

## Design and implementation of digital trading system

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### Abstract

The Concept of Digital trading (Shopping) system is an application where it is possible to buy or sell goods easily through a computer or mobile phone, often providing the best types of products to consumers. Digital Trading is also known as the search for a product by visiting the store's website, and then preparing the purchase order for the desired product. The system includes many types of goods such as homes, clothes, electronic devices, cars, accessories...etc.

The mechanism of Digital Trading system helps in buying of goods products and services online by displaying a list of products with their description such as price, location, quantity, and other information according to the type of product. The application developed in java programming language using the Android software development kit (SDK), and the computer or mobile must connect with the internet.

**Keywords:** shopping, software development kit, digital trading, product, application

### Introduction

Digital Trading is a relatively modern concept, the shopper may be concerned about fraud or theft, forget about any information about the purchase electronic account, such as a password, and may not trust that his or her personal information will be safe with merchants through The Internet, so many people deal with the idea of shopping online very carefully, which is necessary in this type of shopping because it helps to protect individuals from any operations of the monument. The application helps in building a website to buy and sell products or goods (used or new) online using internet connection, user can choose different products based on categories, delivery services.

### Software Development Kit (SDK)

A software development kit (SDK) is a set of tools used for developing applications provided by hardware and software providers. SDKs are usually comprised of application programming interfaces (APIs), sample code, documentation, etc. the development of an Android app on Java platform requires a Java Development Kit, <sup>[11]</sup>.

### Advantages of Digital Trading

The advantages of this system are to design and implement a small web shop for Digital Trading. It is designed for consumer who can buy goods at home by a computer, and the seller is able to sell their products and services without the huge amount of maintenance cost for the management and marketing in the real storefront.

The shopper can watch dozens of shops looking for something that may be difficult to find easily, compared to e-stores on the Internet that can save it in minutes, so the system can save time and effort

There are a lot of benefits to be gained from buying and selling online. These include:

- **Convenience:** It is very convenient to be able to do all your shopping from one spot - your couch!
- **Cost Savings:** With ever-increasing gas prices, shopping online saves you the cost of driving to and

between stores as well parking fees. You will also save time by avoiding standing in line, particularly around the holidays, when stores are very busy.

- **Variety:** The internet provides sellers with unlimited shelf space, so they are more likely to offer a wider variety of products than they would in brick-and-mortar stores.
- **No Pressure:** in a virtual or online store, there is any salesperson hovering around and pressuring you to purchase an item.
- **Easy Comparison:** Shopping online eliminates the need to wander from store to store trying to compare prices.

### Application Requirements

The system used here is an application that allows products and goods between your hands, as a general market in one place distributed within the application.

Shopping depends on a range of important requirements such as:

- Mobile phone to help the customer to search for the products that he wants online, then start preparing purchase form for a predefined time period.
- Communication with the Internet which is one of the necessary requirements that must be provided for successful digital trading is sure to provide a fast and permanent connection to the Internet before you begin any shopping step.
- The payment option upon receipt is a modern method of payment, which depends on building mutual trust between the buyer and the trader, after completing all the steps related to the purchase.
- The goods are delivered to the customer and paid for upon receipt by the person responsible for delivering the store requests customers.

### Implementation and Design

The application was created and built in Android programming language using Android Studio and Microsoft

SQL Server to build the Data Base data storage, which is used as a direct server to connect between Android Studio and Microsoft SQL Server.

This application also provides security with the use of Login-id and password, so that any unauthorized users cannot use your account.

At the beginning of the application, it must verify the phone connection to the Internet, and then activate GPS. The following diagram in figure (1) shows the most important pages of the system.

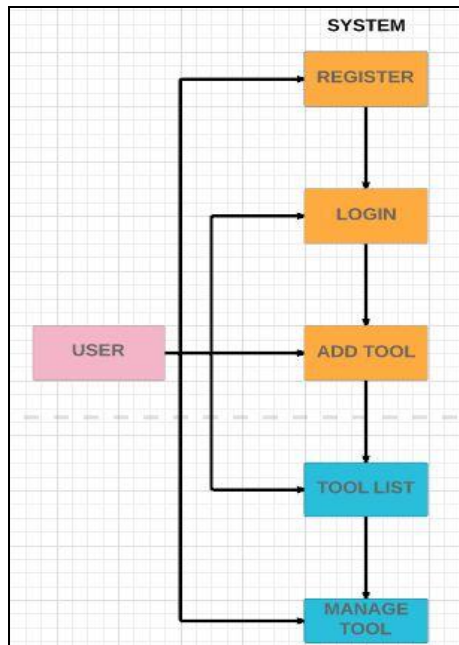


Fig 1: system layouts

The application consists of many pages, each page has a particular task as follows:

**Login Page**

This page allows the user to login to the system. If the user has an account, he will enter his own email and password, or If the user uses the application for the first time, he should click on the button “New User” to enter his User name and password and phone number, Then the information will have registered and saved into data base as shown in figure (2):

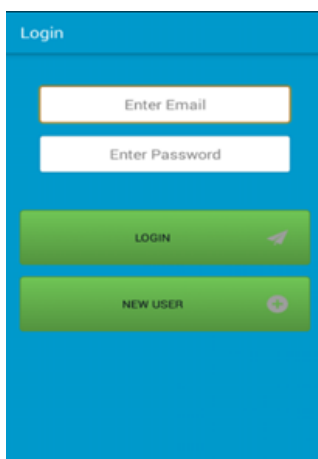


Fig (2.a): Login

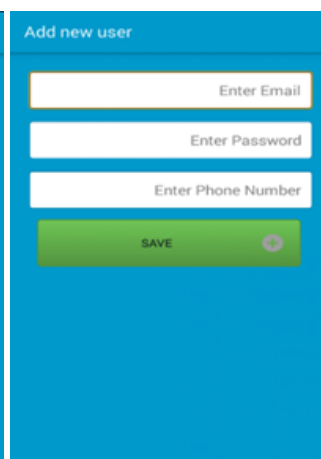


Fig (2.b): Register

After registering a list of all goods and products that will be sold will display with their details for each tool, including name, price, type, seller's location and other details according to the goods with a picture for that tool. As well as a new tool with its description can be added by authorized user through another page.

**Categories page**

As shown in figure (4), this page contains a category of goods such as cars, clothing, phones, books, furniture, etc.

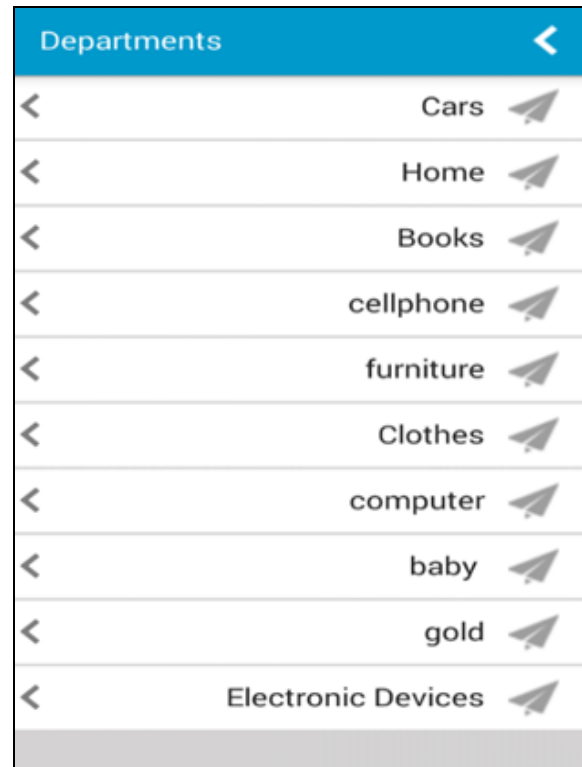


Fig 4: Category of goods

**Methodology**

In the proposed system customer need not go to the shop for buying the products. He can order the product he wishes to buy through the application in his Smartphone. The shop owner will be the admin of the system.

**The system presented with two modules**

**Administrator**

The administrator is the super user of this application. Only admin have access into this admin page. The administrator has all the information about all the users and about all products. He can add product or delete the products based on the stock of that particular product.

The admin will have a list view of all the users registered in the system. Admin can view all the details of each user in the list except password.

**Users**

A user must login with his user name and password to the system after registration, and he can view or add the desired product into his cart.

The application guides the user step by step, with comments of pictures, so any user can use the application easily.

The flowchart in figure (5) of the application clarifies the steps of the system's work:

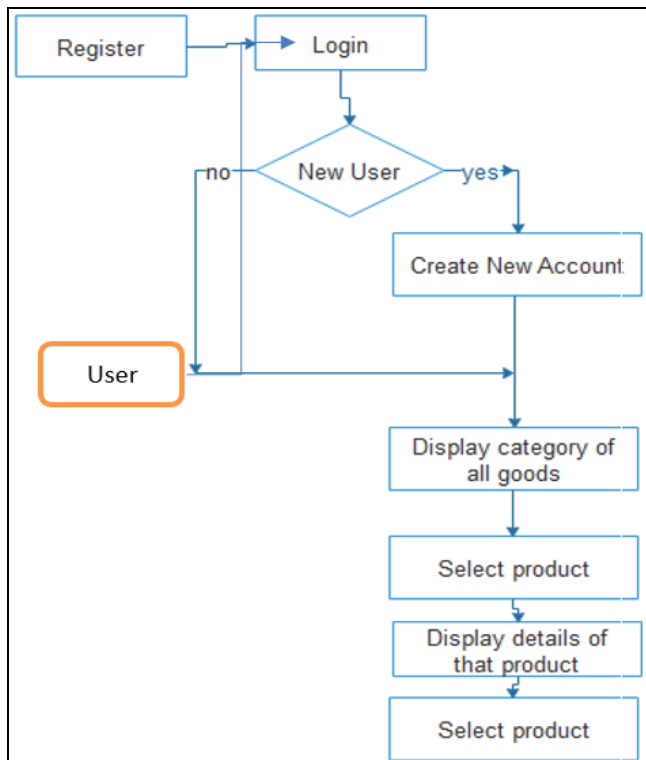


Fig 5: Design of the Digital Trading

### Conclusion

Using this application provides real opportunities for marketing, producing organizations and distribution facilities. These opportunities also include many other facilities such as:

1. Shortcut time and manual effort.
2. Increased interest in theology.
3. Few obstacles.
4. Interaction with the client.
5. Customer Authorization

### References

1. Chizoba Morah, "Shopping Online: Convenience, Bargains And A Few Scams" Investopedia Retrieved 20-11-2016. Edited.
2. Nielsen, "GLOBAL DIGITAL TRADING REPORT", 29-6-2010 Retrieved 20-11-2016.
3. June Edited, "Shopping online", BBC, Retrieved 20-11-2016.
4. Robert Siciliano, "Keep Your Identity Safe When Shopping Online" the balance, Retrieved 20-11-2016.
5. <https://developers.google.com/maps/documentation/android-api/start>
6. <http://www.androidinterview.com/android-custom-listview-with-image-and-text-using-arrayadapter/>
7. Shopping Online: Convenience, Bargains And A Few Scams
8. <https://www.investopedia.com/articles/pf/08/buy-sell-online.asp#ixzz511ixL6MW>
9. <http://www.skomer.co.uk/concept/online-shopping-2017>
10. <https://www.slideshare.net/Kkushum/online-shopping-system-69945887>
11. <http://dSPACE.cusat.ac.in/jspui/bitstream/123456789/8252/1/onlineshoppingsystem.pdf>
12. [/www.techopedia.com/definition/3878/software-development-kit-sdk](http://www.techopedia.com/definition/3878/software-development-kit-sdk)