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GST rating assist using android studio

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Abstract-With the growth of mobile phone technology, the android applications[5] are very essential in the advancing world. This paper involves an application for the android base operating system for a public will provide the detail and accurate information about goods and service tax laid down by the Government of India. Goods and services tax is an indirect tax levied on the sales of goods and services. Goods and services are divided into five tax slabs for collection of tax-0%, 5%, 12%, 18% and 28%. This application reduces the time complexity and inefficiency of the previously existing systems.To run this application the user must ensure the availability of internet connection. The proposed app is simple yet powerful with an integrated platform that includes tax percentage for various products.

Keywords: Android OS, Android SDK, android studio, core JAVA, XML.

I. INTRODUCTION

Android is a mobile operating system developed by Google based on a modified version of the Linux kernel primarily for touchscreen devices. Android based mobile applications are developed by using JAVA language codes. The Android SDK provides the tools and APIs which are necessary to develop an application on the Android platform.

This mobile application is designed to make quick manipulation for users to calculate and verify the goods and service tax. In this android app the user needs to select the product type as well as the product name for which they have to verify the goods and service tax. In addition to that, that the user has to feed the original cost of the product (excluding of tax) so that the GST percentage for that particular product will be generated automatically and the required GST price along with the net price (with GST) for the particular product will be calculated by using android studio IDE and Java Programming Language.

II. EXISTING SYSTEM

This section involves the related researches, and the methodologies used in other systems [1] [15].

At present, there are some existing systems with the similar scope of calculating and verifying the Goods and Service tax imposed on various goods and service. Someof the existing applications such as

sales tax, VAT, GST calculator, GST calculator, GST tax calculator 2017, simple GST calculatorare described below briefly.

1. SALES TAX, VAT, GST CALCULATOR

This application is designed to carry out the sales tax, VAT or Goods and Service tax calculation.In this the user has to manually enter the Market Retail price and tax percentage of a particular item. Then by clicking on the "ENTER" buttonon the keypad, the tax amount of that particular tax percentage will get loaded. Then the tax amount and the Market retail Price will get added together to display the net price of the required item. The advantage of this app is that it includes less complexity for developers.

2. GST CALCULATOR

This application includes two different types of calculators namely calculator 1 and calculator 2 along with a quick guide. In calculator 1,the client has to enter the original cost of the product, either select the tax percentage from the drop down list [8]containing various tax percentages, or to type the tax percentage manually, andthe client also needs to select either "Add GST" or"Remove GST" to carry out the calculation. Then by clicking on the calculate button the GST price and the net price of the product gets calculated.Thecalculator 2 is similar to that of a normal mobile calculator containing the respective tax slabs with which the user can manually carry out tax calculations.The "Quick Guide" tab contains the list of Goods and Services categorized under respective tax slabs namely 5%, 12%, 18%, 28%. The major advantage of this application is that the Quick guide meant for user verification.

3. GST TAX CALCULATOR 2017

This application is also meant for calculating the Goods and Service tax. In this the clients have to feed their bill amount in rupees and also the Goods and Service tax percentage manually. After this process,by clicking on the calculate button, the GST amount of that GST percentage gets loaded. The requirement of less storage is the major advantage of this application.

4. SIMPLE GST CALCULATOR

This application includes two types of calculators one is "simple GST Calculator" and the other is GST calculator". In calculator1, the client has to feed the original cost, GST %and the product name manually and the user has to select either to add GST or to remove GST. By clicking on the Calculate button, it gives the GST amount of that GST percentage. In calculator 2, the client has to select either an intrastate or an interstate,and then the user needs to feed the product price,profit, central GST%,state GST % and IGST % manually. By clicking on the calculate button, it will display the GST details about manufacturing cost, wholesaler cost and consumer cost. This application has the advantage of adding or removing of GST.

A. DRAWBACKS OF EXISTINGSYSTEM

1. The existing systems are not user friendly[9] because the tax percentages of either goods or services have to be given manually.
2. Manual feeding of tax percentages may incur greater chance of errors.
3. Consume more time for calculation.
4. Interruption of advertisements.

III. PROPOSED SYSTEM

The proposed system consists of an efficient development of an android application to reclaim the drawbacks [9]of the existing systems.This application is specially meant to calculate and verify the Goods and Service tax charged on Goods and Services at the national level. In this application,it is not mandatory for the user to remember the tax percentage, i.e., the tax percentage will get loaded automatically based on the selection of product type and product name. By loading the tax percentage automatically the proposed application becomes more user friendly and effective and in this manner it recovers the drawbacks of the previously mentioned applications.

This proposed application requires the availability of internet connection [2].Because in proposed system the data are stored and retrieved from the cloud database.This proposed app permits to update [3] the tax percentages of the Goods and Services in case of any further tax revision.The proposed app is built with a registration and login page for security purposeand for authentication [4].The login page is filled up with email id and password.This email id and password are stored in a cloud database.The calculation page is designed with the following text boxes and buttons [8]. "Product Type","Product Name","Display %" button,"GST PERCENTAGE", "enter original cost","Calculate"button, "GSTAmount" and "Total amount". With successful login, the calculation page gets opened up, in which the user needs to select product type and product name to load the tax percentage automatically. Then the original cost of a product should be entered and by clicking on the "Calculate "button [8], the GST price and the net price of the selected product is then calculated.

The proposed application reduces the hectic work of the user [6]and it is implemented by using JAVA programming language and Android studio software [10].

The proposed app is built with a registration and login page for security purposeand for authentication.

A. BLOCK DIAGRAM

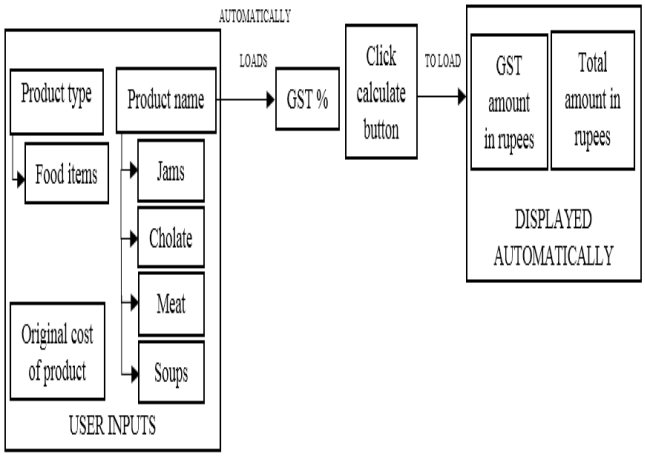

Fig.1. Block diagram of proposed app

B. DESCRIPTION

In the proposed application, the user should select the product type i.e., the category of the product. Then, based on the selection of product type, list of products which belong to the selected product category will be displayed, from those products the user must select the required product. The GST % of the particular product gets loaded automatically when the product is selected . After the selection procedure the user must feed the original cost of the product manually. When all of these user inputs were finished, by clicking on the calculate button, the GST

amount of that particular tax percentage and the totalamount of the specified product will be displayed automatically.

C. TECHNOLOGIES USED

1.CLOUD

The cloud service allows the users to store files online, so that they can access them from any location via the Internet.

2. JAVA

JAVA is a general purpose computer programming and object oriented language. Java code can run on all platforms that support Java without the need for recompilation.

3. XML

XML stands for Extensible Markup Language. It encodes the documents in a format which may be both human readable and machine readable.

4. ANDROID OS

The Android operating system, is a mobile operating system developed by Google.It allows the user to produce the innovative apps and games for mobile gadgets in the Java language environment.

D. SOFTWARE REQUIREMENT

1. ANDROID STUDIO

Android studio is an official Integrated Development Environment (IDE) [12] for Google's Android operating system built on Jet Brains' IntelliJ IDEA software and designed specifically for Android development. Android studio has the following features

- Intelligent code editor
- Fast and feature-rich emulator
- Auto saves
- Preview layout XMLs
- Support Gradle

2.ANDROID SDK

The Android SDK (software development kit) is a set of development tools used to develop applications for Android platform. The Android SDK includes the following:

- Required libraries
- Debugger
- An emulator
- Relevant documentation for the Android application program interfaces (APIs)
- Sample source code

E.IMPLEMENTATION

1. Ensure the availability of internet connection.

2. Open the application and click on the "USER "button.

Fig.2.Welcome page of proposed app

3. Click on the "NEW MEMBER "button if not registered already or else click on the "ALREADY MEMBER" button.

Fig.3.User page of proposed app

4. Fill out the required details in the sign in page of user.

Fig.4.Registration page of proposed app

5. Aftersuccessful registration, login with registered emailid and password in login page.

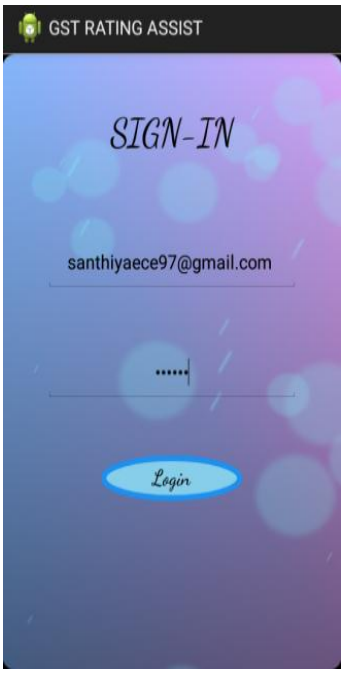

Fig.5.Login page of proposed app

NOTE: The same step will be followed when we click on the "ALREADY A MEMBER" button.

6. After successful login, "GST CALCULATION "page gets opened.

- Now select product type, product name and fill out the original cost.
- Click on the "GST%button, to load the tax percentage automatically.
- Click on the "CALCULATE" button to load the GST price and the net price of the product.

Fig.6.Calculation page of proposed app

F. CODING

This section represents the coding of the calculation page of the proposed app.

```
Public class Calculation extends Activity {
EditText ed1;Spinner sp1, sp2;
TextView tv1, tv2, tv3;Button b1, b2;
String str2;String Product, GST, details;
Array Adapter<String> spa;

PublicstaticStringurl="http://cyberstudents.in/Android/201718staff/Santhosh/GSTCALCULATION/userRegister.asmx";
Private static final String Soap_Name = "http://tempuri.org/";
Private static String Soap_Method = "";
Private static String Soap_Url = "";
@Override
Protected void onCreate (Bundle savedInstanceState) {
super.onCreate (savedInstanceState);
SetContentView (R.layout.activity_calculation);
tv3= (TextView) findViewById (R.id.textView1);
ed1= (EditText) findViewById (R.id.amount);
sp1= (Spinner) findViewById (R.id.spinner1);

 b1= (Button) findViewById (R.id.search);
 b2= (Button) findViewById (R.id.calculate);
 sp2.setOnItemSelectedListener
 sp2.getSelectedItemPosition ();Select Data ();
 b2.setOnClickListener
 String amount =ed1.getText ().toString ().trim ();
 String percentage=tv1.getText ().toString ().trim ();
 Float amt=Float.valueOf (amount);Float per=Float.valueOf (percentage);
 Float result=amt*(per/100);String finalgst=String.valueOf (result);
 Float GST amt= amt+result; tv3.setText (finalgst);
 Double round Off = Math. Round (GST amt * 100.0) / 100.0;
 String gst_string=String.valueOf (round off);
 tv2.setText (gst_string);
```

IV. RESULTS ANDDISSCUSSION

This android application provides the following results [7]:

- Stronger security.
- Reduces time complexity.

- Makes manipulating process easier.
- Easy to update in case of tax revision.

The result of the test and experimental research include three components: file activity_main.xml gives the design of the layout/screen, file strings.xml it contains all the text that we use in our application such as the names of buttons, labels etc., and file main activity. JAVA it is a Java file and it is used to run our application [14].

V.CONCLUSION AND FUTURE WORK

This paper presents about goods and service tax calculation and verification application by using android studio. This application can be incorporated into all android based mobile which are above 4.0.3 version [14]. This application is considered as an efficient one when compared to all other similar applications.

The future plan is to improve the application [16] so that it can be extended to apple IOS [13].

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