

Requirement 3

Extraction or QR code, invoice preparation as per Rule 46(4), pdf preparation, JSON handling, signature validation, QR code printing (of appropriate dimensions)

Requirement 1: Extraction of QR Code

Definition:

The extraction of the QR code involves retrieving the QR code generated by the Invoice Registration Portal (IRP) after successfully uploading the e-Invoice JSON and obtaining the Invoice Reference Number (IRN). This QR code contains critical details about the invoice, such as the supplier's GSTIN, recipient's GSTIN, invoice number, invoice date, total invoice value, and the IRN.

Explanation:

Once the IRN is generated, the IRP provides a digitally signed JSON, which includes the QR code. The system should be capable of extracting this QR code from the JSON file. The extracted QR code will later be used for invoice printing and verification purposes.

Example:

After successfully uploading the e-Invoice JSON, the system retrieves the QR code from the response JSON and stores it for further use, such as embedding it in the invoice PDF.

Requirement 2: Invoice Preparation as per Rule 46(4)

Definition:

Rule 46(4) of the CGST Rules mandates that a tax invoice must include specific details, such as the correct format, including mandatory fields like the supplier's and recipient's details, the GSTINs, HSN codes, and a QR code if the invoice is electronically generated. The preparation of invoices as per this rule ensures that the invoice is compliant with GST regulations.

Explanation:

The system should ensure that the invoice format complies with Rule 46(4), which includes correctly displaying all required fields, ensuring that the QR code is included if applicable, and that the invoice adheres to the prescribed layout and format. This rule is crucial for maintaining the legal validity of the invoice under GST law.

Example:

An invoice generated by the system includes all mandatory details as required by Rule 46(4), such as the supplier's and recipient's GSTINs, item descriptions, HSN codes, tax amounts, and the embedded QR

code. This ensures that the invoice is legally compliant and can be used for GST filing and verification purposes.

Requirement 3: PDF Preparation

Definition:

PDF preparation involves generating a PDF version of the invoice that includes all necessary details as per GST compliance, such as supplier and recipient information, item details, tax breakdowns, and the QR code. The PDF serves as the official document that can be issued to the recipient and stored for records.

Explanation:

The system should be capable of generating a PDF file that mirrors the details from the e-Invoice JSON and includes any additional required information, formatted in a clear and compliant manner. The PDF should also include the QR code extracted from the JSON, ensuring it is placed correctly for easy scanning.

Example:

After generating the e-Invoice JSON and extracting the QR code, the system creates a PDF document that includes all invoice details along with the QR code. The PDF is then ready to be printed or emailed to the customer as a legally valid tax invoice.

Requirement 4: JSON Handling

Definition:

JSON handling refers to the system's ability to create, parse, validate, and manage JSON files, which are used as the standard format for e-Invoices under GST regulations. The JSON file contains all the invoice details and is the format that is submitted to the IRP for IRN generation.

Explanation:

The system must efficiently handle JSON files, which involves creating a JSON from the input invoice data, validating it against the GSTN schema, submitting it to the IRP, and then parsing the response JSON to extract the IRN and QR code. Proper JSON handling is critical for ensuring compliance and smooth operation within the e-Invoice ecosystem.

Example:

The system generates an e-Invoice JSON file from the invoice data, validates it to ensure all required fields are present and correctly formatted, submits it to the IRP, and then processes the response to retrieve the IRN and QR code.

Requirement 5: Signature Validation

Definition:

Signature validation involves verifying the digital signature attached to the e-Invoice JSON returned by the IRP. This validation ensures that the JSON file has not been tampered with and that the invoice details are authentic and approved by the GST system.

Explanation:

The system should be able to validate the digital signature on the JSON file received from the IRP. This validation is necessary to ensure the authenticity of the e-Invoice, as only invoices with a valid digital signature from the IRP are considered legally valid under GST.

Example:

Upon receiving the digitally signed JSON from the IRP, the system verifies the signature to ensure that the invoice data has not been altered and that the GST system has duly authorized it.

Requirement 6: QR Code Printing (of Appropriate Dimensions)

Definition:

QR code printing refers to including the extracted QR code on the printed version of the invoice, ensuring that it is of appropriate size and quality for scanning. The QR code must be printed clearly and within the specified dimensions to ensure QR code scanners can easily read it.

Explanation:

The system must ensure that the QR code is included when an invoice is printed and meets the dimension requirements specified by the GSTN. This involves controlling the size, placement, and clarity of the QR code to ensure it can be effectively scanned for verification purposes.

Example:

The system generates a PDF of the invoice that includes the QR code in the top-right corner, with dimensions set to 2x2 cm, ensuring that it meets the GSTN's requirements for size and can be easily scanned by any QR code reader.

1. Sub Scenario Title: Validating Mandatory Fields

- **Main Requirement Name:** e-Invoice JSON Preparation
- **Main Scenario:** Ensuring Compliance with GSTN JSON Schema

- **Context:** In the GST e-Invoicing system, certain fields in the invoice JSON are mandatory as per the GSTN schema. These fields are essential for the correct identification and processing of the invoice by the IRP.
 - **Sub Scenario Explanation:** This scenario involves ensuring that all mandatory fields required by the GSTN schema are correctly filled out in the e-Invoice JSON. These fields include critical information such as the supplier's GSTIN, invoice date, and total invoice value. The system should automatically validate these fields during the JSON preparation process to prevent submission errors, which could lead to delays or rejections during the IRN generation process.
 - **Priority: High**
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2. Sub Scenario Title: Validating Optional Fields

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Ensuring Compliance with GSTN JSON Schema
 - **Context:** While not all fields in the invoice JSON are mandatory, optional fields can provide additional details that enhance the clarity and usefulness of the invoice, particularly for specific business needs.
 - **Sub Scenario Explanation:** Although optional fields are not required for basic compliance, they can provide additional valuable information. This scenario demonstrates how the system handles optional fields like the recipient's email address or item-specific discounts. The system should allow users to input these fields without disrupting the mandatory compliance checks, ensuring flexibility without sacrificing compliance.
 - **Priority: Medium**
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3. Sub Scenario Title: Schema Compliance Check

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Ensuring Compliance with GSTN JSON Schema
 - **Context:** The GSTN provides a specific schema that all e-Invoice JSON files must adhere to. Compliance with this schema is critical to ensure that the invoice is accepted by the IRP.
 - **Sub Scenario Explanation:** This scenario highlights the final compliance check where the system validates the entire JSON file against the GSTN schema to ensure that the format, structure, and data types adhere to the required standards. This check helps prevent rejections during the upload process and ensures that the JSON file is correctly formatted for successful IRN generation.
 - **Priority: High**
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4. Sub Scenario Title: Adding Custom Fields for Retail

- **Main Requirement Name:** e-Invoice JSON Preparation
- **Main Scenario:** Customization of JSON for Different Business Models

- **Context:** Different industries may have unique requirements that necessitate the inclusion of custom fields in the e-Invoice JSON. Retail businesses, for example, may want to include fields related to customer loyalty programs.
 - **Sub Scenario Explanation:** This scenario shows how the system can be customized to include additional fields specific to the retail industry, such as loyalty points or promotional discounts. The system should ensure these fields are correctly formatted in the JSON while maintaining compliance with the mandatory fields. This allows businesses to capture and utilize additional data relevant to their operations without compromising on compliance.
 - **Priority: Medium**
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5. Sub Scenario Title: Customizing JSON for Manufacturing

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Customization of JSON for Different Business Models
 - **Context:** Manufacturing companies often require additional data fields related to production and inventory, such as batch numbers or production dates, to be included in their invoices.
 - **Sub Scenario Explanation:** In this scenario, the system customizes the JSON to include manufacturing-specific data, such as batch numbers or production dates. The system should seamlessly integrate these fields without disrupting the overall schema compliance, ensuring that manufacturing companies can meet their specific reporting needs while adhering to GST requirements.
 - **Priority: Medium**
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6. Sub Scenario Title: Validating Custom Fields

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Customization of JSON for Different Business Models
 - **Context:** Custom fields added to the JSON must be validated to ensure they do not conflict with the mandatory fields or the overall structure of the JSON schema.
 - **Sub Scenario Explanation:** This scenario covers the validation of custom fields added to the JSON. The system should check these fields to ensure they do not conflict with the schema's required structure and that they are correctly formatted. Proper validation of custom fields ensures that the additional data can be included without causing errors or rejections during the submission process.
 - **Priority: Medium**
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7. Sub Scenario Title: Data Entry Automation

- **Main Requirement Name:** e-Invoice JSON Preparation
- **Main Scenario:** Automated Data Entry and Validation
- **Context:** Manual data entry is prone to errors, which can lead to issues during the IRN generation process. Automating data entry from integrated systems can reduce errors and improve efficiency.

- **Sub Scenario Explanation:** This scenario demonstrates how the system automates the entry of invoice data into the JSON format, reducing manual errors. The system should pull data from integrated ERP systems or databases and automatically populate the JSON fields. This automation streamlines the process, ensuring accuracy and saving time, particularly for businesses that generate large volumes of invoices.
 - **Priority: High**
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8. Sub Scenario Title: Automated Validation

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Automated Data Entry and Validation
 - **Context:** Once data is entered into the JSON, it needs to be validated to ensure it meets all compliance requirements before submission to the IRP.
 - **Sub Scenario Explanation:** This scenario covers the automated validation process where the system checks all fields in the JSON for compliance with the GSTN schema. The system should flag any discrepancies or errors before finalizing the JSON. Automated validation is crucial for ensuring that the JSON file is error-free and ready for submission, reducing the likelihood of rejections.
 - **Priority: High**
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9. Sub Scenario Title: Handling Discrepancies

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Automated Data Entry and Validation
 - **Context:** Discrepancies in invoice data, such as incorrect tax rates or mismatched data, need to be identified and corrected before submission to avoid rejections or penalties.
 - **Sub Scenario Explanation:** This scenario highlights how the system handles discrepancies during the validation process. The system should provide clear error messages and guide users in resolving any issues. Effective discrepancy handling ensures that any errors in the invoice data are caught and corrected early, preventing delays in the IRN generation process.
 - **Priority: High**
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10. Sub Scenario Title: Preparing JSON in Multiple Languages

- **Main Requirement Name:** e-Invoice JSON Preparation
- **Main Scenario:** Multi-Language Support for Invoice Preparation
- **Context:** Businesses operating in multiple linguistic regions may need to prepare invoices in different languages while still complying with GST requirements.
- **Sub Scenario Explanation:** This scenario demonstrates how the system supports the preparation of e-Invoice JSON files in different languages, accommodating businesses operating in various linguistic regions. The system should ensure that language-specific fields are correctly formatted and comply with the GSTN schema. This feature is important for businesses that need to communicate with clients in their preferred languages while ensuring compliance.

- **Priority:** Medium
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11. Sub Scenario Title: Translation Accuracy Check

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Multi-Language Support for Invoice Preparation
 - **Context:** Ensuring the accuracy of translations in the invoice JSON is critical to maintaining the integrity of the invoice data and avoiding misunderstandings.
 - **Sub Scenario Explanation:** The scenario covers how the system checks the accuracy of translations in the JSON file to prevent errors or misunderstandings during submission. The system should verify that all translations are correct and consistent with GST requirements. This step is crucial for businesses that operate in multilingual environments to ensure that all invoice details are accurately conveyed.
 - **Priority:** Low
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12. Sub Scenario Title: Schema Validation

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Multi-Language Support for Invoice Preparation
 - **Context:** Even when the invoice JSON is prepared in a different language, it must still comply with the GSTN schema.
 - **Sub Scenario Explanation:** This scenario ensures that even after translating the JSON into another language, the file remains compliant with the GSTN schema. The system should run a final validation check to ensure there are no errors caused by language-specific issues. This validation is necessary to maintain the integrity of the invoice and ensure it is accepted by the IRP.
 - **Priority:** Medium
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13. Sub Scenario Title: Currency Conversion to INR

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Handling Multi-Currency Invoices
 - **Context:** For businesses dealing with international clients, invoices may be issued in foreign currencies, which must be accurately converted to INR for GST compliance.
 - **Sub Scenario Explanation:** This scenario focuses on how the system handles multi-currency transactions by converting foreign currencies to INR for GST compliance. The system should automatically apply the correct exchange rate and ensure that the converted values are accurately reflected in the JSON. Accurate currency conversion is critical to ensuring that the correct tax amounts are calculated and reported.
 - **Priority:** High
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14. Sub Scenario Title: Retaining Original Currency Details

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Handling Multi-Currency Invoices
 - **Context:** While the invoice must report values in INR for GST purposes, retaining the original currency details is important for the business's internal records and for clients.
 - **Sub Scenario Explanation:** This scenario demonstrates how the system retains the original currency details within the JSON file while still ensuring compliance with INR reporting requirements. The system should include both the original currency amount and the INR equivalent. This approach ensures that the invoice is compliant with GST while also meeting the needs of international clients who may require the original currency details.
 - **Priority:** Medium
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15. Sub Scenario Title: Validating Multi-Currency JSON

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Handling Multi-Currency Invoices
 - **Context:** Validation is necessary to ensure that multi-currency invoices are correctly formatted and that all conversions and calculations are accurate.
 - **Sub Scenario Explanation:** The scenario involves validating the multi-currency fields in the JSON to ensure they are correctly formatted and comply with GSTN requirements. The system should ensure that all currency conversions are accurate and that the JSON structure supports multiple currencies. Proper validation prevents errors in tax calculations and ensures compliance with GST regulations.
 - **Priority:** High
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16. Sub Scenario Title: Implementing HSN Code Requirements

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Compliance with Specific GST Notifications
 - **Context:** The GST council may periodically update the requirements for HSN codes, such as mandating a 6-digit code for certain categories of goods and services.
 - **Sub Scenario Explanation:** This scenario covers how the system handles updates to GST regulations, such as mandatory 6-digit HSN codes. The system should ensure that the JSON includes the correct HSN code length and format as per the latest GST notifications. Staying compliant with HSN code requirements is critical to avoid rejections and penalties.
 - **Priority:** High
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17. Sub Scenario Title: Handling Government Agency Invoices

- **Main Requirement Name:** e-Invoice JSON Preparation
- **Main Scenario:** Compliance with Specific GST Notifications
- **Context:** Invoices issued to government agencies often have additional requirements or fields that must be included as per GST notifications.

- **Sub Scenario Explanation:** This scenario demonstrates how the system prepares invoices for transactions involving government agencies, ensuring compliance with any specific requirements or notifications applicable to such transactions. The system should automatically include fields like the government agency's unique identifier and any other mandated details to ensure that the invoice is compliant and can be processed by government systems.
 - **Priority: Medium**
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18. Sub Scenario Title: Ensuring Latest Compliance

- **Main Requirement Name:** e-Invoice JSON Preparation
 - **Main Scenario:** Compliance with Specific GST Notifications
 - **Context:** GST regulations are periodically updated, and businesses must ensure their systems are up-to-date to remain compliant.
 - **Sub Scenario Explanation:** The scenario involves regularly updating the system to comply with the latest GST notifications and ensuring that all JSON files generated adhere to these updates. The system should prompt users when changes occur and guide them through any necessary adjustments. Keeping the system updated is essential for avoiding compliance issues and ensuring that all invoices are processed smoothly.
 - **Priority: High**
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19. Sub Scenario Title: Seamless API Integration for JSON Upload

- **Main Requirement Name:** Uploading the JSON File
 - **Main Scenario:** Ensuring Proper JSON Upload
 - **Context:** Uploading the JSON file to the IRP via an API is a crucial step in the e-Invoicing process, and it must be done correctly to ensure successful IRN generation.
 - **Sub Scenario Explanation:** Demonstrate the process of uploading the prepared JSON file to the Invoice Registration Portal (IRP) via an API. The scenario should show how the system ensures that the JSON is properly structured and meets all the validation rules set by the IRP before submission. This step is critical for preventing upload failures and ensuring that the data is accurately transmitted to the IRP, leading to successful IRN generation.
 - **Priority: High**
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20. Sub Scenario Title: Direct Portal Upload with Real-Time Feedback

- **Main Requirement Name:** Uploading the JSON File
- **Main Scenario:** Ensuring Proper JSON Upload
- **Context:** For businesses that do not use APIs, directly uploading the JSON file via the IRP portal is an alternative method that requires careful handling.
- **Sub Scenario Explanation:** In this scenario, the JSON file is uploaded directly to the IRP via the web portal. The demo should highlight how the system provides real-time feedback during the upload process, immediately notifying the user if the file is not compliant with the IRP's

requirements. This feature is essential for allowing quick corrections and resubmission, minimizing downtime and delays in obtaining the IRN.

- **Priority: High**
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21. Sub Scenario Title: Bulk Uploads of Multiple JSON Files

- **Main Requirement Name:** Uploading the JSON File
 - **Main Scenario:** Ensuring Proper JSON Upload
 - **Context:** Businesses that generate a large number of invoices need an efficient way to upload multiple JSON files in bulk to the IRP.
 - **Sub Scenario Explanation:** This scenario covers the process of uploading multiple JSON files in bulk. The demo should show how the system handles the validation and upload of each file individually, flagging any errors and processing successful files. This capability is crucial for businesses that generate a high volume of invoices and need to ensure that all files are uploaded efficiently, reducing the time required for invoice submission.
 - **Priority: High**
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22. Sub Scenario Title: Handling Interrupted Upload Sessions

- **Main Requirement Name:** Uploading the JSON File
 - **Main Scenario:** Ensuring Proper JSON Upload
 - **Context:** Network interruptions or system failures during the upload process can disrupt the submission of the e-Invoice JSON file.
 - **Sub Scenario Explanation:** This scenario demonstrates how the system manages interrupted upload sessions due to network or system failures. The demo should show how the system resumes the upload from where it left off, ensuring that the JSON file is fully uploaded without data loss or duplication. This feature is critical for maintaining the integrity of the data during upload and ensuring that invoices are not left unprocessed due to technical issues.
 - **Priority: Medium**
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23. Sub Scenario Title: User Role-Based Access for Uploads

- **Main Requirement Name:** Uploading the JSON File
 - **Main Scenario:** Ensuring Proper JSON Upload
 - **Context:** To maintain security and accountability, not all users should have the ability to upload e-Invoice JSON files to the IRP.
 - **Sub Scenario Explanation:** Illustrate how the system enforces role-based access control during the JSON upload process. The scenario should show how different users with varying levels of permissions can access the upload function, ensuring that only authorized personnel can submit e-Invoice JSON files to the IRP. This helps maintain security and accountability within the organization, preventing unauthorized uploads or errors.
 - **Priority: Medium**
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24. Sub Scenario Title: Time-Bound Invoice Reporting

- **Main Requirement Name:** Uploading the JSON File
 - **Main Scenario:** Ensuring Proper JSON Upload
 - **Context:** GST regulations require that invoices be reported within a specific timeframe, such as within 30 days of issue, to remain compliant.
 - **Sub Scenario Explanation:** Highlight how the system handles the requirement for time-bound reporting of invoices, such as the 30-day reporting limit for high-turnover businesses. This scenario is crucial for ensuring timely compliance and avoiding penalties. The system should track the reporting deadlines for each invoice and alert users if an invoice is nearing the deadline, ensuring it is uploaded on time.
 - **Priority:** High
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25. Sub Scenario Title: Automatic Generation of IRN and QR Code

- **Main Requirement Name:** Receipt of IRN (Invoice Reference Number)
 - **Main Scenario:** Ensuring Accurate IRN Generation
 - **Context:** The IRN and QR code are essential components of an e-Invoice, serving as unique identifiers and verification tools.
 - **Sub Scenario Explanation:** Demonstrate the system's capability to automatically generate an Invoice Reference Number (IRN) and a QR code upon successful upload and validation of the JSON by the IRP. The scenario should show how the system retrieves the digitally signed JSON and QR code from the IRP and associates it with the original invoice in the system. This ensures the authenticity and traceability of the e-Invoice, making it compliant with GST regulations.
 - **Priority:** High
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26. Sub Scenario Title: Verification and Archival of IRN and Signed JSON

- **Main Requirement Name:** Receipt of IRN (Invoice Reference Number)
 - **Main Scenario:** Ensuring Accurate IRN Generation
 - **Context:** Verifying and securely archiving the IRN and signed JSON are critical steps for maintaining compliance and ensuring that the invoice can be audited in the future.
 - **Sub Scenario Explanation:** Show how the system verifies the authenticity of the IRN and digitally signed JSON received from the IRP. The scenario should include the archival of these documents for future reference and compliance audits. This process is essential for maintaining accurate records and ensuring that all e-Invoices can be verified at any time, particularly during audits or regulatory checks.
 - **Priority:** High
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27. Sub Scenario Title: IRN Retrieval in Case of System Failure

- **Main Requirement Name:** Receipt of IRN (Invoice Reference Number)
- **Main Scenario:** Ensuring Accurate IRN Generation

- **Context:** System or network failures can interrupt the retrieval of the IRN from the IRP, which could delay the invoice process.
 - **Sub Scenario Explanation:** Illustrate how the system handles scenarios where there is a delay or failure in receiving the IRN due to network or system issues. The demo should show the system's capability to automatically retry the retrieval of the IRN from the IRP and how it notifies the user once the IRN is successfully obtained. This ensures that no invoice is left unprocessed due to technical issues, and the process can be resumed seamlessly.
 - **Priority: High**
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28. Sub Scenario Title: Notifications for Successful IRN Generation

- **Main Requirement Name:** Receipt of IRN (Invoice Reference Number)
 - **Main Scenario:** Ensuring Accurate IRN Generation
 - **Context:** Timely notification of IRN generation is important for various stakeholders involved in the invoicing process, such as the finance team.
 - **Sub Scenario Explanation:** Highlight the system's capability to send notifications (e.g., email, SMS) to relevant stakeholders once an IRN is successfully generated. The scenario should demonstrate how these notifications ensure that the appropriate team members are promptly informed, reducing the time to process the invoice further. This feature helps in maintaining workflow efficiency and ensures that all involved parties are kept in the loop.
 - **Priority: Medium**
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29. Sub Scenario Title: Archiving and Retrieval of Signed e-Invoice

- **Main Requirement Name:** Receipt of IRN (Invoice Reference Number)
 - **Main Scenario:** Ensuring Accurate IRN Generation
 - **Context:** Securely archiving the signed e-Invoice ensures that it can be retrieved and verified whenever necessary, such as during audits or disputes.
 - **Sub Scenario Explanation:** Demonstrate how the system archives the digitally signed JSON and IRN for future reference. The scenario should include a demonstration of the retrieval process, showing how the system allows users to access and verify archived e-Invoices easily. This is important for compliance and audit purposes, ensuring that all e-Invoices are securely stored and can be retrieved when needed.
 - **Priority: High**
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30. Sub Scenario Title: Auto-Population into GSTR-1 from IRN

- **Main Requirement Name:** Receipt of IRN (Invoice Reference Number)
- **Main Scenario:** Ensuring Accurate IRN Generation
- **Context:** The IRN and related invoice data must be reported in the GSTR-1 form, and automating this process reduces the chances of errors and streamlines the filing process.
- **Sub Scenario Explanation:** Demonstrate how the system automatically populates the GSTR-1 form with the data from the IRN-generated invoices, ensuring seamless integration and

compliance. This scenario is essential for simplifying return filing and ensuring accuracy, as it reduces manual data entry and the potential for errors in the GST return filing process.

- **Priority: High**
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31. Sub Scenario Title: Handling Missing or Incorrect Data in JSON

- **Main Requirement Name:** Error Handling
 - **Main Scenario:** Identifying and Correcting Errors in JSON
 - **Context:** Missing or incorrect data in the JSON file can lead to rejection by the IRP and delays in obtaining the IRN, impacting business operations.
 - **Sub Scenario Explanation:** Demonstrate how the system responds when the JSON file submitted to the IRP contains missing or incorrect data, such as an invalid GSTIN or a missing mandatory field. The scenario should show how the system identifies the specific errors, provides detailed error messages, and guides the user in correcting the data. Once the errors are corrected, the JSON is revalidated and resubmitted until it passes the IRP's checks. This ensures that all invoices are compliant and processed without unnecessary delays.
 - **Priority: High**
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32. Sub Scenario Title: Real-Time Error Notifications and Resolution

- **Main Requirement Name:** Error Handling
 - **Main Scenario:** Identifying and Correcting Errors in JSON
 - **Context:** Real-time error detection and resolution are critical for ensuring that the JSON file is corrected and resubmitted quickly, minimizing disruptions to the invoicing process.
 - **Sub Scenario Explanation:** Highlight the system's ability to provide real-time notifications to the user when an error is encountered during the JSON upload process. The scenario should show how the system immediately informs the user of the issue, explains the nature of the error, and offers step-by-step guidance to resolve it. This proactive error handling is essential for ensuring quick resolution and preventing delays in obtaining the IRN, thereby maintaining the efficiency of the invoicing process.
 - **Priority: High**
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33. Sub Scenario Title: Automated Re-Submission After Error Correction

- **Main Requirement Name:** Error Handling
- **Main Scenario:** Identifying and Correcting Errors in JSON
- **Context:** Automating the re-submission process after correcting errors in the JSON file reduces manual intervention and speeds up the IRN generation process.
- **Sub Scenario Explanation:** Show how the system automates the re-submission of the JSON file after the user has corrected any errors identified by the IRP. The scenario should include the validation process to ensure that the corrected JSON now meets all the IRP's requirements, followed by a successful upload and receipt of the IRN. This feature is critical for streamlining the

error correction process and minimizing the effort required from the user, ensuring that the invoicing process remains efficient.

- **Priority: High**
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34. Sub Scenario Title: Detailed Audit Trail for Error Handling

- **Main Requirement Name:** Error Handling
 - **Main Scenario:** Identifying and Correcting Errors in JSON
 - **Context:** Maintaining a detailed audit trail of all errors encountered and the corrective actions taken is essential for transparency and accountability in the invoicing process.
 - **Sub Scenario Explanation:** Show how the system maintains a detailed audit trail of all errors encountered during the JSON upload process. The scenario should demonstrate how users can review past errors, the corrective actions taken, and the final successful upload. This feature is crucial for ensuring transparency and accountability in the error-handling process, enabling businesses to track and resolve issues efficiently.
 - **Priority: Medium**
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35. Sub Scenario Title: Automated Error Reporting and Analytics

- **Main Requirement Name:** Error Handling
 - **Main Scenario:** Identifying and Correcting Errors in JSON
 - **Context:** Automated error reporting and analytics help businesses identify common issues and implement measures to prevent future errors, improving overall compliance.
 - **Sub Scenario Explanation:** Demonstrate how the system generates automated reports and analytics based on the errors encountered during JSON preparation and upload. The scenario should show how these reports help businesses identify common issues and take proactive measures to prevent them in the future. This feature is essential for continuous improvement and reducing error rates, ensuring that the invoicing process becomes more efficient and compliant over time.
 - **Priority: Medium**
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36. Sub Scenario Title: Scenario for Managing Errors in Bulk Uploads

- **Main Requirement Name:** Error Handling
- **Main Scenario:** Identifying and Correcting Errors in JSON
- **Context:** When multiple JSON files are uploaded in bulk, the system must efficiently identify and manage errors without affecting the entire batch.
- **Sub Scenario Explanation:** This scenario demonstrates how the system handles errors when multiple JSON files are uploaded in bulk. The demo should show how the system identifies errors in specific files, processes the correct files, and allows for the correction and re-upload of the erroneous files without affecting the entire batch. This capability is vital for businesses that deal with high volumes of invoices and need efficient error management to ensure that the invoicing process remains smooth and compliant.

- **Priority:** High
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37. Sub Scenario Title: Handling Auto-Cancellation of Invoices

- **Main Requirement Name:** Error Handling
 - **Main Scenario:** Managing Unexpected Issues Post-Submission
 - **Context:** Invoices that are mistakenly uploaded or require corrections may need to be auto-canceled, and the system must manage this process effectively to maintain compliance.
 - **Sub Scenario Explanation:** Illustrate how the system manages auto-cancellation of invoices that were mistakenly uploaded or require corrections, including the process for re-issuing and updating GSTR-1. This scenario addresses the challenges of managing mistakes in a regulated environment, ensuring that the invoicing process remains compliant and that errors are corrected without impacting the overall tax reporting process.
 - **Priority:** High
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38. Sub Scenario Title: Managing API Failures During IRN Generation

- **Main Requirement Name:** Error Handling
 - **Main Scenario:** Managing Unexpected Issues Post-Submission
 - **Context:** API failures during IRN generation can disrupt the invoicing process, and the system must have mechanisms in place to handle such failures effectively.
 - **Sub Scenario Explanation:** Show how the system handles API failures during IRN generation, including retry mechanisms and user notifications. This scenario ensures that technical issues do not disrupt compliance. The system should automatically retry the request and, if successful, notify the user. If the retry fails, the system should alert the user to manually intervene, ensuring that the invoice is processed without significant delays.
 - **Priority:** High
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Sample Data

Serial Number	Sub Scenario Title	Sample Data Preparation
1	Validating Mandatory Fields	<p>JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "TotalInvoiceValue": "50000.00", "RecipientGSTIN": ""}</p> <p>Note: Missing "RecipientGSTIN" field, which is mandatory.</p>

2	Validating Optional Fields	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "TotalInvoiceValue": "50000.00", "RecipientEmail": "recipient@example.com"} Note: Optional field "RecipientEmail" added correctly.
3	Schema Compliance Check	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "HSNCode": "12345"} Note: Incorrect HSN code length (5 digits instead of 6).
4	Adding Custom Fields for Retail	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "TotalInvoiceValue": "50000.00", "LoyaltyPointsEarned": "100"} Note: Retail-specific custom field "LoyaltyPointsEarned" added.
5	Customizing JSON for Manufacturing	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "TotalInvoiceValue": "100000.00", "BatchNumber": "BATCH123"} Note: Manufacturing-specific field "BatchNumber" included.
6	Validating Custom Fields	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "TotalInvoiceValue": "50000.00", "DiscountCode": "DISC10"} Note: Custom field "DiscountCode" validated for correct format.
7	Data Entry Automation	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "TotalInvoiceValue": "50000.00"} Note: Data auto-populated from ERP system, reducing manual entry.
8	Automated Validation	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "08/17/2024"} Note: Incorrect date format detected, requiring correction.
9	Handling Discrepancies	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "ItemRate": "18%"} Note: Discrepancy in tax rate identified and corrected.

10	Preparing JSON in Multiple Languages	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceDate": "2024-08-17", "ItemDescription": "वस्त्र"} Note: JSON prepared in Hindi, ensuring compliance with multilingual requirements.
11	Translation Accuracy Check	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "ItemDescription": "பருத்தி"} Note: Item description translated into Tamil, with accuracy checked.
12	Schema Validation	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "ItemDescription": "సూక్ష్మ వస్తువులు"} Note: JSON validated after translation to Telugu, ensuring compliance.
13	Currency Conversion to INR	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceValueUSD": "1000.00", "InvoiceValueINR": "74000.00"} Note: Currency conversion from USD to INR applied using the current exchange rate.
14	Retaining Original Currency Details	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceValueUSD": "1000.00", "InvoiceValueINR": "74000.00"} Note: Original currency details retained alongside INR equivalent.
15	Validating Multi-Currency JSON	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceValueUSD": "1000.00", "InvoiceValueINR": "74000.00"} Note: Validation of multi-currency details to ensure accuracy and compliance.
16	Implementing HSN Code Requirements	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "HSNCode": "123456"} Note: Correct 6-digit HSN code implemented as per latest GST regulations.
17	Handling Government Agency Invoices	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "GovAgencyCode": "GOV123"} Note: Government agency-specific field "GovAgencyCode" included for compliance.

18	Ensuring Latest Compliance	JSON Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "InvoiceValue": "100000.00", "SpecialDisclosure": "Yes"} Note: Compliance with the latest GST notifications ensured.
19	Seamless API Integration for JSON Upload	System Data: {"APIStatus": "Connected", "UploadStatus": "Successful"} Note: JSON file successfully uploaded via API to the IRP.
20	Direct Portal Upload with Real-Time Feedback	Portal Data: {"PortalUploadStatus": "Error", "MissingField": "RecipientGSTIN"} Note: Real-time feedback indicates missing mandatory field.
21	Bulk Uploads of Multiple JSON Files	Bulk Data: {"TotalFiles": "50", "SuccessfulUploads": "45", "FailedUploads": "5"} Note: Bulk upload results, with specific files flagged for errors.
22	Handling Interrupted Upload Sessions	System Data: {"UploadStatus": "Interrupted", "ResumptionStatus": "Successful"} Note: Upload process resumed successfully after interruption.
23	User Role-Based Access for Uploads	User Data: {"UserRole": "Admin", "UploadAccess": "Granted"} Note: Only users with admin privileges can upload JSON files.
24	Time-Bound Invoice Reporting	Alert Data: {"InvoiceDate": "2024-07-17", "ReportDeadline": "2024-08-16", "AlertStatus": "Issued"} Note: System alert for nearing reporting deadline.
25	Automatic Generation of IRN and QR Code	IRP Data: {"IRN": "IRN1234567890", "QRStatus": "Generated"} Note: IRN and QR code generated successfully upon JSON validation.
26	Verification and Archival of IRN and Signed JSON	Archive Data: {"IRN": "IRN1234567890", "ArchiveStatus": "Completed"} Note: IRN and signed JSON archived securely for future reference.

27	IRN Retrieval in Case of System Failure	Retry Data: {"IRN": "IRN1234567890", "RetryCount": "2", "FinalStatus": "Successful"} Note: IRN retrieved successfully after multiple retries due to initial failure.
28	Notifications for Successful IRN Generation	Notification Data: {"IRN": "IRN1234567890", "NotificationStatus": "Sent", "Recipient": "FinanceTeam"} Note: Notification sent to relevant stakeholders after IRN generation.
29	Archiving and Retrieval of Signed e-Invoice	Archive Data: {"IRN": "IRN1234567890", "ArchiveStatus": "Completed", "RetrievalStatus": "Successful"} Note: Signed e-Invoice archived and retrievable upon request.
30	Auto-Population into GSTR-1 from IRN	GSTR-1 Data: {"IRN": "IRN1234567890", "GSTR1Status": "Auto-Populated"} Note: GSTR-1 form automatically populated with data from the IRN.
31	Handling Missing or Incorrect Data in JSON	Error Data: {"SupplierGSTIN": "27AAEPM1234A1ZZ", "RecipientGSTIN": "", "Error": "MissingRecipientGSTIN"} Note: Missing "RecipientGSTIN" field flagged for correction.
32	Real-Time Error Notifications and Resolution	Error Data: {"HSNCode": "12345", "Error": "InvalidHSNLength", "ResolutionPrompt": "CorrectHSN"} Note: Real-time notification and resolution prompt for incorrect HSN code.
33	Automated Re-Submission After Error Correction	Resubmission Data: {"ErrorStatus": "Corrected", "ResubmissionStatus": "Successful"} Note: JSON resubmitted and processed successfully after error correction.
34	Detailed Audit Trail for Error Handling	Audit Data: {"ErrorID": "E12345", "CorrectionDate": "2024-08-18", "CorrectionStatus": "Resolved"} Note: Detailed audit trail maintained for error correction.
35	Automated Error Reporting and Analytics	Error Report Data: {"ErrorType": "MissingGSTIN", "Frequency": "5", "LastOccurrence": "2024-08-17"} Note: Automated report highlighting frequent errors for proactive correction.

36	Scenario for Managing Errors in Bulk Uploads	Bulk Data: {"TotalFiles": "100", "FailedFiles": "10", "ErrorType": "InvalidHSN"} Note: Errors identified in bulk uploads, specific files flagged for correction.
37	Handling Auto-Cancellation of Invoices	Invoice Data: {"InvoiceID": "INV123456", "CancellationStatus": "Auto-Cancelled", "ReissueStatus": "Completed"} Note: Auto-cancelled invoice successfully reissued with corrections.
38	Managing API Failures During IRN Generation	API Data: {"IRN": "IRN1234567890", "APIStatus": "Failed", "RetryStatus": "Successful"} Note: API failure managed with retry mechanisms, IRN generated successfully after retries.

This table provides a clear and practical representation of the data required for each scenario, helping to simulate real-world situations that might be encountered during the e-Invoicing process. Each entry is designed to reflect a scenario's specific needs, ensuring that the data aligns with the expected operations and outcomes. If you need these sample data entries in a CSV file, I can help generate that for you.