
3.Track and display order status updates.
Features:
-Order modification before confirmation.

E. Address and Delivery Module

-Responsibilities:
1.Collect and manage user delivery addresses.
2.Interface with delivery services or local pharmacies.
Features:
-Multiple address support for repeat orders.

F. Payment and Confirmation Module

-Responsibilities:
1.Facilitate payment via different modes (COD/online).
2.Confirm transaction status and update order history.
Features:
-Integration with payment gateways.
-Order confirmation and cancellation popups.

5. REQUIREMENT

The development of the application utilized the following hardware and software resources:

Name of Equipment	Specification	Cost	Available
Laptop Desktop /	i5 processor, 4 GB RAM, Mouse, 500 GB HDD	Rs. 50,000	Yes
Operating System	Windows 10 proper setup	-	Yes
Android Studio	17.0	Free	Yes
Java	Java 17	Free	Yes
Firebase	Latest LTS version	Free	Yes
Google ML kit	Latest version	Free	Yes
Total		**Rs 50,000**	

6. DIAGRAMS

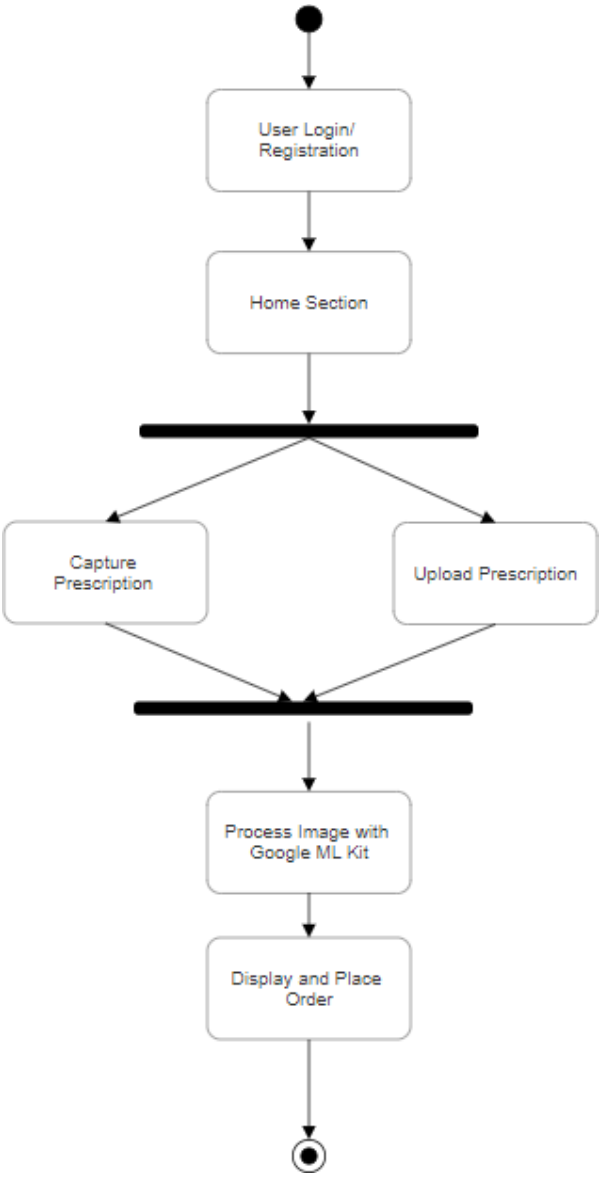

Fig 1 : Activity Diagram

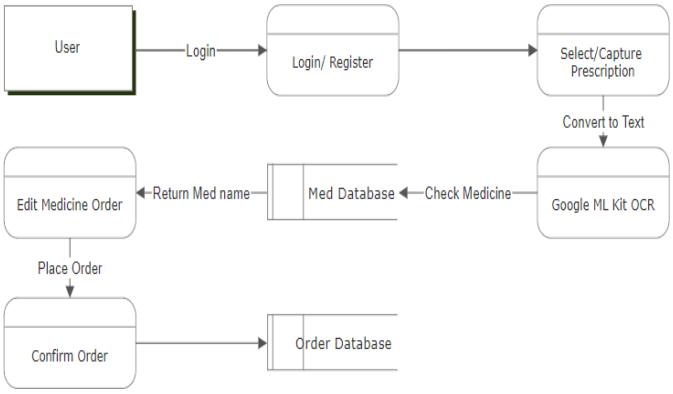

Fig 2 : Data Flow Diagram

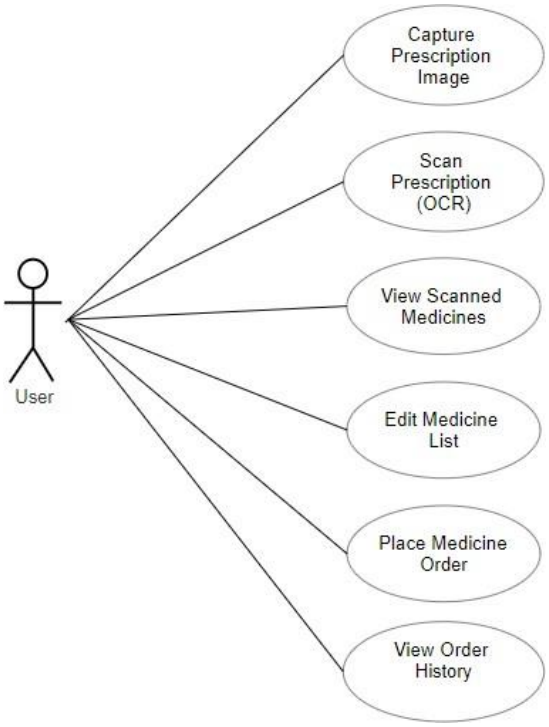

Fig 3 : Use Case Diagram

7. RESULTS AND TESTING

The system was rigorously evaluated through unit and functional testing to verify its stability. Various test cases were conducted to validate access for user functionalities. Key processes such as login, scanning, ordering were tested to ensure proper integration with the database and smooth form operations.

8. CONCLUSION

The MediScan bridges gaps in traditional healthcare delivery by simplifying prescription management and medicine ordering. With advanced OCR, user-centric design, and scalable infrastructure, it sets the foundation for a comprehensive digital healthcare platform.

9. FUTURE WORK

Future enhancements include

1. AI-driven accuracy improvements,
2. teleconsultation services
3. multilingual support
4. pharmacy integration for live pricing and availability.

10. REFERENCES

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