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# SOFTWARE REQUIREMENTS SPECIFICATION FOR OPT HALAL

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**ABSTRACT:** *This paper explores the how to differentiate between edible products that are available in the market. It is very difficult for the Muslims to filter out the halal products from the haram products. So in this research we have tried to develop an operating system, Optical Character Recognition (OCR), which uses the barcode in the mobile to detect the halal and haram products.*

**KEYWORDS:** *Operating System, Optical Character Recognition (OCR), edible products, filter.*

## **INTRODUCTION:**

Edible products manufactured by different companies contain numerous ingredients. These ingredients can be obtained from different sources that may be haram or halal. In Non-Muslim countries (and in some cases Muslim countries as well) the sources of certain ingredients are haram like (gelatin, whey, etc.).

Moreover, most of the times the code of the used ingredient is written on the product instead of name. Therefore, Muslims find it difficult to filter out the halal product from the haram ones. But even in Pakistan many international companies have used haram ingredients.

The Ministry of Science and Technology presented a list of 19 such items containing haram ingredients, after presenting these types of products which are containing haram ingredients have banned. So that we are trying to make sure this application will be able to identify the product's ingredients that may halal or haram.

If the product is harm, then user check alternative products. When it scans the barcode using mobile device will get the ingredients which is used in the product. It will also show that the resultant ingredient which are used in the product is halal or haram.

## **1.1 Project Scope**

The scope of this project is to produce an interactive and useful application for the Android marketplace.

- With the help of this application user will scan the barcode of the product using mobile device and after scan it will get information about haram or halal ingredients which is used in the product.
- In case of scan, the application will extract the ingredients by using OCR technology.
- With the help of this application user will also be able to know the alternative product of the same kind only if the scan product is haram

## **OVERALL DESCRIPTION:**

### **1.2 Product Perspective**

Developing application to identify the product through barcode.

This android application provides information about the product ingredients which are extracted through OCR and show halal or haram ingredients.

This application also show the alternative product when scan ingredients of a product are haram.

### **1.3 Project Functionality**

The product will be able to perform following functionalities:

- Identifying the product item and their ingredients with the help of barcode.
- User can also scan the ingredients written on the product with the help of Optical Character Recognition.
- OCR will scan the ingredients and will check as if the ingredients used are Halal or Haram.
- To tell the user about alternative products if the ingredients are not Halal.

### **1.4 Users and Characteristics**

- The user of this software will be able to identify haram and halal products with the help of Barcode and OCR.
- Suggesting alternative lists of halal product.

### **1.5 Operating Environment**

The application can be used anywhere using smartphone with the android operating system.

### **1.6 Design and Implementation Constraints**

- This application will work on android based smart phones/platform.
- Collect and store the ingredients, we will use MySQL database.
- For checking out the details of product ingredients either they are halal or haram.

### **1.7 User Documentation**

We will provide a user manual along with that product, which will include how to use the product. The basic structure would be elaborated in the user manual to easily understand the concept and then use it accordingly.

### **1.8 Assumptions and Dependencies**

- **User:** User must be literate enough that he could interact with application options.

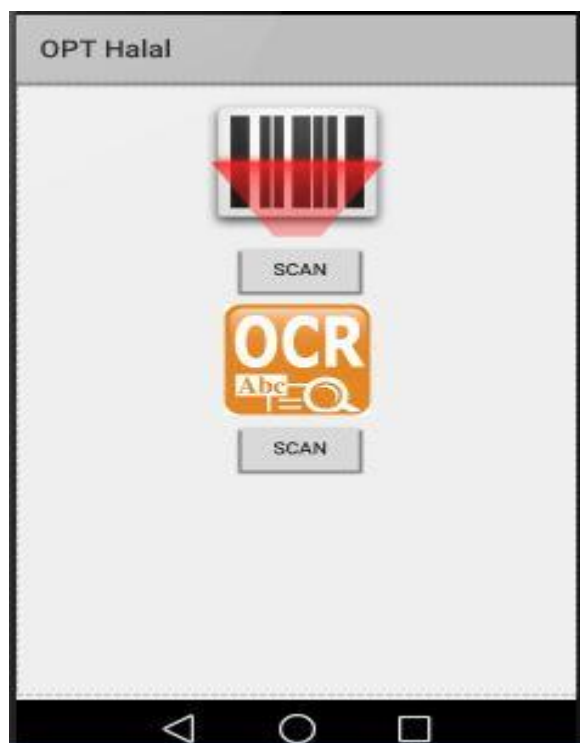
- **Android Based Smart-phone:** Android based smart phone is required with built-in sensors.

## **SPECIFIC REQUIREMENTS:**

### **1.9 External Interface Requirements**

#### **1.9.1 User Interface**

Graphical user interface of the application will have two options one for Barcode and second for OCR.



#### **1.9.2 Hardware**

Smart Android device will be required.

#### **1.9.3 Software Interfaces**

1. Operating System: Android.
2. Android Studio.
3. Database: SQLite.

## 1.10 Functional Requirements

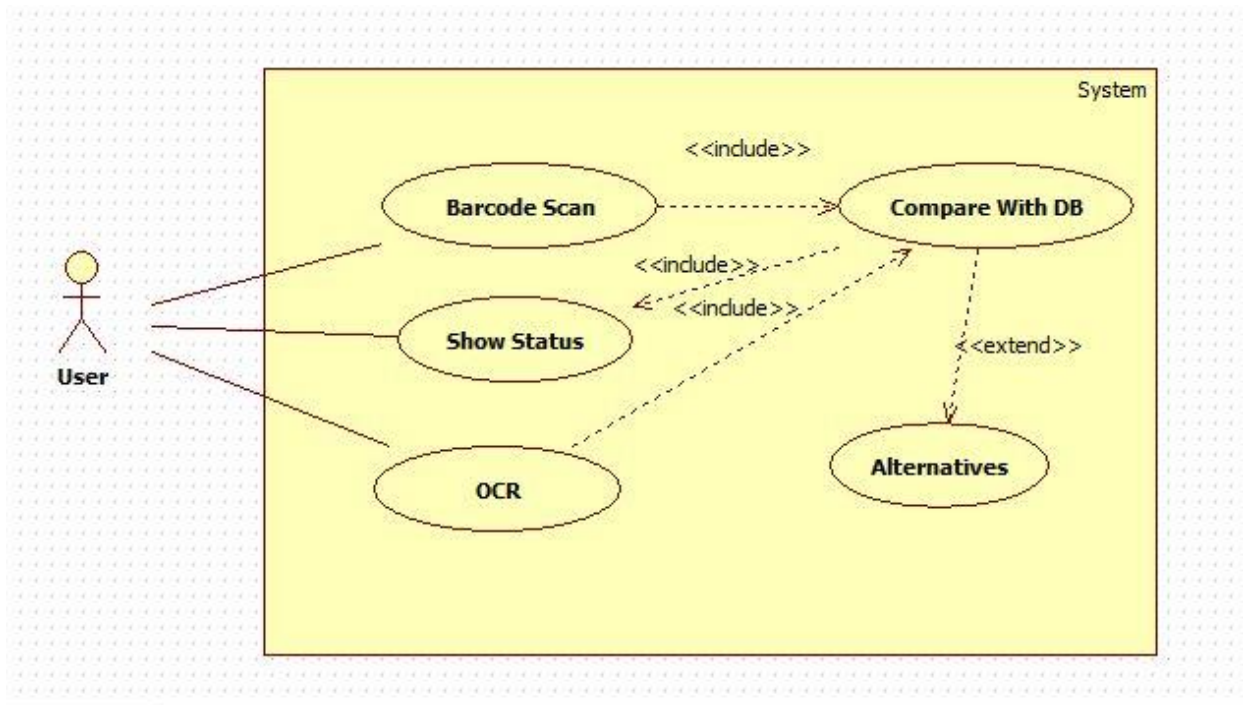
Application includes the following major Functional Requirements.

- System will identify the product with the help of Barcode scanning and tell the status of the product.
- System can also scan the ingredients written on the product with the help of Optical Character Recognition.
- System will show that scan product is halal or haram by checking the ingredients of the product.
- System will provide the list of alternative products.

## 1.11 Behaviour Requirements

### 1.11.1 Use Case View

Use case



## **OTHER NON-FUNCTIONAL REQUIREMENTS**

### **1.12 Performance Requirements**

The application run on smart phone with android.

### **1.13 Safety and Security Requirements**

This application is save and secure.

#### **Software Quality Attributes**

##### **1.13.1 Reliability**

The application is reliable and run anywhere on android platform.

##### **1.13.2 Usability**

Application is useable for Muslim Community.

## **2 Conclusion**

The main purpose is to aware the user of this application to identify between Halal and Haram products. The edible products manufactured by different companies contain numerous ingredients. These ingredients can be obtained from different sources that may be haram or halal. This application contains three modules Barcode reader, OCR and Enter product name. Barcode reader scans the barcode of product and shows the status of product either Halal or Haram on the basis of product ingredients. User can also scan the product ingredients through OCR and will show the status of product either Halal or Haram. User can also enter the product name and check the status of product either Halal or haram. User can also add the product in case if scan product is not found in database.

## **References and Acknowledgments**

Android Studio: <http://developer.android.com/sdk/index.html>

SQLite: <https://www.sqlite.org/download.html>

Sensors: *Available in smart phone.*