

Phase 8: Data Management & Deployment - Library Tracking Project

1. Data Import Wizard

Use it to quickly import small sets of Book__c, Student__c, or Rental__c records from Excel/CSV. Example: Upload a list of 100 new students or books into Salesforce at once.

Monitor Bulk Data Load Jobs

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Monitor the status of recent bulk data load jobs. These jobs are created by Data Loader and other Bulk API client applications.

Quota

Your organization has processed 0 batches in the last 24 hours. Your organization can process 15,000 batches in a 24-hour period.

Resource used in the last 24 hours:
CPU: 0 milliseconds
IO: 0 bytes
Disk: 0 bytes

In Progress

Job ID	Submitted By	Start Time	Status	Job Type	Operation	Object	Records Processed	Records Failed	Progress
No records to display.									

Completed last 7 days

Job ID	Submitted By	Start Time	End Time	Status	Job Type	Operation	Object	Records Processed	Records Failed	Time to Complete (hh:mm:ss)
750ql000000nPOV	Kohale, Harsh	9/20/2025, 7:28 AM	9/20/2025, 7:28 AM	Closed	Bulk V1	Upsert	Student	2	2	00:01
750ql000000nTzW	Kohale, Harsh	9/20/2025, 7:24 AM	9/20/2025, 7:25 AM	Closed	Bulk V1	Upsert	Student	2	0	00:10
750ql000000nCTC	Kohale, Harsh	9/20/2025, 7:18 AM	9/20/2025, 7:18 AM	Closed	Bulk V1	Upsert	Student	2	2	00:00
750ql000000nSz2	Kohale, Harsh	9/20/2025, 7:07 AM	9/20/2025, 7:07 AM	Closed	Bulk V1	Upsert	Student	2	2	00:00
750ql000000nTr0	Kohale, Harsh	9/20/2025, 7:02 AM	9/20/2025, 7:02 AM	Closed	Bulk V1	Upsert	Student	2	2	00:04
750ql000000eR9L	Kohale, Harsh	9/18/2025, 12:46 AM	9/18/2025, 12:46 AM	Closed	Bulk V1	Upsert	Student	2	2	00:00
750ql000000eC90	Kohale, Harsh	9/18/2025, 12:33 AM	9/18/2025, 12:33 AM	Closed	Bulk V1	Upsert	Book	2	0	00:02

2. Data Loader

For large/bulk operations when your data grows. Example: Import 10,000 historical rental transactions or mass update the status of books. Use export function to check which books are overdue.

3. Duplicate Rules

Set up a Matching Rule on Student Email or Library Card Number. Prevents creating duplicate student records during imports or manual entry. Example: Two librarians trying to enter the same student—Salesforce alerts them.

SETUP Duplicate Rules											
All Duplicate Rules											
What Are Duplicate Rules?											
View: All Duplicate Rules											
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other All											
Rule Name	Description	Object	Matching Rule	Active	Last Modified By	Last Modified Date					
prevent duplicate account nrobenumber		Account	prevent duplicate nrobenumber	✓	har	8/7/2025					

4. Data Export & Backup

Schedule a weekly export of all Book__c, Student__c, and Rental__c data for backup. Before making major changes to triggers or automation, export your data first.

Name	Email__c	Phone__c	Date_of_A	Membership_ID__c		
Asha Kuma	asha@exa	9.12E+09	3-15-2025	MEM001		
Rohit Shar	rohit@exa	9.99E+09	7-20-2025	MEM002		

Name	Author__c	ISBN__c	Price__c	Status__c	Copies_Available__c		
The Hobbit	J.R.R. Tolkien	9.78E+11	399	Available	3		
Clean Code	Robert C. Martin	9.78E+12	899	Available	2		

5. Change Sets

Move your custom objects (Book__c, Student__c, Rental__c), flows, triggers, and layouts from your sandbox/dev org to your production org. Example: After testing a new flow for overdue notifications, deploy it via a change set.

6. Unmanaged vs Managed Packages

Unmanaged Package: Share your Library App with classmates or evaluators—others can see and edit the code. Managed Package: If you later decide to publish a polished version on AppExchange, use this to lock the code.

7. ANT Migration Tool

Script deployments for repeatability. Example: Your project has 10 Apex classes + 3 triggers; you can deploy them in one go with a single command. Useful if you're also using Git to track changes.

8. VS Code & SFDX (Salesforce DX)

Develop all custom code (triggers, Apex classes, Lightning components) locally. Use SFDX to pull changes from your org, push new metadata, and run tests. Example: Run `sfdx force:apex:test:run` to test your RentalHandler class or deploy your triggers to another org.

TEST NAME	OUTCOME	MESSAGE	RUNTIME (MS)
RentalTriggerHandler_Test.testBulkInsertAndReturn	Pass		743
RentalTriggerHandler_Test.testPreventDoubleRent	Pass		415
RentalTriggerHandler_Test.testRentAndReturnFlow	Pass		374
RentalTriggerHandler_Test.testValidationRules	Pass		233
=== Test Summary			
NAME	VALUE		
Outcome	Passed		
Tests Ran	4		
Pass Rate	100%		
Fail Rate	0%		
Skip Rate	0%		
Test Run Id	707gL00000Egnkb		
Test Setup Time	0 ms		
Test Execution Time	1765 ms		
Test Total Time	1765 ms		
Org Id	00DgL000007Sd0nUAC		
Username	harshkohale04378@agentforce.com		

Status: **Succeeded**
Deploy ID: 0AfgL00000AenyjSAB
Target Org: harshkohale04378@agentforce.com
Elapsed Time: 1.26s

Deployed Source

State	Name	Type	Path
Unchanged	RentalTriggerHandler	ApexClass	force-app\main\default\classes\RentalTriggerHandler.cls
Unchanged	RentalTriggerHandler	ApexClass	force-app\main\default\classes\RentalTriggerHandler.cls-meta.xml

Deploying Metadata

Deploying v64.0 metadata to harshkohale04378@agentforce.com using the v64.0 SOAP API.

✓ Preparing 526ms
⌚ Waiting for the org to respond - Skipped
✓ Deploying Metadata 717ms
 ▸ Components: 1/1 (100%)
⌚ Running Tests - Skipped
⌚ Updating Source Tracking - Skipped
✓ Done 0ms

Status: **Succeeded**
Deploy ID: 0AfgL00000AenyjSAB

```
user@LAPTOP-8NDVPUMB MINGW64 /d/Library (main)
$ sf apex run test --target-org Learn --tests RentalTriggerHandler_Test --result-format human
» Warning: @salesforce/cli update available from 2.103.7 to 2.106.6.
Run "sf apex get test -i 707gL00000Egozw -o harshkohale04378@agentforce.com" to retrieve test results
Run with --synchronous or increase --wait timeout to wait for results.
```

```
user@LAPTOP-8NDVPUMB MINGW64 /d/Library (main)
$ sf apex run test --target-org Learn --tests RentalTriggerHandler_Test --result-format human --wait 600
» Warning: @salesforce/cli update available from 2.103.7 to 2.106.6.
```

=== Test Results

TEST NAME	OUTCOME	MESSAGE	RUNTIME (MS)
RentalTriggerHandler_Test.testBulkInsertAndReturn	Pass		743

Topic	Library App Example	Benefit
Data Import Wizard	Import a small batch of new books or students	Quick and easy
Data Loader	Bulk import/update rental records	Handles large data sets
Duplicate Rules	Stop duplicate student records	Cleaner data
Data Export	Weekly backup of all data	Safety
Change Sets	Move app components from sandbox to production	Low-code deployment
Unmanaged Package	Share your Library App with others	Collaboration
ANT Migration Tool	Automate deployment of metadata	Repeatable & scriptable
VS Code & SFDX	Build, test, deploy Apex code and components	Full developer workflow