

# Secure GST Report Generation Software with IP Blocking Security

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**Abstract-** *Now a day's, India must pursue taxation policies that would maximize its economic efficiency and minimize distortions and impediments to efficient allocation of resources, specialization, capital formation and international trade. With regard to the issue of equity it is desirable to rely on horizontal equity rather than vertical equity. While vertical equity is based on high marginal rates of taxation, both in direct and indirect taxes, horizontal equity relies on simple and transparent broad based taxes with low variance across the tax rates. The best step put towards the growth is that the Indian government implements GST in India. GST is implemented in India on 1<sup>st</sup> July, 2017. GST is the only indirect tax that directly affects all sectors and sections of our economy. In this, GST include indirect approach. According to GST, every product has same tax. It is not only help s in setting an international standard but also ensures transparency throughout the tax structure right from the manufacture to consumer. The aim of the paper is to develop efficient and effective system to generate GST reports automatically. Goods and Service Tax (GST) is one of the most crucial tax reforms in India*

**Keywords-** CGST/ SGST, GST, GST Add, GST Remove.

## I. INTRODUCTION

GST (Goods and services tax) was applied in India on 1st July 2017. The Government applied tax on every individuals or product, income, or activity. GST is not only make the tax system simpler but also help increased tax compliance, reduce the tax outflow in the hands of the consumers, boost tax revenues, make exports competitive and provides an national market for goods and services. GST overcome the drawbacks of existing tax structure. The cascading effect or double taxation is removed by GST. Every manufacturer company, businessman and retailer has to paid tax for that they need to calculate GST and generate the GST bill. For that they use the different GST software for GST billing.

The proposed GST software also used for calculating GST rate and generates report. The GST Software generates report related to seals and purchases which are send to

government. This system will provide the automatic GST report generation using cloud based security. Every item related information is stored in cloud for security purpose

In proposed system the IP-Block concept utilized for secure the system. That means when any unauthorized person is trying to access system more than two or three times, the system will automatically block the IP address of that person. The location of that person will also track and sends to owner's registered mobile number.

## II. LITERATURE SURVEY

### **What is Tax?**

A tax is nothing but a financial mandatory charge upon an individual or on taxpayer by a government on a product, income or activity. Taxes are acted by state or the functional equivalent of a state. Taxes are direct or indirect and may be paid in money or as its labour equivalent. If tax is applied directly on personal or corporate (business), then it is a direct tax. If tax is applied on the price of a goods or service, then it is called an indirect tax. Taxes in India are applied by the Central Government and the State Governments. Some of the minor taxes are applied by the local authorities such the Municipality<sup>[8]</sup>.

### **Limitations of Direct and Indirect Taxes**

In India, there were different kinds of taxes. But there were some limitations with those taxes. There was more complexity in taxation. The disadvantages about direct taxes are inconvenience to taxpayer for paying tax in onetime, the adverse effects on wishes of taxpayer to work and save, possibility of tax avoidance. The most crucial tax about this tax is the taxpayer has to elaborate documents on their income and spending. The direct taxes are directly imposed on a person. They cannot be shifted. So, this tax is unpopular<sup>[8]</sup>. The restrictions about indirect taxes are too expensive to collect from large number of people, imposition of indirect taxes on a product increase its price, these taxes negate the principle of ability to pay and therefore their burden is more on poor people.

### **Concept of GST**

GST is nothing but Goods and Services Tax. The GST is introduced in India on 1st July 2017. It is a consumption based tax charge on sale, manufacture and consumption on goods services. It Replace all indirect taxes with Goods and Services Tax by State and Central Government. GST means a single tax rate is applied throughout the country. In GST platform, Government merge the central-level tax (sales, service tax) and state-level tax (e.g. entertainment tax, entry tax, transfer tax and luxury tax<sup>[3]</sup>. The replacement of the Central tax system of the Central Government by Central Value Added Tax (CENVAT) and Sales tax system of the State Governments by the State VAT. GST will Introduced at the state level, the additional burden of central VAT and services tax would be largely removed and major Central and State taxes will get subsumed into GST which will reduce the multiplicity of taxes. Thus it marks a major improvement over the previous system of VAT<sup>[5]</sup>.

### **Variations in GST Rate**

In GST, goods and services Taxes are at the following rate like 0%, 5%, 12%, 18% and 28% .GST is imposed on Different rate on different item. The rate of GST on cinema ticket is 18% when its price is less than 100 and 28% when ticket price is greater than 100. The rate of tax is 12% for construction site or in industries. GST is not imposed or untaxed for some product such as, dairy product, Vegetables fruits etc. GST will increase the tax for most consumer Goods and services in India like food, hotel, industries, cinema ticket etc.<sup>[11]</sup>.

The GST has significant impact on food item those who are living under subsistence level. The 4% VAT is apply on food product which include meat, prepared meals for home consumption, restaurant meals and beverages. GST is also applied on construction and housing sector because this sector is a significant contributor to national economy. There have been also suggestions to including GST on rail sector for all inter-state transformation of goods and services. In some country GST is not charged on financial services but in India GST is also imposed on financial services<sup>[1]</sup>.

### **How GST Works?**

In GST only a registered person can charge and collect GST on the taxable supplies of goods and services made by him. GST is charged on the value or selling price of the products. The amount of GST incurred on input (input tax) can be deducted from the amount of GST charged (output tax) by the registered person<sup>[12]</sup>.

It follows a Multi-stage collection mechanism. The tax in GST will be collected at every stage and the credit of tax paid at the previous stage is available as a set-off at the next stage of transaction. This helps to eliminate tax on tax system<sup>[13]</sup>.

The business adds the GST to the price of the product. When customer buys a product he wants to pay a sells price plus GST and this GST is collected by seller or shopkeeper and forwarded to Government<sup>[14]</sup>. The government distribute the taxes among different model like: CGST (Central GST), SGST (State GST), IGST (Interstate GST).

CGST is the centralized part of GST that subsumes the present central taxations and levies- Central Sales Tax, Central Excise Duty, Services Tax, Excise Duty<sup>[15]</sup>. SGST includes the State Sales Tax, Luxury Tax, Entertainment Tax, Entry Tax and other taxations related to the movement of commodities and services under state authority through the one uniform taxation<sup>[15]</sup>.

IGST is charged on the supply of commodities and services from one state to another state. For example, if the supply of goods and services occurs between Gujarat and Maharashtra, IGST will be applicable<sup>[4]</sup>.

When sells in one state and purchase in same state e.g.: Goods moving from Mumbai to Pune i.e. within state the tax is distributed in CGST and SGDT. The taxes are distributed and forwarded. Sale in One State, Resale in another State i.e. Goods are moving from Maharashtra to Gujarat then IGST will be applied and The IGST goes to the Central Government and the State Government<sup>[9]</sup>.

## **III. HELPFUL HINTS**

### **A. Goals and Objectives**

- To generate automatic GST reports related to purchases and sales.
- To produce Excel sheets of GST reports.
- To provide Harmonized System Nomenclature(HSN) code of each item it's sub item.
- To protect system from unauthorized access.
- Authentication process to keep information secure.

**A. Mathematical Model**

The S be the system,

$$S = \{I, F, O\}$$

Where,

I - Set of Input

F - Set of Function

O -Output

$$I = \{Q, IR, HC, GP\}$$

q0 = (Q) Total number of item i.e. Quantity.

q1 = (IR) Rate of one item.

q3 = (HC) HSN code of the item.

q4 = (GP) Percentage of GST which is applied where, GST is 5%, 12%, 18%, 28%.

$$F = \{TA, AG, RG, DG, IB\}$$

f0 = (TA) Total Amount

$$\text{TotalAmt} = Q * IR$$

f1 = (AG) Add GST

$$\text{GSTAmt} = \text{TotalAmt} * \text{GST} / 100$$

$$\text{FinalAmt} = \text{TotalAmt} + \text{GSTAmt}$$

f2 = (RG) Remove GST

$$\text{GSTAmt} = \text{TotalAmt} - \text{TotalAmt} / (1 + \text{GST}/100)$$

$$\text{FinalAmt} = \text{TotalAmt} - \text{GSTAmt}$$

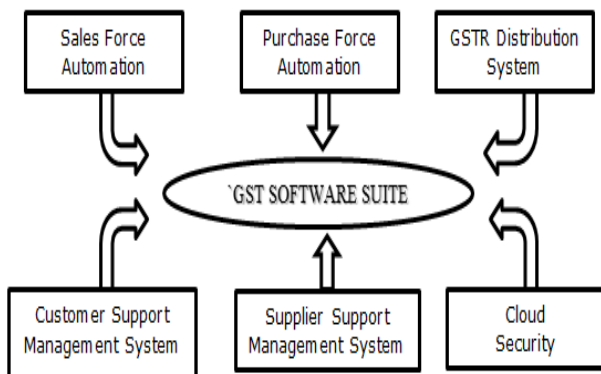
f3 = (DG) Dividing GST in central and state government.

f4 = (IB) Blocking IP address of unauthorized user.

$$O = \{R\}$$

R = Output gives accurate final GST report and IP address as well as location of unauthorized user.

**IV. ARCHITECTURE**



*Fig. System Architecture*

The project is totally based on GST. GST is nothing but combining all the taxes in one pocket. The project is the software system which generates all sales and purchase GST reports. The GST is calculated based on two types i.e. Add GST and Remove GST. The software is stored on the cloud so it can be accessible by both desktop and mobile user

simultaneously. The software hosted as online so the measure issue comes in front is the security to the software. For preventing the software from unauthorized access or brute force attack, we use the concept of IP Blocking. The algorithm of IP blocking describe in below section briefly. For implementation of the project we used following technologies:

1. WAMP Server
2. Web Development

We can use software online as well as offline. If we want to use software offline we must have to start WAMP server first and for online use of software visit the URL “mnkgst.revatech.in”. The MySQL is inbuilt database comes with WAMP server so it is used for storing the data when software run as offline software.

**V. ALGORITHM**

The cloud based system needs security by unauthorized access. The software is stored on cloud so it easily accessible anywhere at any time on mobile phone as well as desktop. As the software stored on cloud anyone can try to access the system for unauthorized used, so by blocking the IP address of unauthorized user and tracking the location of that user we secure the system. The algorithm for blocking IP address of unauthorized user is given,

Start the Process

H=Maintain the IP address History;

U=User enter into the website;

I=Store the Each Client IP address;

Check each time U in server,

If (I==H)

```

    {
        Else If (I<5)
        {
    
```

IP=Get the IP address;

MAC 1=IP+MAC // Read Previous MAC

Algorithm Server=MAC1;

Client=MAC1; If (Server=Client)

{  
Accept the request from the client Send the response for the request.

}

Else

{  
Add the User IP to the Attacker List, Print :  
“Access Denied”

}

```

}
}
Else
{
Accept the request from the IP Send
the response for the request.
}
End
    
```

**PERFORMANCE ANALYSIS**

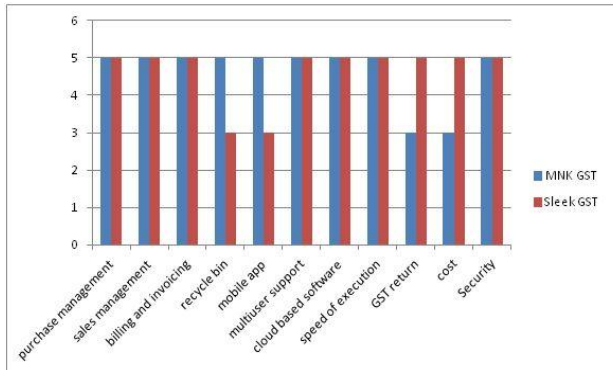


Fig. Performance Analysis Graph

**RESULT SET**

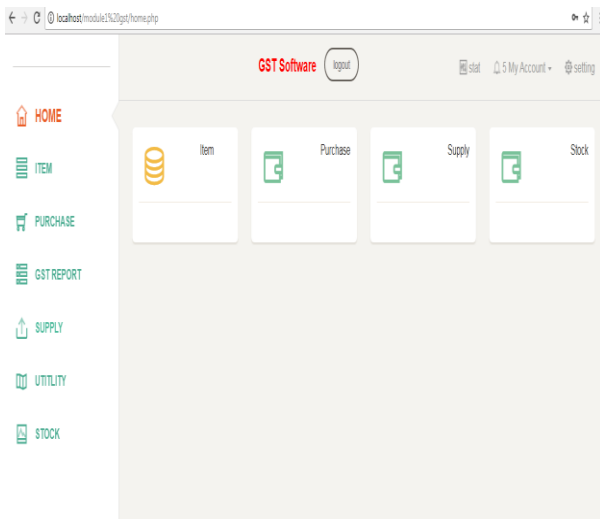


Fig : Dashboard

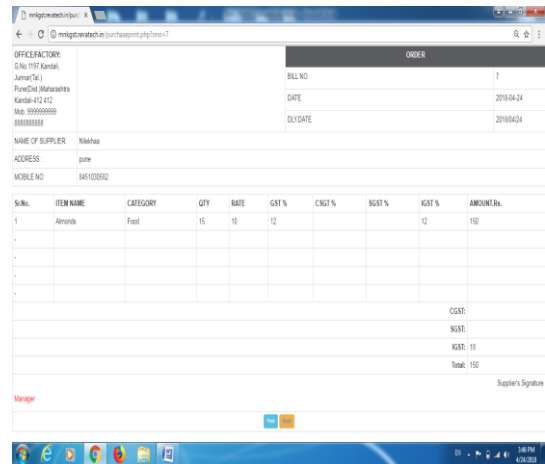


Fig : Purchase Report

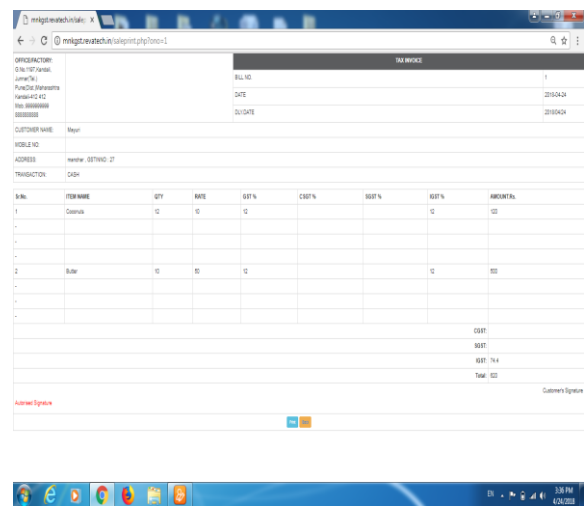


Fig : Supply Report

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