Automated Reconciliation System of GSTR-2A and GSTR-2B

Aniket Matondkar [a], Shravan Chenna [b], Rutvik Sarkate [c], Mansi Jaiswal [d], Dr. Sachin Bojewar [e]

[a,b,c,d] *UG Student at Vidyalankar Institute of Technology, Department of Computer Engineering, Mumbai, Wadala,*

[e] *HOD Computer Science Engineering Department at Vidyalankar Institute of Technology.*

A B S T R A C T

The introduction of the Goods and Services Tax (GST) in India has had a huge impact on how businesses conduct themselves and adhere to tax laws. Reconciling Input Tax Credit (ITC) claims with the data present in the GSTR-2A and GSTR-2B forms is one of the crucial elements of GST compliance. For small and medium-sized businesses (SMEs), the existing manual reconciliation procedure is time-consuming, prone to mistakes, and frequently difficult. The GSTR-2A and 2B reconciler is an automated system that this research report suggests be used to speed up reconciliation and lower mistake rates. The suggested remedy pulls information from GSTR-2A and GSTR-2B, compares it, verifies the information, and produces a reconciliation report. The proposed approach may make it easier for enterprises to comply with GST requirements, increase accuracy, save time and effort, and let them concentrate on their main business functions. A potential method for businesses, particularly SMEs, to easily and successfully comply with GST laws is the GSTR-2A and 2B reconciler.

Keywords: GST, Reconciliation.

1. Introduction

1.1 Introduction

The Goods and Services Tax (GST) was implemented in India in 2017 with the goal of unifying the market and streamlining the tax system. Even though the introduction of GST has simplified the tax system, businesses, particularly small and medium-sized enterprises (SMEs), still have trouble adhering to its regulations.

Complying with GST regulations involves filing several returns, one of which is the reconciliation of GSTR-2A and GSTR-2B. GSTR-2A is an auto-generated return that contains the details of all the inward supplies of goods and services that are received by the taxpayer from suppliers. On the other hand, GSTR-2B is generated using data from GSTR-1 and GSTR-5 filed by the suppliers. Reconciling GSTR-2A and GSTR-2B is crucial to ensure that the Input Tax Credit (ITC) claimed by the taxpayer matches the details provided by the suppliers.

The current reconciliation process is manual, time-consuming, and prone to errors. The manual process involves comparing data from GSTR-2A and GSTR-2B line by line, identifying mismatches, and resolving them. This process is often a challenge for businesses, especially SMEs, which may not have the resources or expertise to handle the complexity of GST compliance.

Therefore, there is a need for an automated solution that streamlines the reconciliation process, reduces errors, and saves time for businesses. In this research paper, we propose a web-based application called GSTR-2A and 2B reconciler, which aims to automate the reconciliation process and provide an efficient and effective solution for businesses.

The proposed solution extracts data from GSTR-2A and GSTR-2B, matches it, validates the data, and generates a reconciliation report. The solution's user-friendly interface is designed to reduce the learning curve for users and simplify the reconciliation process for businesses. The proposed solution has the potential to help businesses comply with GST regulations efficiently and effectively, reducing the burden of compliance for SMEs.

1.2 Problem Definition

The Goods and Services Tax (GST) is a comprehensive indirect tax system that has been implemented in India to replace multiple taxes levied by the central and state governments. With the implementation of GST, businesses are required to file their returns on a regular basis. However, the manual process of reconciling invoices and filing for GST can be a tedious and error-prone process, leading to financial penalties for businesses. The problem that our project aims to address is the need for businesses to comply with GST regulations while streamlining the filing process to save time and resources.

2. Literature Review

1. Paper name: Efficient data Reconciliation.

Author: Munir Cochinwala, Verghese Kurien, Gail Lalk and Dennis Shasha.

Description: The research focuses on reducing the complexity of the matching process for bigger datasets by applying a variety of mathematical and statistical approaches to contribute to the data reconciliation process. This decrease in complexity is attained by deleting from the dataset a few values that are thought to be dated.

2. Paper name: Data reconciliation - progress and challenges.

Authors: Cameron M. Crowe.

Description: Data reconciliation and the myriad problems it raises are the subjects of the study. Data reconciliation, according to the study, is a numerical technique used to modify measurements to comply with conservation laws and other restrictions. Finding major mistakes, spotting deviations from steady state, and calculating the variance structure of the data are difficult tasks. Matrix projection and unconstrained minimization are techniques for data reconciliation. Redundancy and observability are crucial ideas in process data reconciliation. Applications of data reconciliation have been made in mineral processing and chemical extraction facilities.

3. Paper Name: Performance evaluation on data reconciliation algorithm in distributed system.

Authors: Xin Wang, Hongming Zhu, Qin Liu, Xiaowen Yang, Jiakai Xiao.

Description: In this study, three Hadoop-based distributed systems are used to assess the performance of three data reconciliation algorithms: the basic Bloom filter, the counting Bloom filter, and the invertible Bloom filter. The findings demonstrate that large-scale distributed systems may enhance performance when handling enormous amounts of data, with Inner Join having the greatest performance followed by the conventional Bloom filter. Both a small and a big Hadoop cluster were used to conduct the experiment. Runtime waves are irregular due to the large-scale dispersed environment. Although the inner join algorithm runs the fastest, bloom filter algorithms have high query accuracy. The two expanded algorithms do not perform as well as SBF. Performance on big amounts of data is improved by a distributed system with adequate nodes.

3. System Architecture

3.1 Software Requirements

1. Next.js - Next.js is a React framework that allows you to build supercharged, SEO-friendly, and extremely user-facing static websites and web applications using the React framework.

2. Flask - Flask is a micro web framework written in Python. It is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions. However, Flask supports extensions that can add application features as if they were implemented in Flask itself.

3. MongoDB - MongoDB is a popular open-source document-oriented NoSQL database that uses a flexible JSON-like document model. It was developed by MongoDB Inc. and released in 2009.

4. JavaScript - JavaScript is a scripting language that enables you to create dynamically updating content, control multimedia, animate images, etc.

5. HTML - Hyper Text Markup Language, its basic function is to create web pages. It is the standard markup language for documents to be displayed in a web browser. Technologies like Cascading Style Sheets and scripting languages like JavaScript can also be used alongside HTML.

6. CSS - Cascading Style Sheets, used to describe the presentation of a document written in a markup language such as HTML.
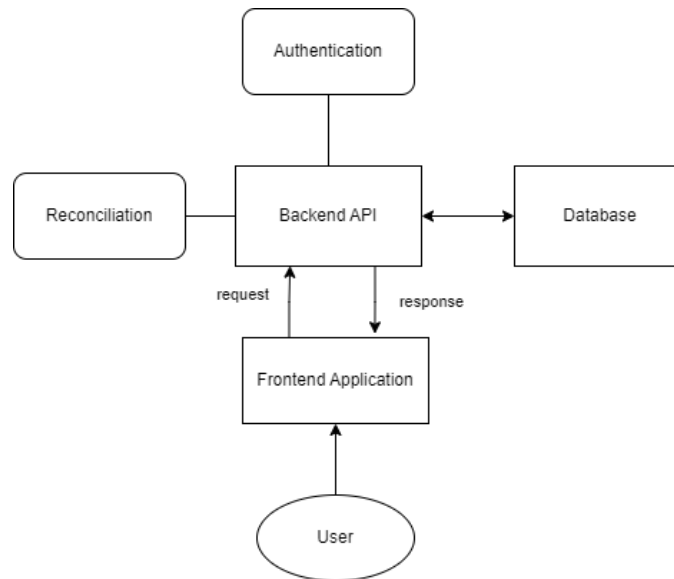
3.2 System Design
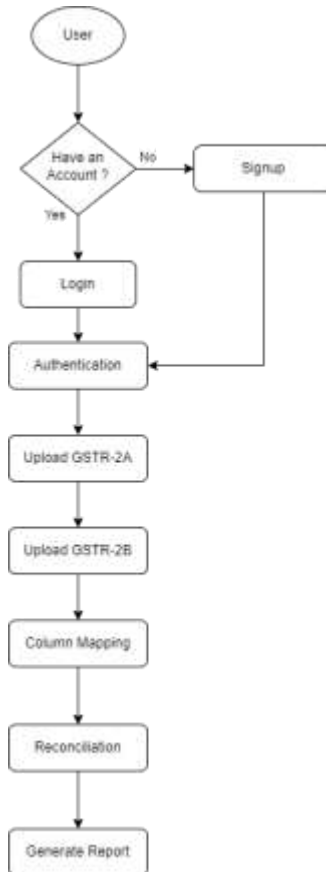

Fig. 1 - System Architecture Diagram

Fig. 2 Dataflow Diagram

4. Conclusion

Businesses must reconcile GSTR-2A and GSTR-2B in order to guarantee the correctness of Input Tax Credit (ITC) claims. The existing manual reconciliation procedure, however, is time-consuming, prone to mistakes, and frequently difficult for SMEs. As a result, an automated solution, such the GSTR-2A and 2B reconciler under consideration, may greatly simplify reconciliation, lower mistakes, and save businesses' time.

Particularly for SMEs that might lack the resources or knowledge to manage the complexities of GST compliance, the suggested approach has the potential to ease the burden of complying with GST requirements on enterprises. By reducing the need for manual reconciliation, the solution may increase accuracy, save time and effort, and let organisations concentrate on their core activities.

5. References

[1] Munir Cochinwala, Verghese Kurien, Gail Lalk, and Dennis Shasha, "Efficient data Reconciliation" Elsevier, Information Sciences, Volume 137, Issues 1–4, September 2001, Pages 1-15.

[2] Cameron M. Crowe. "Data reconciliation - progress and challenges" April 1996, Journal of Process Control 6(2-3):89-98.

[3] Xin Wang, Hongming Zhu, Qin Liu, Xiaowen Yang, Jiakai Xiao "Performance evaluation on data reconciliation algorithm in distributed system", 2012 IEEE 2nd International Conference on Cloud Computing and Intelligence Systems, 30 October 2012 - 01 November 2012.

[4] Sarthak Sengupta, Apoorva Dhuria, Tina Munjal "A Study on Goods and Services Tax (GST)", May 2020 Conference: InterCollege Student Seminar 2020, Ghaziabad Management Association.

[5] Kumar, Mohan. R (2019). Impact of goods and services tax on Indian economy. International Journal for Research in Applied Science & Engineering Technology, 7(V).

[6] Jain, Vasundhara & Aggarwal, Reema. (2017). Impact of GST on Indian economy- Opportunities and challenges. Abhinav National Monthly Refereed Journal of Research in Commerce & Management, 6(10).

[7] Khurana, A. & Sharma, A.. (2016). Goods and services tax in India –A positive return for indirect tax system. International Journal of Advanced Research, 4(3), 500-505.

[8] Khurana, A. & Sharma, A.. (2016). Goods and services tax in India –A positive return for indirect tax system. International Journal of Advanced Research, 4(3), 500-505.

[9] Taqvi, S. M. A., Srivastava, A. K., & Srivastava, R. K. (2013). Challenges and opportunities of goods and service tax (GST) in India. Indian Journal of Applied Research, 3 (5), 413 - 415.