

# *SYNOPSIS REPORT*

## **Doctors Prescription Reader with Medicine buy links BOT**

by

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# 1. Introduction

Accessing medications quickly and effectively is essential in the fast-paced world of today, particularly when managing doctor-written prescriptions.

In response to this problem, we suggest creating a Telegram bot that will automate the process of identifying medications by utilising online pharmacy integration and optical character recognition.

This solution guarantees that users receive the correct medications without difficulty and saves time by combining real-time access to medicine databases with sophisticated handwriting recognition technology.

The Telegram bot is designed for users to simply upload prescriptions and get clickable buying links where they can directly go to a particular site to buy medicine.

## 2. Brief literature survey

1. OCR Technology: OCR systems like Tesseract are widely used for recognising printed and handwritten text in various applications, from digitising documents to automating data entry. This project will rely on established OCR techniques, which showcases how deep learning models can improve recognition of handwritten text.
2. Medical Prescription OCR: Other projects such as Medical-Prescription have focused on extracting text from medical prescriptions, improving accuracy, and reducing human error in interpreting handwriting.

## 3. Problem statement

Handwritten prescriptions can be challenging to read, which increases the possibility of making the wrong medication purchase and causes confusion. Patients encounter difficulties when trying to find medications on the internet by hand.

An automated system is required that can correctly decipher handwritten prescriptions and offer links to reputable online pharmacies like 1mg, Apollo, or PharmEasy where the right medications can be bought.

We need a simple but comprehensive place where a variety of buying options are available for users just by uploading or clicking prescriptions.

## 4. Objectives

The primary objectives of this project are:

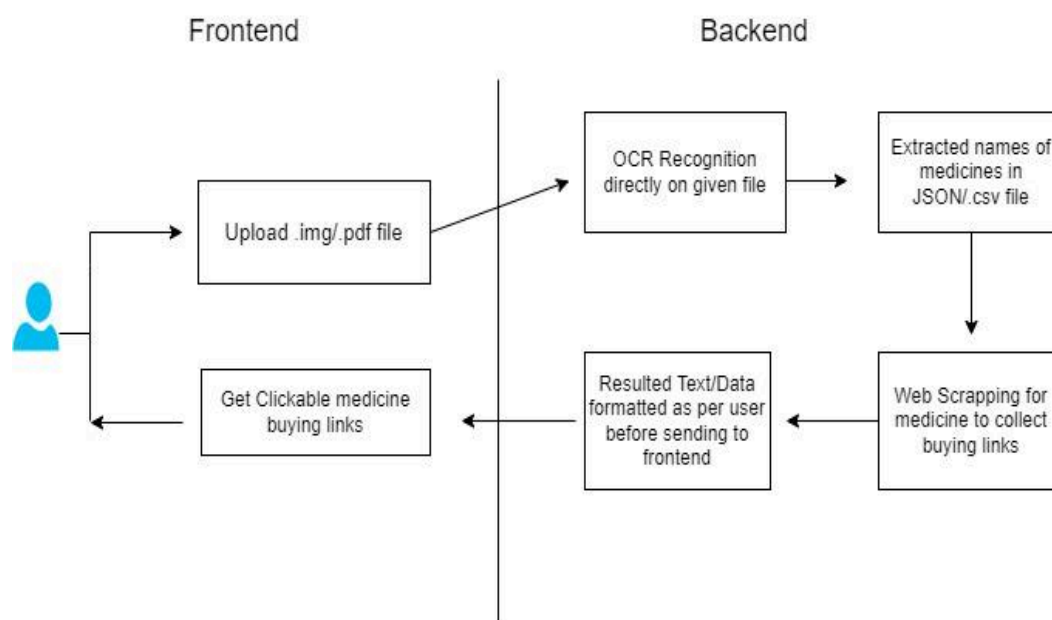
- Accurate Handwriting Recognition: Develop a system that can effectively read and interpret handwritten prescriptions using optical character recognition (OCR).
- Medicine Identification: Ensure the bot can accurately extract and recognise medicine names from the prescription, even with varying handwriting styles.
- User-Friendly Interaction: Create an easy-to-use Telegram bot interface where users can upload prescription images and receive links to purchase medicines instantly.
- Error handling: Implement robust error-handling mechanisms for unclear handwriting or unrecognised medicines, guiding users with appropriate feedback.
- Speed and Efficiency: Minimise processing time to ensure users receive fast and reliable results, enabling them to quickly purchase necessary medications.

## 5. Methodology

The project will employ a combination of research, design, and development methodologies. The following steps are anticipated:

1. Literature review: A thorough review of existing research on academic social networks, note-sharing platforms, and event management systems will be conducted to identify best practices and potential challenges.
2. Finding the best model to train OCR respondents in the backend and processing correct data (Google Cloud Vision API for handwriting recognition)
3. Development: The bot will be developed in Python or using Google's DialogFlow technologies, ensuring scalability, modularity, and user-friendliness.
4. Testing and evaluation: Rigorous testing will be conducted to identify and address any usability issues. Iterative development will be employed to refine the platform based on user feedback.
5. Put error handling in place for situations where the medication cannot be located online, cannot be found in handwritten form, or cannot be recognised by name.
6. Give the user pertinent feedback, suggesting manual searches or, if required, re-uploading the image.
7. Deployment: Bot on a server for 24/7 availability using platforms like AWS Lambda or Koyeb.

## 6. Block diagram



## 7. Expected results

1. Accurate Prescription Reading: The bot will successfully extract and recognise medicine names from handwritten prescriptions using OCR technology, even with varying handwriting styles.
2. Fast Drug Identification: Users will be able to quickly identify their prescribed medications by receiving high-accuracy medicine names.
3. Direct Purchase Links: The bot will generate and distribute direct links to trusted online pharmacies such as 1mg and Apollo, streamlining the process.
4. Effective Error Handling: To guarantee a seamless user experience, the bot will offer relevant feedback and recommend alternate actions in situations involving illegible handwriting or medications that are not recognised.

5. **Improved Accessibility to Healthcare:** By streamlining the prescription interpretation process, the bot will increase users' ability to obtain medications, especially for those who depend on online pharmacies.

## 8. Time schedule

Task	Estimated duration	Start date	End date
Research and Planning	1 week	27 Aug	2 Sep
User Research	1 week	2 Sep	7 Sep
Design and prototyping	2 weeks	8 Sep	22 Sep
Development	8 weeks	23 Sep	10 Nov
Testing and Iteration	2 weeks	10 Nov	24 Nov
Launch & Deployment	1 week	24 Nov	1 Dec
Maintenance	-	-	--

## 9. References

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2. **Telegram Bot API Documentation:** The official API documentation for developing and deploying bots on the Telegram platform. <https://core.telegram.org/bots/api>
3. **Fuzzy Matching in Python:** An explanation and guide on using fuzzy matching techniques to improve the accuracy of text matching for ambiguous inputs. <https://www.datacamp.com/tutorial/fuzzy-string-python>
4. **Optical Recognition of cursive handwriting by Bretislav Hajek:**  
<https://raw.githubusercontent.com/Breta01/handwriting-ocr/master/doc/imgs/poster.png>
5. **Deployment:** <https://www.koyeb.com/docs>
6. **Medical Document Digitization: The Role of OCR and Handwriting Recognition:**  
<https://www.sciencedirect.com/science/article/pii/S1532046418302359>

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