Week 3 Lab Experiment 3

3] Perform the following DB operations using Cassandra.

a) Create a keyspace by name Library
b) Create a column family by name Library-Info with attributes
   Stud_Id Primary Key, Counter_value of type Counter, Stud_Name,
   Book-Name, Book-Id,
   Date_of_issue
c) Insert the values into the table in batch
d) Display the details of the table created and increase the value of the counter
e) Write a query to show that a student with id 112 has taken a book "BDA" 2 times.
f) Export the created column to a csv file
g) Import a given csv dataset from local file system into Cassandra column family

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Use HELP for help.
cqlsh> DESCRIBE KEYSPACES;

system       system_distributed  system_traces  system_virtual_schema
system_auth  system_schema       system_views

cqlsh> CREATE KEYSPACE Library
   ... WITH replication = {'class': 'SimpleStrategy', 'replication_factor': 1};
cqlsh> USE Library;
cqlsh:library> CREATE TABLE Library_Info (
           ...     Stud_Id int,
           ...     Stud_Name text,
           ...     Book_Name text,
           ...     Book_Id int,
           ...     Date_of_issue date,
           ...     PRIMARY KEY (Stud_Id, Book_Id)
           ... );
cqlsh:library> CREATE TABLE Book_Count (
           ...     Stud_Id int,
           ...     Book_Name text,
           ...     Counter_value counter,
           ...     PRIMARY KEY (Stud_Id, Book_Name)
           ... );
cqlsh:library> BEGIN BATCH
           ... INSERT INTO Library_Info (Stud_Id, Stud_Name, Book_Name, Book_Id, Date_of_issue)
           ... VALUES (112, 'Rahul', 'BDA', 1, '2026-02-24');
           ...
           ... INSERT INTO Library_Info (Stud_Id, Stud_Name, Book_Name, Book_Id, Date_of_issue)
           ... VALUES (113, 'Anita', 'ML', 2, '2026-02-24');
           ... APPLY BATCH;
cqlsh:library> UPDATE Book_Count
           ... SET Counter_value = Counter_value + 1
           ... WHERE Stud_Id = 112 AND Book_Name = 'BDA';
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            ... );
cqlsh:library> CREATE TABLE Book_Count (
           ...     Stud_Id int,
           ...     Book_Name text,
           ...     Counter_value counter,
           ...     PRIMARY KEY (Stud_Id, Book_Name)
           ... );
cqlsh:library> BEGIN BATCH
           ... INSERT INTO Library_Info (Stud_Id, Stud_Name, Book_Name, Book_Id, Date_of_issue)
           ... VALUES (112, 'Rahul', 'BDA', 1, '2026-02-24');
           ...
           ... INSERT INTO Library_Info (Stud_Id, Stud_Name, Book_Name, Book_Id, Date_of_issue)
           ... VALUES (113, 'Anita', 'ML', 2, '2026-02-24');
           ... APPLY BATCH;
cqlsh:library> UPDATE Book_Count
           ... SET Counter_value = Counter_value + 1
           ... WHERE Stud_Id = 112 AND Book_Name = 'BDA';
cqlsh:library>
cqlsh:library> UPDATE Book_Count
           ... SET Counter_value = Counter_value + 1
           ... WHERE Stud_Id = 112 AND Book_Name = 'BDA';
cqlsh:library> SELECT * FROM Library_Info;

 stud_id | book_id | book_name | date_of_issue | stud_name
---------+---------+-----------+---------------+-----------
     113 |       2 |        ML |    2026-02-24 |     Anita
     112 |       1 |       BDA |    2026-02-24 |     Rahul

(2 rows)
cqlsh:library> SELECT * FROM Book_Count;

 stud_id | book_name | counter_value
---------+-----------+---------------
     112 |       BDA |             2

(1 rows)
cqlsh:library> UPDATE Book_Count
          ... SET Counter_value = Counter_value + 1
          ... WHERE Stud_Id = 112 AND Book_Name = 'BDA';
cqlsh:library> SELECT Counter_value
          ... FROM Book_Count
          ... WHERE Stud_Id = 112 AND Book_Name = 'BDA';

 counter_value
---------------
             3

(1 rows)
cqlsh:library> exit

C:\Users\BPC\Downloads\apache-cassandra-4.1.10-bin\apache-cassandra-4.1.10\bin>docker exec -it my-cassandra cqlsh -e "COPY Library.Library_Info
TO '/tmp/library.csv' WITH HEADER = true;"
Using 7 child processes

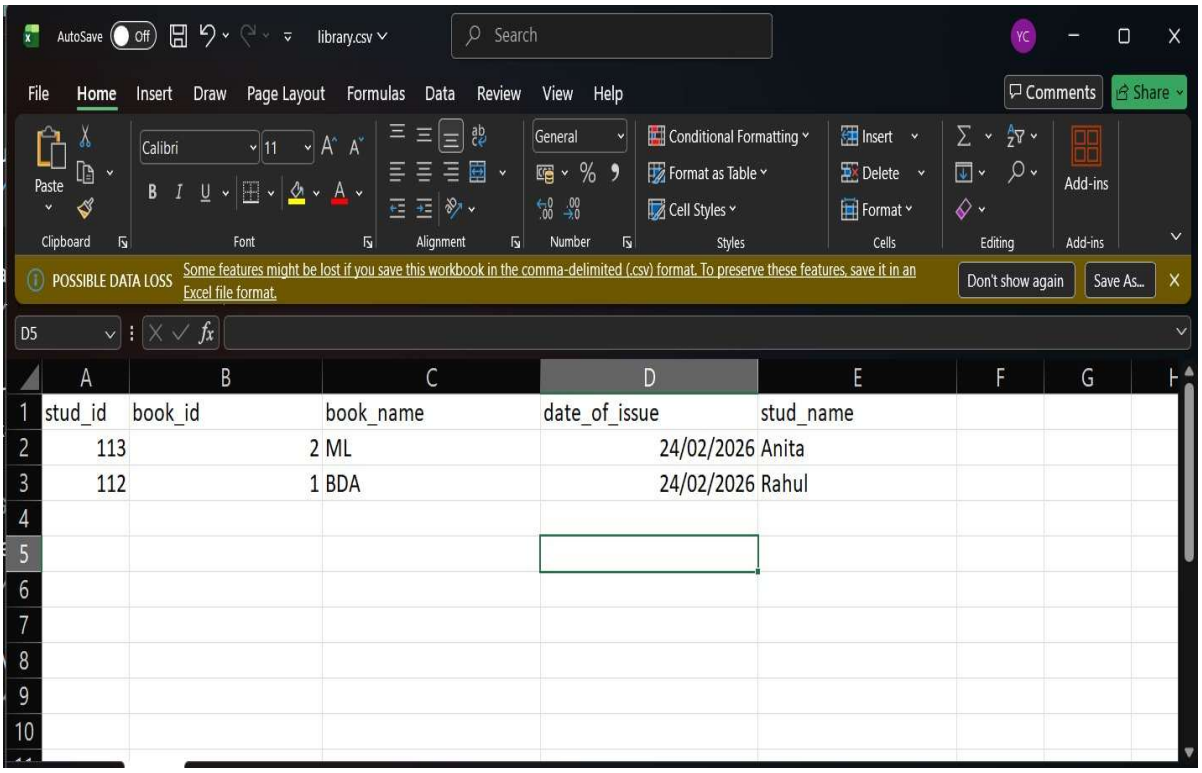
Starting copy of library.library_info with columns [stud_id, book_id, book_name, date_of_issue, stud_name].
Processed: 2 rows; Rate:       7 rows/s; Avg. rate:       3 rows/s
2 rows exported to 1 files in 0.633 seconds.

C:\Users\BPC\Downloads\apache-cassandra-4.1.10-bin\apache-cassandra-4.1.10\bin>docker cp my-cassandra:/tmp/library.csv library.csv
Successfully copied 2.05kB to C:\Users\BPC\Downloads\apache-cassandra-4.1.10-bin\apache-cassandra-4.1.10\bin\library.csv

C:\Users\BPC\Downloads\apache-cassandra-4.1.10-bin\apache-cassandra-4.1.10\bin>docker cp library.csv my-cassandra:/tmp/library.csv
Successfully copied 2.05kB to my-cassandra:/tmp/library.csv

C:\Users\BPC\Downloads\apache-cassandra-4.1.10-bin\apache-cassandra-4.1.10\bin>docker exec -it my-cassandra cqlsh -e "COPY Library.Library_Info
FROM '/tmp/library.csv' WITH HEADER = true;"
Using 7 child processes

Starting copy of library.library_info with columns [stud_id, book_id, book_name, date_of_issue, stud_name].
Processed: 2 rows; Rate:       4 rows/s; Avg. rate:       5 rows/s
2 rows imported from 1 files in 0.379 seconds (0 skipped).
```


AutoSave Off
library.csv
Search
File Home Insert Draw Page Layout Formulas Data Review View Help
Comments Share
Paste
Calibri 11
General
Conditional Formatting
Format as Table
Cell Styles
Insert
Delete
Format
Add-ins
Clipboard Font Alignment Number Styles Cells Editing Add-ins
POSSIBLE DATA LOSS Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an Excel file format.
Don't show again
Save As...
D5
stud_id book_id book_name date_of_issue stud_name
113 2 ML 24/02/2026 Anita
112 1 BDA 24/02/2026 Rahul