

Bulk Upload using CSV

1.1 Adding New Row Data

How we handle:

- Read the CSV file
- Check if the primary key is empty → **If yes, treat it as a new record.**
- Validate required fields (if any)
- Send data to backend
- Data validation in backend
- Insert the new row into the database
- If a field is empty, store it as **NULL** in the database.

Edge Cases: Case → Handling

- Row is completely empty → **Skip the row**
- Some fields are missing → **Insert NULL**
- Date fields incorrect → **Reject row and log an error**
- Non-numeric values in numeric fields → **Reject row and log an error**

1.2 Updating Existing Records

-- **Primary key is must**

How we handle:

- Read the CSV file.
- Check if the primary key is present → **If yes, treat it as an update**
- Validate required fields (if any)
- Send data to backend
- Data validation in backend
- Fetch the existing record from the database.
- Update only columns that are present in the CSV.
- If a field is empty, keep the existing value.
- If a field contains 'null' or 'NULL', set it as NULL in the database.

Edge Cases: Case → Handling

- Primary key is missing → **Will consider for adding new row**
- Row is completely empty → **Skip the row**
- Some fields are missing → **Keep existing values**
- Date fields incorrect → **Reject row and log an error**
- Non-numeric values in numeric fields → **Reject row and log an error**

1.3 Mixed Operations (Add & Update)

How to handle:

- Read the CSV file.
- For each row.
- Validate required fields (if any)
- Send data to backend
- Data validation in backend
- If primary key is empty → Treat as new record.
- If primary key is present → Check for existing record
 - If exists → Treat as update record
 - If not → Treat as new record
- Apply the respective logic for add or update.

Edge Cases: Case → Handling

- Row is completely empty → **Skip the row**
- Some fields are missing → **Keep existing values (for updates), insert NULL (for new)**
- Primary key is missing → **Consider as adding new data**
- Invalid data formats → **Reject row and log an error**

2. Special Cases & Edge Handling

Case	Handling
Row is completely empty	Skip the row
Primary key is empty	Treat as new record, insert into the database
Primary key is present	Check if record exists → If exists update if; If not consider as new data
Some fields are missing	For updates → keep existing data ; For insert → Insert NULL
Field contains 'null' or 'NULL'	Convert to NULL in database
Invalid data (e.g. text in numeric field)	Reject the row and log an error

2.1 Date Fields

Accepted formats:

- YYYY-MM-DD (e.g., 2025-03-12)
- DD-MM-YYYY (e.g., 12-03-2025)

Handling:

- If format is incorrect, reject the row and log an error.

2.2 Numeric Fields

Accepted formats:

Integers: 1234567 → **No special characters like ,, \$, %, or alphabets.**

Handling: **If non-numeric values are present, reject the row and log an error.**

3. Complete Processing Flow

1. Read CSV File

- Parse CSV.
- Validate column names.

2. Process Each Row

- If row is empty → **Skip.**
- If primary key is empty → **Treat as new record.**
- If primary key is present → **Check if record exists:**
- If exists → **Update record.**
- If does not exist → **Log an error.**
- Handle missing fields → **Keep existing values for updates, insert NULL for new records.**
- Handle 'null' or 'NULL' values → **Convert to NULL.**

3. Validate Data

- Check required fields.
- Validate date format.
- Validate numeric fields.

4. Insert/Update in Database

- Insert new records.
- Update existing records.

5. Generate Summary Report

- Success count.
- Errors and reasons.