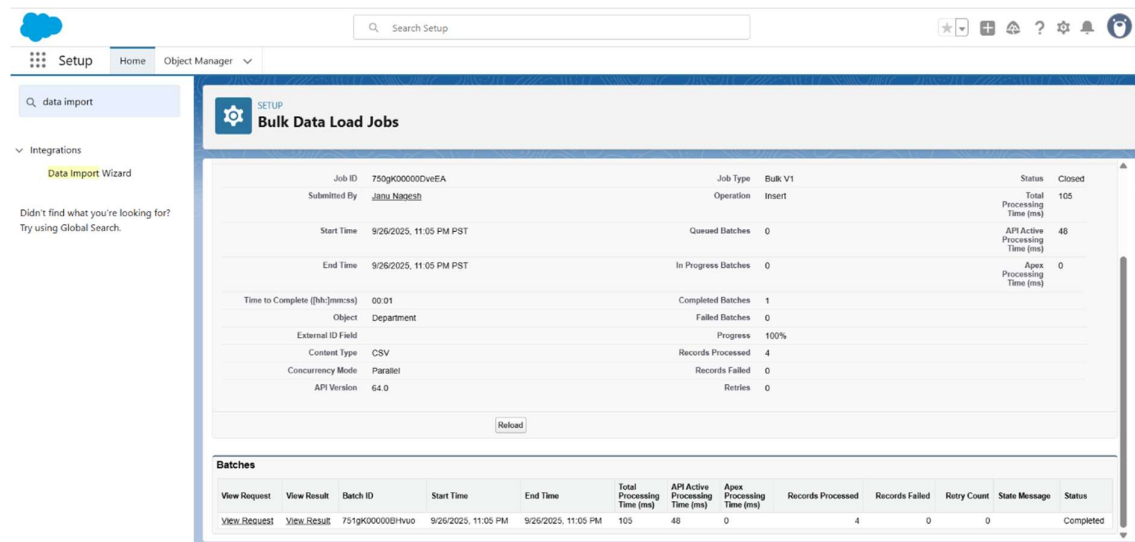# Phase 8: Data Management & Deployment

1. Data Import Wizard

- **Where**: Setup → Data Import Wizard.

- Object: Complaint__c.

- File: complaints.csv.

- Map fields → Start Import.

2. Matching Rules

Goal: prevent duplicates (e.g., same Citizen_Email__c).

Where: Setup → Duplicate Management → Matching Rules

Create a Matching Rule

1. Setup → Quick Find → **Matching Rules** → New.

2. Object: Complaint (Complaint__c).

3. Label: Match Complaint by Email → Name auto-fills.

4. Matching Criteria:

   o Field: Citizen_Email__c

   o Matching Method: Exact (or Fuzzy if you want)

- o Click **Save**.

5. Click **Activate** on the rule.
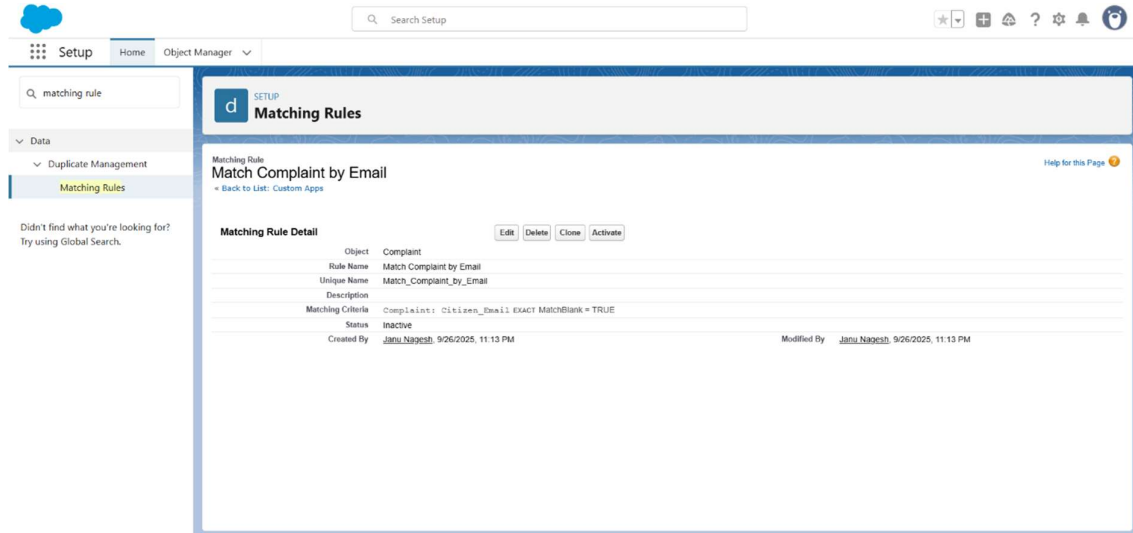
3. Duplicate Rules

Create a Duplicate Rule

1. Setup → Duplicate Rules → New Rule.

2. Object: Complaint (Complaint__c).

3. Label: Duplicate Complaint by Email.

4. Matching Rule: pick Match Complaint by Email.

5. Actions:

   - o **Record-Level Security**: Allow or Block — choose **Block** to stop save OR **Alert** to show warning.

   - o **Alert Text**: "A complaint with this email already exists."

6. Save → Activate.

4. Data Export & Backup

Option A — Manual export (UI)

- Setup → Data → Data Export.

- Click **Export Now** or **Schedule Export**.

- Choose objects: tick Complaint, Department, Feedback, User etc.

- Compression & include images: choose options.

- Click **Start Export**.

- After process completes, download zip containing CSVs.

5. Unmanaged vs Managed Packages

Unmanaged package (good for sharing open-source code):

- Setup → Quick Find → Packages → New.
- Fill:
  - Package Name: SmartCity_Components
  - Description
- Add Components → add objects, classes, pages.
- Upload → creates a package link anyone can install (no upgrade support).

Managed package (for AppExchange / versioning / upgrades): requires packaging org and specific steps. Not necessary for student project.
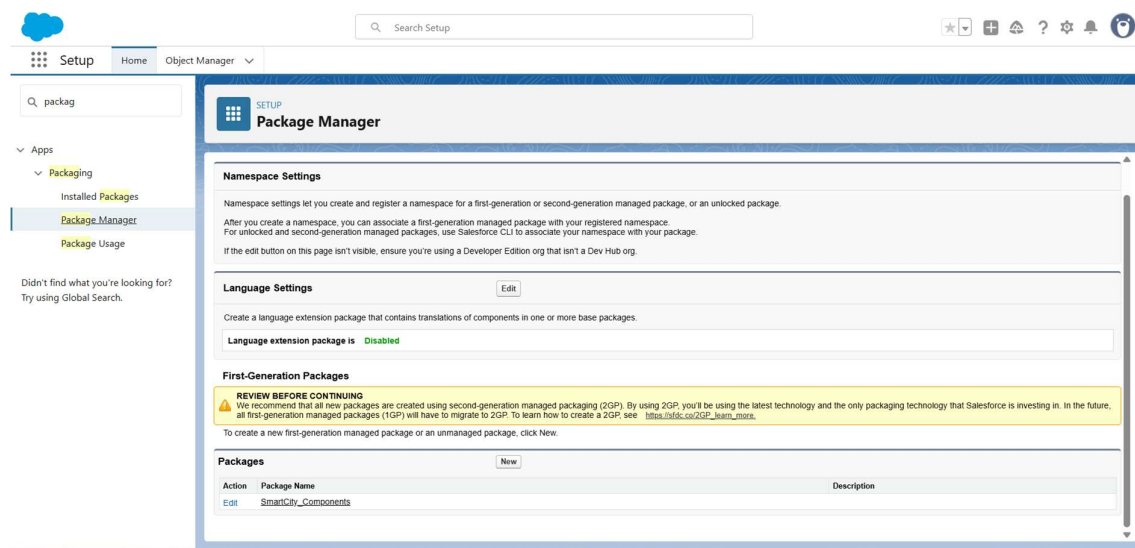
6.VS Code & Salesforce CLI

- **Authorize org (web)**

  sf auth web login --set-default-dev-hub --alias DevHub # for Dev Hub

  sf org login web --alias SmartCityMain

- **Deploy source (new sf CLI)**

  Deploy a single folder:

  sf project deploy start --source-dir force-app/main/default/classes --target-org SmartCityMain

- **Deploy entire project:**

  sf project deploy start --source-dir force-app --target-org SmartCityMain

- **Retrieve metadata from org:**

  sf project retrieve start --source-dir force-app/main/default --target-org SmartCityMain

- **Run Apex tests:**

  sfdx force:apex:test:run --classnames ComplaintUtilityTest --resultformat human --wait 10

  # or using sf if available:

  sf apex test run --classnames ComplaintUtilityTest --resultformat human --wait 10