# GST TRACKING SYSTEM

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*Abstract:* Goods and Services Tax (GST) is the tax applied to domestically consumed goods and services. This tax system is helpful in the creation of a uniform tax system across the country. The tax is included in the final price of the product. The customer who buys the product pays its price inclusive of the GST. The seller or retailer then forwards its GST portion to the government. We have focused on building a customer-friendly GST tracking system in which customers can track the GST amount they have paid to the retailer. It helps to automate the process of capturing and storing data related to the GST amount paid by customers to a particular shopkeeper and to provide the customers with an easy-to-use web interface to search for the GST amountpaid to the shopkeeper using their GSTIN number. The proposed GST Tracking System is a comprehensive solution that utilizes variousMicrosoft technologies to track goods and services tax data efficiently and effectively. One of the key benefits of this system is its real-time data processing capability. By scanningbarcodes and converting the data into an Excel sheet in real-time, the system can provide up-to-date information on GST data and is the ability to display data on a webpage via a static web app. By allowing users to enter a GSTIN number and retrieve relevant data, the system provides an easy-to-use interface to track and manage GST data.

*Index Terms* - **GST, Cloud, Tracking System**

## I. INTRODUCTION

Goods and Services Tax (GST) is an indirect tax used in India on the supply of goods and services. It is a comprehensive, multistage, destination-based tax: comprehensive because it has subsumed almost all the indirect taxes except a few state taxes. Multi-staged as it is, the GST is imposed at every step in the production process but is meant to be refunded to all parties in the various stages of production other than the final consumer, and as a destination-based tax, it is collected from the point of consumption and not a point of origin like previous taxes.

GST portal is a web-based platform created by the Indian government to facilitate the implementation and management of the Goods and Services Tax (GST), which is a unified indirect tax levied on the sale of goods and services in India. The portal serves as a one-stop destination for taxpayers, tax consultants, and other stakeholders to carry out various GST- related activities, including registration, return filing, payment of taxes, and claiming input tax credits. Some of the key features and functionalities of the GST portal include Registration: Businesses can register for GST on the portal by submitting their details and required documents. Return filing: Registered businesses are required to file regular GST returns on the portal based on their turnover and type of business. There are different types of GST returns such as GSTR-1 for outward supplies, GSTR-3B for a summary of outward and inward supplies, and GSTR-9 for annual returns. Payment of taxes: Businesses can make GST payments online through the portal using various payment options such as credit/debit cards, net banking, and NEFT/RTGS.

## II. OBJECTIVE

The objective of the study is:

- To automate the process of capturing and storing data related to the GST amount paid by customers to a particular shopkeeper.
- To provide customers with an easy-to-use interface to search for the GST amount paid to a particular shopkeeper using their GSTIN number
- To enable shopkeepers to easily track the GST amount paid by customers and manage their records.
- To reduce the time and effort required to search for the GST amount paid, by providing an automated system that captures and stores data in a structured manner. To provide an efficient and reliable system for tracking and managing GST records.

### III. METHODOLOGY

The given block diagram presents the method used withinside the making of the GST tracking System.
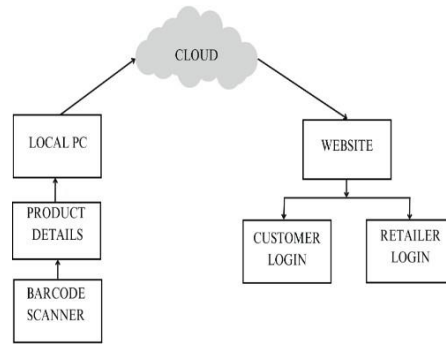


Fig.1 Block representation of GST Tracking System

A barcode scanner is an electronic device that is used to read and decode barcodes. Barcodes are visual patterns of parallel lines and spaces that represent data, such as product codes, serial numbers, or other information. The product details consist of a serial number, GSTIN number, HSN code, product code, and GST amount. GSTIN stands for Goods and Services Tax Identification Number. It is a unique identification number assigned to every registered taxpayer under the GST regime in India. The GSTIN is a 15-digit alphanumeric code that is based on the PAN (Permanent Account Number) system. HSN stands for Harmonized System of Nomenclature. It is an internationally accepted system of names and numbers used to classify traded goods. The HSN code is a six-digit code that is used to classify goods under this system. The product code can be used for various purposes such as inventory management, tracking sales, and product identification. The GST amount (Goods and Services Tax amount) is a tax levied by the government of a country on the sale of goods and services. The GST amount is calculated as a percentage of the price of the goods or services sold. The percentage of GST varies from country to country.

This system will be an add-on to the existing GST portal. The proposed system will work as follows:
- The barcode scanner will capture barcode data from products sold by the shopkeeper and store it in the Excel sheet.
- The Power Apps application will read the data from the Excel sheet and trigger a workflow in Power Automate.
- The workflow in Power Automate will use the Azure SQL database connector to add the data to the Azure SQL database.
- The static web app will retrieve the data from the Azure SQL database and display it on the web page.
- Users will enter a GSTIN number on the web page, and the web page will use SQL queries to retrieve the GST amount paid to the shopkeeper associated with that GSTIN number from the Azure SQL database.
- The web page will display the GST amount paid to the shopkeeper associated with the entered GSTIN number. Overall, this system will allow customers to easily retrieve information about the GST amount paid to a particular shopkeeper associated with a GSTIN number.

### IV. TOOLS AND TECHNOLOGIES

Power Apps – Power Apps is a suite of apps, services, and connectors, as well as a data platform, that provides a rapid development environment to build custom apps. Apps built using Power Apps provide rich business logic and workflow capabilities to transform manual operations into digital and automated processes. This low-code application development platform provides developers with pre-built components and templates that can be easily customized to suit their needs. It also integrates with various data sources, including Azure SQL Database, SharePoint, and Dynamics 365, allowing developers to create applications that seamlessly integrate with their existing systems.

Power Automate - This cloud-based service enables developers to create automated workflows that integrate with various applications and data sources. It provides a drag-and-drop interface for creating workflows and supports a wide range of triggers and actions, including those for Microsoft and third-party services.

Microsoft Azure – Microsoft Azure is a public cloud computing platform. It provides a broad range of cloud services, including computing, storage, and networking. These services are used to develop and scale new applications or to run existing applications in the public cloud. Microsoft Azure provides leading security and compliance for data privacy laws. Azure Information Protection helps to protect data and applications. Azure also allows paying only for the resources used, which can help to reduce costs and increase efficiency.

Microsoft Azure Platform:

a) Azure SQL Database: This fully-managed relational database service provides developers with a scalable and secure database solution. It offers built-in high availability, automatic backups, and advanced security features such as data encryption and threat detection.

b) Azure SQL Server: This fully-managed relational database service is used to host the Azure SQL database. It provides developers with a scalable and secure database solution, with built-in high availability, automatic backups, and advanced security features.

c) Static Web Apps: This service provides developers with an easy way to deploy and scale web applications to Azure. It integrates with popular frameworks such as React, Vue, and Angular, and provides built-in CI/CD capabilities for easy deployment.

HTML - HTML (Hypertext Markup Language) is a standard markup language used to create and structure content on the World Wide Web. It provides a set of tags that describe the structure of a web page and defines how the content should be displayed to the user. HTML tags can be used to format text, add images, create links to other pages, and define the layout of a web page.

CSS - CSS (Cascading Style Sheets) is a stylesheet language used to define the visual presentation of HTML documents. It allows web developers to separate the content of a web page from its presentation, making it easier to maintain and update the layout and design of a website. CSS provides a wide range of styling options, including color, font size, font style, margins, padding, borders, background images, and more. It also supports responsive design, which allows web pages to adapt to different screen sizes and devices. CSS works by applying a set of rules to specific HTML elements. These rules can be written inline within an HTML document, in a separate .css file, or the head section of an HTML document. CSS selectors are used to target specific HTML elements and apply styling to them. CSS is an essential part of web development and is often used in conjunction with HTML and JavaScript to create modern and dynamic web applications.

JavaScript - Javascript is a high-level programming language primarily used to create interactive web pages and applications. It is a versatile language that can be used on both the client side (in the web browser) and the server side (using Node.js). JavaScript can be used to create animations, validate form data, manipulate the DOM (Document Object Model), and interact with web APIs and services. JavaScript is often used in conjunction with HTML and CSS to create modern and responsive web applications.

Data Definition Language (DDL) - The SQL commands are used for creating, modifying, and dropping the structure of database objects.

## V. RESULTS AND CONCLUSIONS

The proposed GST Tracking System is a comprehensive solution that utilizes various Microsoft technologies to provide an efficient and effective means of tracking goods and services tax (GST) data. The system leverages Power Apps and Power Automate to scan barcodes in real-time, which are then converted into an Excel sheet. This data is then added to an Azure SQL database, which serves as the system's data storage. One of the key benefits of this system is its real-time data processing capability. By scanning barcodes and converting the data into an Excel sheet in real time, the system can provide up-to-date information on GST data, which can be critical for businesses that need to stay on top of their tax obligations. Another key advantage of this system is its ability to display data on a webpage via a static web app. By allowing users to enter a GSTIN number and retrieve relevant data, the system provides an easy-to-use interface that can help businesses stay on top of their GST reporting requirements. Overall, the GST Tracking System represents a powerful solution for businesses that need to track and manage their GST data. By leveraging the latest Microsoft technologies, the system provides a robust and scalable platform that can help businesses comply with their GST reporting requirements while providing valuable insights into their operations.
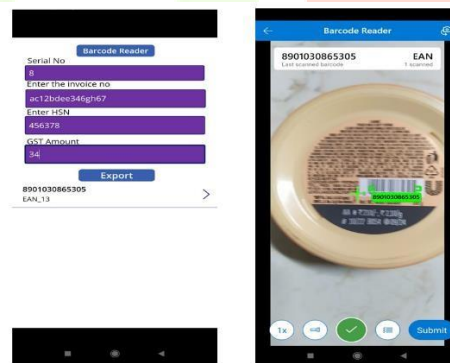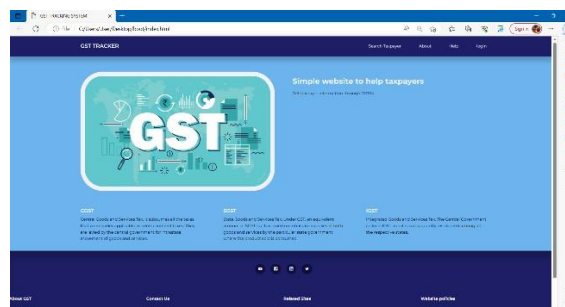
Fig.2 Working of the barcode scanner
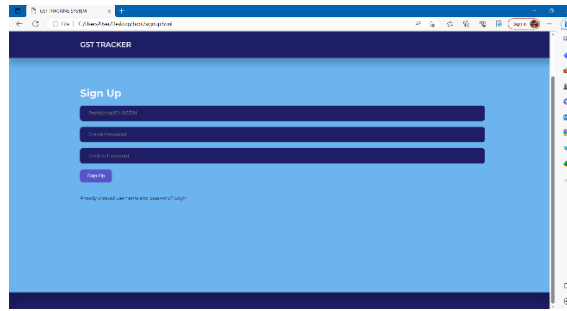
Fig.3 GST Tracker home page
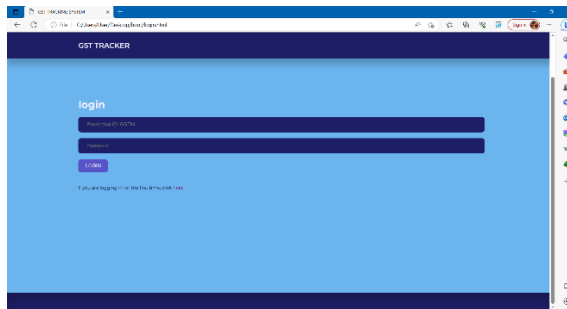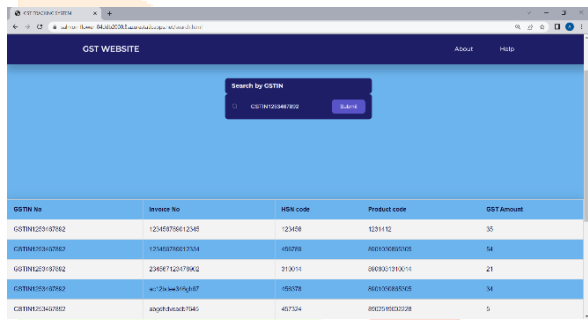
Fig.4 Sign Up page



Fig.5 Login page



Fig.6 Search taxpayer page outputs

**REFERENCES**

[1] Timothy L. Warner, "Providing High Availability, Scalability, and Security for Your Azure Resources," in Microsoft Azure For Dummies, Wiley, 2020, pp.209-210.

[2] V. Desai, K. Oza, P. Shinde, and P. Naik, "Microsoft Azure: Cloud Platform for Application Service Deployment," International Journal of Scientific Research in Multidisciplinary Studies Vol.7, Issue.10, 2021, pp.20-23.

[3] P.P.Nikam, R.S.Suryawanshi, "Microsoft Windows Azure: Developing Applications for Highly Available Storage of Cloud Service", International Journal of Science and Research (IJSR), Vol. 4, Issue. 12, pp.662-665, 2015.

[4] R.Kumar, S. Kathuria, R. K. Malhotra, A. Kumar, A. Gehlot, and K. Joshi, "Role of Cloud Computing in Goods and Services Tax(GST) and Future Application," 2023 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS), Erode, India, 2023, pp. 1443-1447.