

# Android Application For Retail Stock Management

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## ABSTRACT

“Retail Stock Management App” is an android application that comes with a set of features where retailer can manage sales, purchase and inventory through an Android device. The android application uses centralized SQL database so that retailer can access data from wherever he wants. A retailer can login to retail stock management application, can add products to the database and can manage sales. Retail stock management application comes with an enhanced feature called E-Billing, on sale—it enables retailer to send Purchase bill to the customer’s E-mail directly. This application helps the retailer to upload the products by scanning the barcode using a mobile camera. The billing section has an addition of GST dashboard that has GST slabs for creating GST invoice to individual products. The retailer is alerted whenever the stock reaches a minimum number of requirement and if the product crosses the expiry date.

**Keywords:** Android application, Retailer, Centralized Sql, E-billing, Barcode-mobile camera, GST dashboard, Alert notification.

## I. INTRODUCTION

Android Technology [4] booms the market beyond expectation. Android is one such technology which has greater future and much flexible for users and as well as developers. Most of the smart devices in the world running android gives additional advantage.

There are n numbers of ERP software for stock management which enable the retailer /shopkeeper to maintain stock in an efficient way. Majority of the software are desktop version which limits the mobility of the machine/device, retrieving/feed of data to the system is forced to happen at one place. “Retail stock management App” is an android application which enables retailer to upload product details to stock management database by just scanning the barcode of the product through mobile camera.[5]

The efficiency of a retail store is based on the retailer’s ability to provide the right goods to the consumer, in the right quality, in the right quantity, at the right place and in right time. The entire process of retailing depends on the efficient inventory management.

Inventory management is one area that differentiates successful and unsuccessful retail stores. Inventory control is not just a materials management or warehouse department issue.

## II. LITERATURE SURVEY

## Over view of Android



Figure 1

[2]Android is an open source and Linux-based Operating System for mobile devices such as smart phones and tablet computers. Android was developed by the Open Handset Alliance-a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices, led by Google, and other companies.

Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. In addition to touch screen devices, Google has further developed Android TV for televisions, Android Auto for cars, and Android Wear for wrist watches, each with a specialized user interface. Variants of Android are also used on notebooks, game consoles, digital cameras, and other electronics.

### History of Android

The code names of android ranges from A to L currently, such as Aestro, Blender, Cupcake, Donut, Eclair, Froyo, Gingerbread, Honeycomb, Ice Cream Sandwich, Jelly Bean, KitKat and Lollipop. Let's understand the android history in a sequence.

| Code name   | Version number | Initial release date | API level |
|---|----------------|----------------------|-----------|
| (No codename) <sup>[3]</sup>                      | 1.0            | September 23, 2008   | 1         |
| (Internally known as "Petit Four") <sup>[3]</sup> | 1.1            | February 9, 2009     | 2         |
| Cupcake   | 1.5            | April 27, 2009       | 3         |
| Donut <sup>[4]</sup>                              | 1.6            | September 15, 2009   | 4         |
| Eclair <sup>[5]</sup>                             | 2.0 – 2.1      | October 26, 2009     | 5 – 7     |
| Froyo <sup>[6]</sup>                              | 2.2 – 2.2.3    | May 20, 2010         | 8         |
| Gingerbread <sup>[7]</sup>                        | 2.3 – 2.3.7    | December 6, 2010     | 9 – 10    |
| Honeycomb <sup>[8]</sup>                          | 3.0 – 3.2.6    | February 22, 2011    | 11 – 13   |
| Ice Cream Sandwich <sup>[9]</sup>                 | 4.0 – 4.0.4    | October 18, 2011     | 14 – 15   |
| Jelly Bean <sup>[10]</sup>                        | 4.1 – 4.3.1    | July 9, 2012         | 16 – 18   |
| KitKat <sup>[11]</sup>                            | 4.4 – 4.4.4    | October 31, 2013     | 19 – 20   |
| Lollipop <sup>[13]</sup>                          | 5.0 – 5.1.1    | November 12, 2014    | 21 – 22   |
| Marshmallow <sup>[15]</sup>                       | 6.0 – 6.0.1    | October 5, 2015      | 23        |
| Nougat <sup>[16]</sup>                            | 7.0 – 7.1.2    | August 22, 2016      | 24 – 25   |
| Oreo <sup>[17]</sup>                              | 8.0 – 8.1      | August 21, 2017      | 26 – 27   |
| Android P   | 9              |                      |           |

## III. EXISTING MODEL

There are several ERP software (desktop/android) for retail stock management system.

### 1. Zoho Application



Figure 2

[6] Falls under both CRM and ERP category.It is a cloud-based inventory management software that helps to create and manage both sales and purchase order, and track the inventory.It also provides integration to other online sales channels.

### 2. Management System



Figure 3

Falls under ERP category.It is most complete management system made for android devices It

Table 1

provides features like user management, internal messaging, products, reports and articles.

### 3. Effia Soft



Figure 4

[7] It falls under both CRM and ERP category. It is compatible for both windows and android. It provides comprehensive and affordable billing and ERP software such as billing, inventory, procurement and e-commerce application as service.

### 4. Stock Management System



Figure 5

It falls under ERP category. It is a fully secure inventory management app for retailer and wholesaler. It provides additional feature of internal backup.

## IV. PROPOSED MODEL

- ✓ Add product :By scanning barcode of product through mobile camera.[5]
- ✓ E-billing: Retailer can send purchase bill to customer e-mail directly.[3]
- ✓ GST dashboard: Includes GST slabs for creating GST invoice for sales accurately in fraction of second using touch, barcode.
- ✓ Alert notifications.
- ✓ View inventory.
- ✓ User Login and Logout modules.

## V. REQUIREMENT SPECIFICATION

### Introduction

Software Requirement Specification is the starting point of the software development activity. It

includes an introduction that gives the purpose, scope and an overview of the system. This needs requirement by talking to the people and understanding their needs. It also includes a general description of the product perspective, product function and certain user characteristics of the system. It also specifies the overall functional requirements, performance requirements and design constraints.

### Software system requirement

- ✓ JDK 1.8
- ✓ IDE : Android Studio – ( Intel IJ Platform) / Eclipse
- ✓ Android SDK versions 2.2, 2.3.3 and 3.x
- ✓ Android Development Tool (ADT)

### Hardware system requirement

- ✓ Processor : Dual Core Onwards
- ✓ RAM : 4GB Onwards
- ✓ Hard disk space : 100GB
- ✓ Android Phone : V 4.4(Kit Kat) –API 19 Onwards

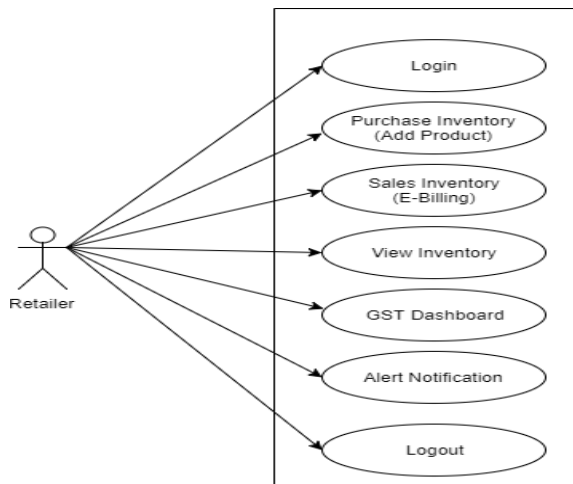
## VI. SYSTEM DESIGN

Retail Stock App mainly consists only one actor, which is Retailer.

### Retailer

By definition, a retailer, is an entity that sells goods such as clothing or groceries or cars directly to consumers, through various distribution channels with the goal of earning a profit.

He works on all the modules as listed below.



**Figure 6**

### **Login**

This module helps the retailer to log into the application. This is supported by a unique user id and password which enables security for the application.

### **Purchase Inventory**

Here, the products are added to the database by just scanning the barcode of the product through a mobile camera. In addition, the retailer also gets to know the number of products being purchased from the inventory. [5]

### **Sales Inventory**

The number of sales can be viewed in this module. This module has an additional feature of e-billing which enables the retailer in sending the bill directly to the customer's mail.

### **View Inventory**

This module helps to have a complete view of the inventory which includes the number of purchases, sales, quantity, expiry dates, profits and losses.

### **GST Dashboard**

Here, the General Service Tax (GST) is calculated for each item individually based on the government norms during billing. This section can be updated as and when the government rules are changed.

### **Alert Notification**

The retailer is notified whenever the stock of an item reaches the minimum amount of requirement or when the item crosses the expiry date.

### **Logout**

This is the final module which ends all the processes by just coming out of the application.

## **VII. CONCLUSION**

This paper briefs about the designing and technical details of Retail stock android Application. We presented information about the various modules involved in the App. This Android Application would be more feasible to create a platform that connects wholesaler to their retailer.

## **VIII. ACKNOWLEDGMENT**

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