

Expi-Not Application For Health Care And Finding Dualistic Products Using Qr-Code

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Received 28 January 2017; Accepted 22 April 2017; Available online 1 May 2017

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ABSTRACT

In the last decade people lack in checking whether a particular product is good to use. Products differ from various aspects such as size, shape, color, quantity, quality etc. Every product has a manufacturing and an expiry date, particularly in food products, medicinal products and others. Now and then people suffer from various problems in using cosmetics and other dermatological products. This is because people use products without checking the expiry date; to avoid this; the proposed system creates a way for the customers to receive an expiry notification from the purchased retail shop. A mobile application is developed to receive notification of expiry date. In addition the mobile application is designed to check whether a particular product purchased is dualistic (duplicate) or not by scanning the QR-code of the product. The QR-code details are created and maintained by the manufacturer which includes manufacturing date and expiry date along with the products description.

KEYWORDS: Web application, Notification, QR Code Scanning.

INTRODUCTION

Now-a-days web application or web app plays a very vital role. It is a client-server software application. The client or otherwise the user interface works in a web browser. Some of the common web applications include webmail, online retail sales, online auctions, instant messaging services and many others [1]. Based on the type of application, it requires the development of whole different browser-based interface, or adapting an existing application to use varied presentation strategy. This strategy allows the user to pay the fee monthly or early for using the software application without having to install it on a local hard drive. The company following this kind of strategy is known as Application Service Provider (ASP). ASPs are presently receiving more attention in the software industry.

Security on these types of applications are major concern, because it gets involved in both enterprise information and also private customer data protecting these are an important work of any web application. The security process includes authentication, authorization, asset handling, input and logging and also auditing [2]. Building Security services into the web applications can be more effective and less disruptive. There are different methods of targeting mobile devices when developing web application: 1. Reactive web design can be used a single-page application viewable on small screens and work well with touch screens. 2. Native apps or "mobile apps" which runs directly on a mobile devices or tablets.

QR code is termed as "Quick Response Code". It is a type of matrix barcode first designed for automotive industry in Japan, it contains the information about an item to which it is attached. It uses standardized encoding modes. The major use of QR codes is consumer advertising. Smartphones can also be used as a QR code scanner, displays the code and converts it into some useful form like URL for a website and so on.

QR codes are used widely in many applications like commercial tracking, entertainment, transport ticketing, product and loyalty marketing and many others. QR codes are used in various mobile operating systems. The mobile device supports URL redirection, which in turn allows the QR codes to send data about a data (Meta data) to an existing application that run on devices [3]. Many applications can be used free or paid to scan the codes and link to an External URL. By scanning the QR codes of an item it is possible to find the duplication of product.

II. Existing System:

Food wastage due to expiration is a major issue now-a-days. In the existing system, a smart phone application has been proposed, which will help keep track of food expiration dates and send notification to the user when a food is about to expire, so that food wastage is prevented. This application works by enabling the user to scan the barcode of the food product to automatically discover the product's name [4]. The user will then be able to use the feature of optical character recognition for capturing the date of expiry from the product, after which the user can add the item to a database and the corresponding expiry date is added to the calendar which then sends the notifications on and before the food is about to expire. Even though these applications is worthwhile, by storing the food details and sending notifications, it takes a very long time to scan each and every product purchased, which is inconvenient to the users.

III. Aims And Objectives:

Aim:

To design a web application to receive expiry notification at the time of product getting expired, and also to check whether the product is original or duplicate by scanning the QR code in the product using mobile camera.

Objectives:

The objectives are:

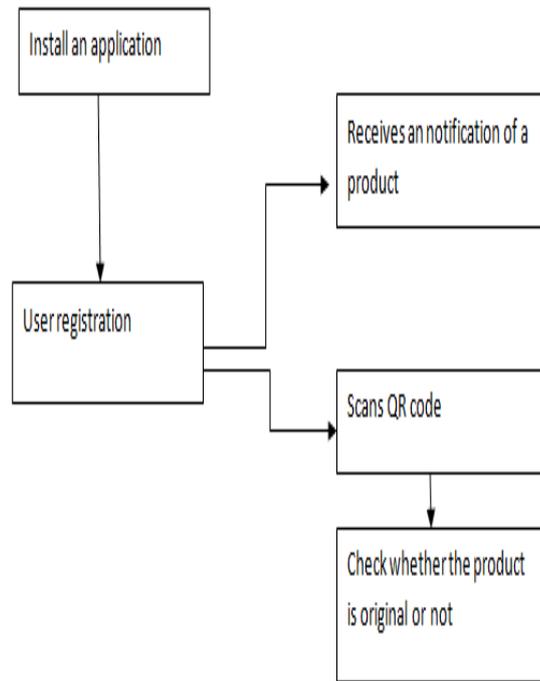
1. To study the functions and working of Expi-not application.
2. To explore the challenges being faced by the health care users.
3. To implement the application to ensure its functionality and working
4. To design a web application that solves the problem inherent with the use of QR code by the customers.

IV. Proposed System:

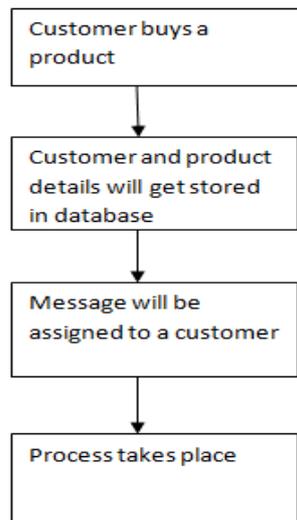
Our proposed system, Expi-not application consists of two sides-the seller side and the customer side. The customer buys a product from the retail shop, the product details and customer details are stored in the database while billing. The database includes manufacturing date and expiry date in it.

While generating bill, the message regarding the expiry date will be automatically assigned to the particular customer who purchased that product. These are the process takes place at the seller side. In the customer side, initially the customer has to install an application of that particular retail shop. Once installed, the registration process takes place which includes entering of details like name, phone number, membership ID of that particular customer [5]. The customer receives an expiry notification on and before the purchased product expires. The additional module in customer side is that we can able to check whether the purchased product is original or not. The manufacturer stores the details of the product's QR-code, from that details, the identification of product can be done by scanning the QR-code of the product. Once scanning is done the product details with the hint of message such as "original product" will be displayed, else if the product is dualistic it shows with "not registered product". The QR- code will be scanned using the mobile camera.

- *Customer Side:*



- *Seller Side:*



Qr Code:



A QR code is a matrix code otherwise said to be two-Dimensional code (2D), that is it contains data not only in one dimension (e.g. horizontally from left to right like the barcodes on the products in e.g. your grocery store) but also in both dimensions (vertical and horizontal). The acronym QR is short for “Quick Response”. It uses standardized encoding modes to store data efficiently and stores data in a less space. Machines can read QR code more quickly when compared with bar code.

There are a few different Android apps for scanning QR codes. QR Code Reader is one of the simple way to scan and free, works quickly, and doesn't blast you. To scan a QR Code, all you need to do is load the app, start scanning and point your camera at the QR code. Line it up inside the guide arrows and that's it: QR Code Reader recognizes it and provides the appropriate information, carries out the appropriate task or, in the case of phone numbers and other contact information, asks the user what action to be taken. It also records your scan history so you can look back at the codes you've been pointing your phone at. In our proposed system the details of the product will be stored in the database during the manufacturing of product.



Web Application:

A. Web app:

Web applications have a similar functionality to a desktop software applications or mobile applications. Initially HTML5 was the first one to introduce explicit language for developing applications that are loaded as web pages.

B. Web application interface:

Using Java, JavaScript, html, flash, Silverlight and others, the application oriented procedures such as audio playing, watching videos, and drawing, performing mouse and keyboard actions are possible. Click and drag, drag options can also be done using these. Client side scripting along with the server side technologies like ASP.NET, J2EE, Perl, Pluck and PHP has been developed recently. Ajax is a best web development technique which develops a more interactive experience for the users.

C. Web app structure:

The structure of application usually consists of three tiers. Each tier has its own work to be done. The three tiers are as follows: [1] Presentation layer [2] application [3] storage. There are applications that runs on a single tier, such type of applications are said to be traditional applications. But web applications falls on n-tiered approach by nature.

In the first layer (i.e) the presentation layer consists of Web browser, the middle tier consists of an engine made of some Web technology (such as ASP, CGI, ColdFusion, Dart, JSP/Java, Node.js, PHP, Python or Ruby on Rails), and a database in the third tier (storage).initially, The web browser sends requests to the middle tier, which in turn services the request by solving the queries and updates them in the database at the third tier and generates a user interface.

For typical applications, a 3-tier approach does not fit well; therefore it may be advantageous to use an n-tiered approach. Another advantage is adding an integration tier to the structure so that it separates the data tier from the other tiers by giving an easy-to-use interface to access the data instead of passing SQL query. There are also few who view a web application as two-tier architecture. This is said to be a "smart" client performing all the actions and queries a "dumb" server, or a "dumb" client that relies on a "smart" server. The client handles the presentation tier, whereas the server holds the database (storage tier), and the application tier reside on one of them or on both. This increases the application scalability and separates the display and the database, the disadvantage of this type is that it will not allow for true specialization of layers, therefore many applications outgrow this model.

Presentation tier (web browser)
Application tier (web technology)
Storage tier (database)

Fig. 1: Structure of a general application.

D. Benefits of web app:

1. Cost effective.
2. Accessible anywhere.
3. Easily customizable.
4. Accessible for a range of devices.
5. Improved interoperability.
6. Easy installation and maintenance.
7. Adaptable to increased workload.
8. Increased security.
9. Flexible core technologies.

V. Expiry Alert System:

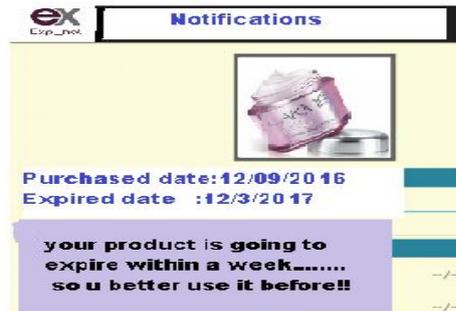
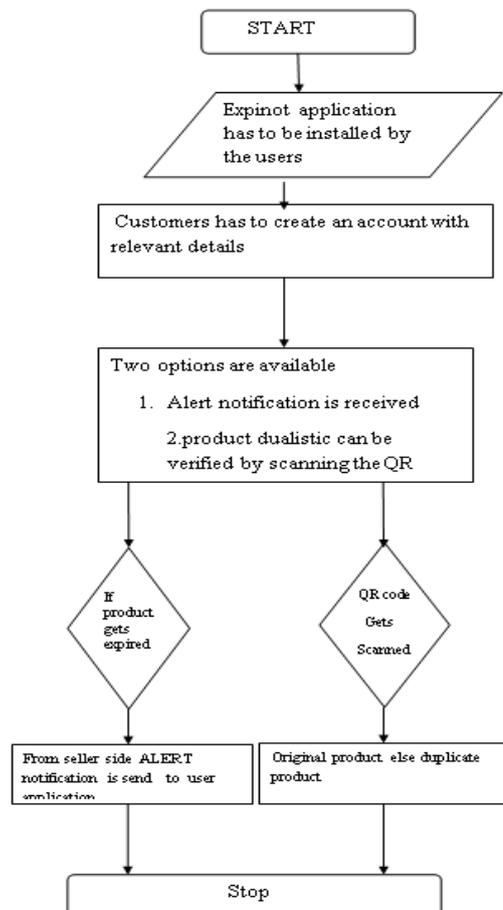


Fig. 2: Sample alert in mobile application

Flow Chart Of Alert System:



VI. Advantages Of Expi-Not Application:

1. Easy installation and easy to use Expi-not application.
2. A large amount of data can be stored in QR codes.
3. Scanning is done easily.
4. Customers are safe in using products since alert notification is sent to their applications.
5. High security and reliability.

Conclusion:

The Expi-not application designed using web application and QR code for health care customers are discussed in this paper. The product duplication can be easily identified by scanning the QR code is the important advantage and the alert message to the buyers regarding the expiry date is sent to their respected application automatically. Each and every manufacturing industry consists of separate product name, logo, QR code and so on. A particular product is said to be original only if it is manufactured by that corresponding manufacturer, only the manufacturer knows how to find the originality of products manufactured by them. In our paper we can identify the product originality by scanning the QR code of the product. The major disadvantage is that the QR code can be easily modified to overcome this advanced technology has to be introduced in future.

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