# Analysis of Implementation of GST

**Ananth James, Arathi M, Anu Shaju Ainikkal**

Department of Computer Science and Engineering, Sahrdaya College of Engineering and Technology, Thrissur, Kerala, India

## ABSTRACT

Huge amounts of data is produced every second of the day by governments of different countries. This data can be used to analyse the trends and patterns in the way people react to different reforms. GST has been one such drastic and life changing reform. The analysis of how this new bill has affected the citizen of our country can provide with important information. The system provides an intricate and in depth study of GST (Goods and Service Tax) and finds out through the process of data mining how this new bill on taxation affects the people of different states. This information will be analysed using the tools of data mining and displayed in visually appealing and understandable forms such as graphs, pie charts, word clouds etc

**Keywords:** Data analysis, Visual representations, Twitter analysis, trends and patterns, customer behaviour.

## I. INTRODUCTION

The advent of the "Data age" has enabled us to extract information from humongous amounts of data. Huge governments can produce large Terabytes of data on a per hour basis. This data can be utilised to recognise patterns in the manner certain group of people behave financially or otherwise. Such information can be crucial for the understanding of the economical progress of the country and the ways the various aspects of the economy may get affected. This study of trends can lead us to surprising revelations and also enable us to predict the future.

## II. SYSTEM ANALYSIS

Our system analyses and creates visual representations to portray the different effects of implementation of GST on Indian lives. GST, being a new and improved form of taxation system may be very difficult for the general public to understand. The system that we are creating converts the theoretical and literal descriptions of the effects of GST into graphs and charts. This gives a visual illustration of this new taxation system making it

simpler and easier for the citizen to make decisions on the economic progress. Our aim is to make the general public aware of the positive and negative effects of GST. We need to make this data easily available, and for this we chose the android platform as about 75% of smartphone users are android users.

Our application includes tools to calculate GST amount from the MRP and to determine the GST from price of product. The user is meant to choose the product name and provide the MRP of the product. The GST calculator will find the GST rate on the particular good or service and also find the final price to be paid. This enabled the users to cross check if the price asked for the good or service is valid. The main focus is on the visual representations, which are based on verified data. These representations help the user to easily understand the effects of GST without the need to study the boring details. Our analysis program uses the data received from credible sources like the central government repositories to create these visual representations. These representations might include bar graphs, line graphs, histograms, word clouds etc. These visuals

are then stored in a server which passes them to the applications with the user on request. This allows us to reduce the size of the application on user devices and thus helps in the smooth running of the app even on older model devices.

## III. MODULE DESIGN

The system consists of three main components, which are the analyser program, the server and the user application. These three components work together to deliver the user the required output. Out of these, the most significant part would be the analyser program. This program takes in the data, processes it and outputs the visual representations. There are various steps involved in this data mining and visualisation process. The visuals created by the program is uploaded to the server. The server acts as a bridge between the analysis programming and the user's interface.. It helps in abstracting the details and complications behind the creation of these visual representations. The server provides these output visuals from the analyser to the users via the android app on request.

The app is the part which interacts with the user. The easily understandable visuals from the server are displayed in the app. Apart from displaying these representations, the app also features tools to calculate the GST when the price of product is provided and to derive the GST amount from the MRP. These are simple, yet useful tools which the users can use to clearly determine the amounts to be paid and avoid all ambiguity regarding pricing after implementation of GST.

## IV. RESULTS

The system was implemented on an Android mobile device. Various buttons on the Android application was successfully able to display the appropriate graphs that were required. The GST calculation portion of the software was successfully able to

calculate the amount of GST that is added to a particular amount of any commodity that is bought. Various graphs were created using Python as the coding language in PyCharm as the IDE using data from government databases that are available on the web and analyzed to obtain the changes in various economic aspects post the implementation of GST, the new tax regime.
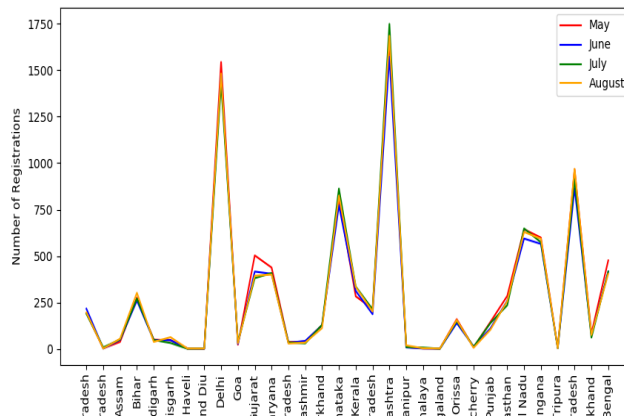


**Figure 1.** A graph representing the changes in company registrations in different states during different months

The required changes are made on the graph sizes, frequency of the x and y axes etc as the needs be. Large databases in the CSV formats are traversed and the information like the trends and patterns in these databases are extracted. Concepts like association rule mining are applied to retrieve information from various different databases. These databases can also be different files at remote places. The graphs which were created keeping in mind the the concepts of data analysis using Python was retrieved from the servers and displayed on the click of their appropriate links.
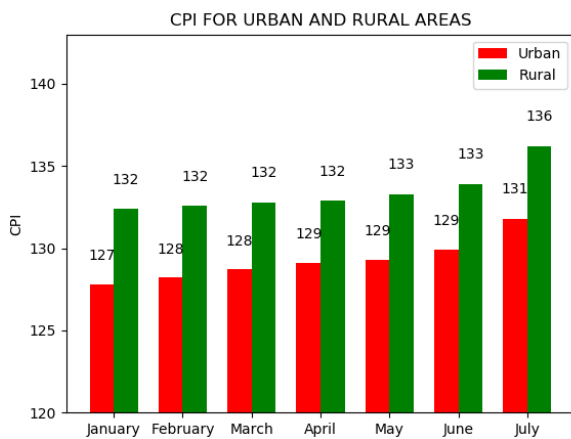
**Figure 2.** A bar graph of the analysis result for consumer price index

## V. CONCLUSION

We have successfully designed this system which will be an important tool for the general public since it will provide insights into what GST means and how it will affect the people. It will clear up the ambiguity persisting in the current Indian scenario regarding the implementation of GST. It will also provide tools to check if they are being cheated by certain authorities regarding GST.

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