Smart Dispensary Locator Using Tesseract Algorithm & Expert System

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Abstract -- Paper introduces a smart Dispensary locator using tesseract algorithm and Expert System, we have developed various smart services.. Basic Services provided are: nearby medicine shop, name of the medicine by using OCR technology and name of the disease through interacting with the Expert System.

I. INTRODUCTION

The name of the medicine will get recognized (using OCR) from the prescription and the dispensaries will get locate on map. Also the medicines can be entered manually which will also help for locating the dispensaries that are near to us .In the third module , the user will enter his symptoms and will to know about the disease he have. (This module is going to develop using expert system)

II. DEVICES IN SMART DISPENSARY LOCATOR

a) Map Implementation:

1. In Android Studio, select
    - File > New > Import Project.
2. Go to the location where you need to save the Google Maps Android API v2.
3. Find the Map with Marker project
4. Get an API key
5. Now Paste your API key into the value of the GOOGLE_MAPS_API_KEY property. When the application is build, Gradle copies the API key into the app's Android manifest.

b) OCR Implementation:

For this ocr implementation we are using the TESSERACT algorithm which will recognise the text from the prescription and give the desired output.

1. As OCR Reader allows the user to select an image already stored on their Android device or use the device's camera to capture a new image; an image rectification algorithm is then runned and then it passes the input image to the Tesseract service.
2. When the OCR process is complete it produces a return string of text which is displayed on the main "OCR Reader" screen, where the user is allowed to edit the results and present it with several options.
3. Tesseract is written in C++
4. Google had already made a more complete wrapper available to the public as a part of its "Eyes- Free" project, so we began using their version.
5. The Google implementation of Tesseract has a convenient architecture which allowed us to interface our pre-processed images with the ocr engine.
6. Before implementing our project on the Android mobile phone, we first need to develop the image rectification algorithms in MATLAB in order to take advantage of the image processing toolbox and faster processing times

c) How the OCR will perform using algorithm:
Steps to be performed on OCR:

1. Create a new Android Studio project.
2. Add Tesseract library to the project adding the lines to build gradle.
3. Create a class called TessOCR.
4. Constructor needs a context (for example Main Activity context) and the language to recognize that is used to start OCR engine. Language must be in 639-2/B ISO format. Example: spa (Spanish), chi (Chinese).

5. Import TessOCR class created in previous point to Main Activity and create a new recognition instance
6. Add into the Main Activity methods to perform character recognition.
7. Call step 6 method to start recognition.

Fig. 1: OCR technology

III. EXPERT SYSTEM

Fig. 2: A Symbolics Lisp Machine: an early platform for expert systems

In artificial intelligence, an expert system is a computer system that emulates the decision-making ability of a human expert. Expert systems are used to solve complex problems by reasoning through knowledge, represented mainly as if–then rules rather than through conventional procedural code.
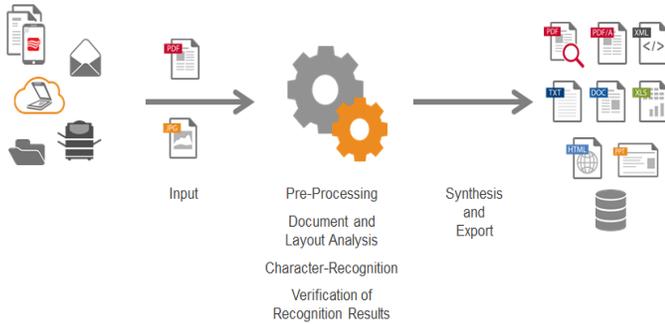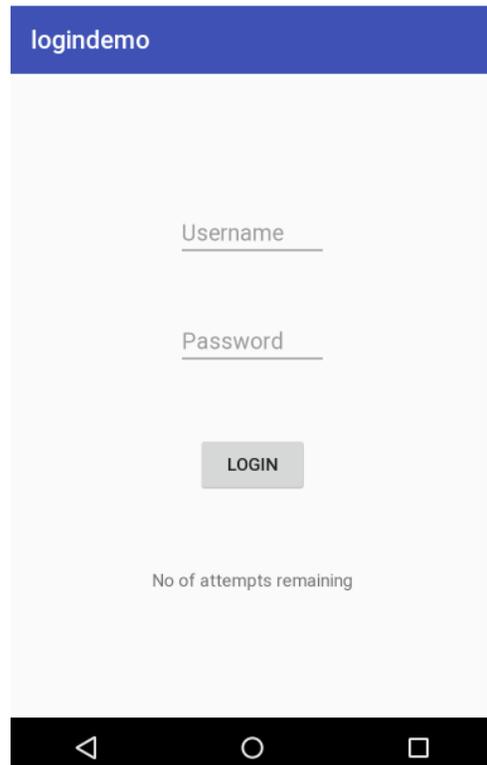
An expert system consists of two subsystems: the inference engine and the knowledge base. The knowledge base represents facts and rules. The inference engine is applied to the rules of the known facts to deduce new facts. Inference engines can also include explanation and debugging abilities.

IV. IMPLEMENTATIONS

V. CONCLUSION

Hence, this project will simplify the search of medicines easy that was prescribed to the patients and the patients can find the prescribed drugs easily to their nearby medicine shop. This project is a all in one platform for searching the medicine in the nearby locality.

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