An Online Shopping Application – "Shri Krishna Shoppy" – An Initiative towards "*Digital India Movement*"

I. Miss. Chetashri Prakash Purandare, II. Miss. Hemalata Pradip Chaudhari, III. Miss. Priyanka Laxman Khambayat, IV. Miss. Lina Santosh Bhole. V. Prof. D. D. Patil. VI. Prof. R. A. Agrawal

I, II, III, IV Third Year Engineering Students, V.Associate Professor, VI.Assistant Professor.
I, II, III, IV, V, VI. Department of Computer Science & Engineering,
Hindi Seva Mandal's, Shri Sant Gadge Baba College of Engineering & Technology,
Bhusawal - 425203, Dist. – Jalgaon, Maharashtra, INDIA

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Abstract: Our Minor Project aims for developing An Online Shopping Application, which is based on Android Operating System. A Glossaries products Shopping is an android application where users can purchase and order glossaries online. The system is developed with a user friendly and attractive GUI. It delivers a wide range of products in the store available online. Users have first login into the system to view the products and add them into the cart. It is mandatory to purchase product minimum 300 Rs.Then they can order product by making a secure online payment via credit-card, Paytm. If new product item is added to shop then it must notify user by notifications or messages. Once a user register himself then he/she can place order from home also without visiting the shop.

Keywords: Android Application Development, Digital India Movement.

1. INTRODUCTION

From past 2 decades, use of mobile devices has greatly increased, that has led to ease of carrying out day to day activities. This project is a Android based shopping Application for an existing shop. The project objective is to deliver the online shopping application into android platform. Online shopping is the process in which customer directly purchase products or services from a seller in real-time, without an intermediary service, over the Internet. It is a form of electronic commerce. This project is an attempt to provide the advantages of online shopping to customers of a real shop. It helps buying the products from anywhere through internet by using an android device. Thus the customer will get the service of online shopping and home delivery from his favorite shop. The daunting tasks faced in daily lives can now be accomplished by few of clicks on our Smartphone

1.1. NEED OF ONLINE SHOPPING Apps

[5]Online shopping is considered to be a very helpful way of buying products through the internet especially during the holidays and clearance seasons. It allows customers to enjoy a wide variety of products and items. It also provides customers with a good customer service that also occurs online. Online purchasing items and products is a very easy task to do. It is now playing very important role in everybody's life especially elderly people, as well as people with a very busy life schedule. It provides a very comfortable service for its customers, by being able to save the item in the personal shopping bag, and buy it later on.

1.2. OBJECTIVES

According to a recent survey, we conclude that shopping apps are only used in Branded Shops which sell some branded products such as watches, Clothes, Shoes and many more products. But the small shopkeepers are a far mile away from this. According to the "*Digital India Movement*" launched by our Prime Minister, Shri. Narendra Modiji, We wish to contribute to this movement by developing an Online Shopping for Small Shops/Shops in a town/Shopping Mall on android platform to purchase items in an existing shop at lower affordable cost. Since Android is the well known technologies used today, we decided to choose Android Development as a platform for development.

1.3. FEATURES

The Project possesses the following few features as
- ✓ Simple and Easy to Use
- ✓ Lower Cost
- ✓ Robust
- ✓ Secure
- ✓ Easy to Handle Customer Information
- ✓ Can be installed easily on an Android Mobile
- ✓ Item list is maintained with price details.
- ✓ Less Memory Requirements.
- ✓ Easy to track details of any products at any given instance
- ✓ Customer can place order from Home also. (i.e. – No Need to visit the shop to purchase any item)

2. Android Operating System

Android is an operating system developed for smart phones and tablets. Android is based on Linux kernel and Java byte code are executing with help of Dalvik Virtual Machine (DVM)[1]. Absence of GNU C Library and some functions differentiate it from being Pure Linux. Android's source code is released by Google under open source licenses.

Android software environment consists of-
- ✓ Linux kernel
- ✓ Libraries and Dalvik Virtual Machine
- ✓ Application Framework
- ✓ Applications (built-in and custom)
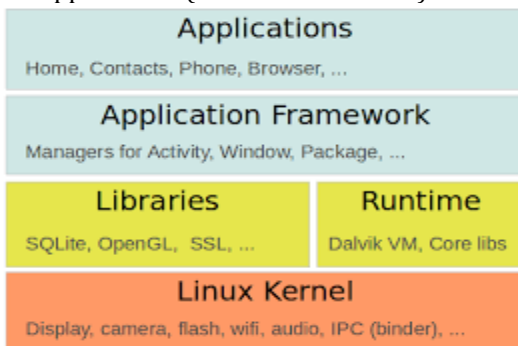
Figure 1: Android Development Framework [4]

2.1. Android Features:-
- ✓ Open Source Technology
- ✓ Highly customizable nature
- ✓ Reasonable Price
- ✓ Good Networking Facilities
- ✓ Wireless Application Installation
- ✓ Multimedia Support is Good
- ✓ Hardware and Software features
- ✓ Full control over OS.
- ✓ Maps & Navigation.
- ✓ Widgets and many more

3. SQLite

SQLite is an open-source relational database i.e. used to perform database operations on android devices such as storing, manipulating or retrieving persistent data from the database. It is embedded in android by default. So, there is no need to perform any database setup or administration task. *SQLiteOpenHelper* class provides the functionality to use the SQLite database.

[10]SQLite is an amazing library that gets embedded inside the application that makes use of. As a self-contained, file-based database, SQLite offers an amazing set of tools to handle all sorts of data with much less constraint and ease compared to hosted, process based (server) relational databases. When an application uses SQLite, the integration works with functional and direct calls made to a file holding the data (i.e. SQLite database) instead of communicating through an interface of sorts (i.e. ports, sockets). This makes SQLite extremely fast and efficient and also powerful thanks to the library are underlying technology.

3.1. SQLite Features:-
- ✓ Open Source Relational Database
- ✓ Compact libraries
- ✓ Server less
- ✓ No setup or administration required
- ✓ Small in size and light weight
- ✓ Self Contained

4. IMPLEMENTATION ALGORITHM

4.1. Need of pattern matching

Pattern matching is the process of checking a perceived sequence of string for the presence of the constituents of some pattern. In contrast to pattern recognition, the match usually has to be exact. The patterns generally have the form sequences of pattern matching include outputting the locations of a pattern within a string sequence, to output some component of the matched pattern, and to substitute the matching pattern with some other string sequence (i.e., search and replace). Now a day's every people use the various application to get the desire results. But it is not necessary that peoples will only searching for text every time. They may want different type of data like audio, image and video. To find such kind of data we need better technique for searching. Pattern matching will help to find right and appropriate result [9].

4.2. PATTERN MATCHING

The Knuth – Morris – Pratt text searching algorithm (or KMP algorithm) searches for occurrences of a "word" W within a main "text string" S by employing the observation that when a mismatch occurs, the word itself embodies sufficient information to determine where the next match could begin, thus bypassing re-examination of previously matched characters. The KMP matching algorithm uses degenerating property (pattern having same sub-patterns appearing more than once in the pattern) of the pattern and improves the worst case complexity to O(n). The basic idea behind KMP's algorithm is: whenever we detect a mismatch (after some matches), we already know some of the characters in the text of next window. This is advantage of this information to avoid matching the characters that we know will anyway match [12].

Example:
- ✓ txt = "AAAAABAAABA"
- ✓ pat = "AAAA"

We compare first window of **txt** with **pat**
- ✓ txt = "**AAAA**ABAAABA"
- ✓ pat = "**AAAA**" [Initial position]

We find a match. This is same as Naive String Matching.

In the next step, we compare next window of **txt** with **pat**.

- ✓ txt = "**AAAAA**BAAABA"
- ✓ pat = "**AAAA**" [Pattern shifted one position]

This is where KMP does optimization over Naive. In this second window, we only compare fourth A of pattern with fourth character of current window of text to decide whether current window matches or not. Since we know first three characters will anyway match, we skipped matching first three characters.
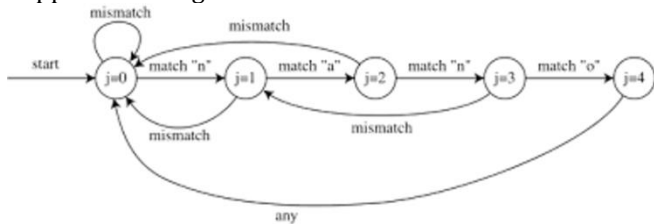

Figure 2: Working of KMP [12]

5. Experimental Setup: Methodology

Firstly the customer have to login with customer id and password. If they don't have account in this application, signup with their details such as name, address, email id, phone no and password. App will send OTP on mobile no for confirmation. After login in the application, the list of items will be provided. Customer can easily select the product and can also view detail of that product. Customer will add that product into the cart and total bill will generate. Then the customers have to select the payment options like Paytm, Debit card and cash on delivery.

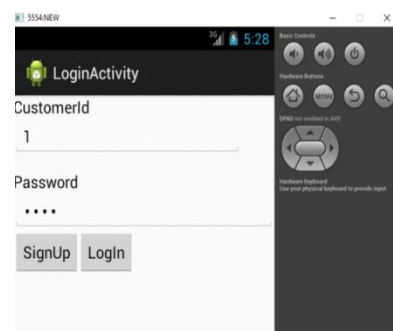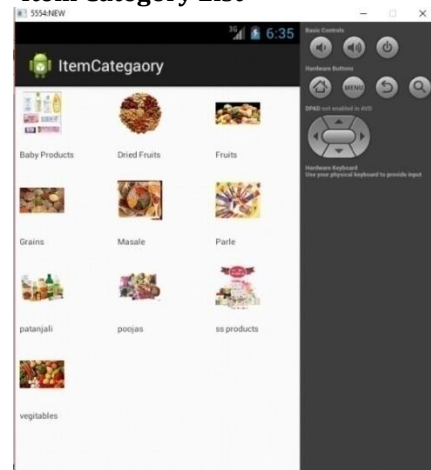## 5.1. Experimental Results & Snapshots

5.1.1. Welcome Page

5.1.2. SIGNUP Form
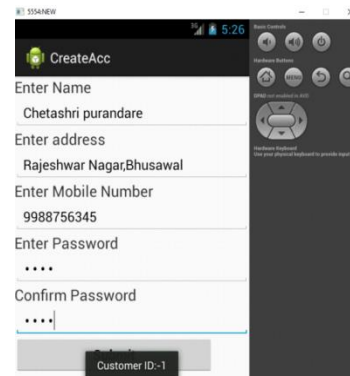
5.1.3. Login Form

5.1.4. Item Category List

6. CONCLUSION

The project entitled "*An Online shopping system for Shri Krishna Shoppy, Bhusawal*" was completed successfully. The system has been developed and is running to the fullest satisfaction of the end user. Some of the features are easy to use and cost-efficient and less time consuming. The purpose of this project was to develop an android application for purchasing items from small shop online thus achieving the goal of "*Digital India Movement*". This project helped us in gaining valuable information and practical knowledge on several topics like designing of android applications, and management

of database using SQLite. The entire system is secured. Also the project helped us understanding about the development phases of a project and software development life cycle. We learned how to test different phases/modules of project.

7. FUTURE SCOPE

According to the user needs if they wish to add few more products to their shops the database needs to be modified. In Future, we are thinking to develop an extended database migrating from SQLite to MYSQL. The items so far purchased by the customer will be maintained in the app that can be used by the customer in the next purchase. The transactions that will take place frequently with the shop's database will be made secured. This will ensure no modifications in the shop's database either by the customer or by any unauthorized user.

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