LAB – 3

Perform the following DB operations using Cassandra.

a)Create a keyspace by name Library

```
CREATE KEYSPACE Library WITH REPLICATION = {'class': 'SimpleStrategy',
'replication_factor': 1};
```

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

```
CREATE TABLE Library.Library_Info (
    Stud_Id int,
    Book_Id int,
    Stud_Name text,
    Book_Name text,
    Date_of_issue date,
    PRIMARY KEY (Stud_Id, Book_Id)
);

CREATE TABLE Library.Library_Counters (
    Stud_Id int,
    Book_Id int,
    Counter_value counter,
    PRIMARY KEY (Stud_Id, Book_Id)
);
```

c) Insert values into Library_Info in batch

```
BEGIN BATCH
```

INSERT INTO Library.Library_Info (Stud_Id, Book_Id, Stud_Name, Book_Name, Date_of_issue) VALUES (112, 1001, 'Alice', 'BDA', '2024-05-01');

INSERT INTO Library.Library_Info (Stud_Id, Book_Id, Stud_Name, Book_Name, Date_of_issue) VALUES (113, 1002, 'Bob', 'Data Science', '2024-05-02');

INSERT INTO Library.Library_Info (Stud_Id, Book_Id, Stud_Name, Book_Name, Date_of_issue) VALUES (114, 1003, 'Charlie', 'Algorithms', '2024-05-03');

APPLY BATCH;

d) Display details from Library_Info and increase the counter in Library_Counters

SELECT * FROM Library.Library_Info;

UPDATE Library.Library_Counters

SET Counter_value = Counter_value + 1

WHERE Stud_Id = 112 AND Book_Id = 1001;

e) Show that student with id 112 has taken book "BDA" 2 times

UPDATE Library.Library_Counters SET Counter_value = Counter_value + 1 WHERE Stud_Id = 112 AND Book_Id = 1001;

UPDATE Library.Library_Counters SET Counter_value = Counter_value + 1 WHERE Stud_Id = 112 AND Book_Id = 1001;

SELECT Stud_Id, Book_Id, Counter_value FROM Library.Library_Counters WHERE Stud_Id = 112 AND Book_Id = 1001;

f) Export Library_Info table to CSV

COPY Library.Library_Info TO '/home/hadoop/Desktop/library_info.csv' WITH HEADER = TRUE;

g) Import CSV data into Library_Info

COPY Library.Library_Info FROM '/home/hadoop/Desktop/library_info.csv' WITH HEADER = TRUE;

```
hadoop@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ cqlsh
Connected to Test Cluster at 127.0.0.1:9042
[cqlsh 6.1.0 | Cassandra 4.1.8 | CQL spec 3.4.6 | Native protocol v5]
Use HELP for help.
cqlsh> CREATE KEYSPACE Library WITH REPLICATION = {'class': 'SimpleStrategy', 'replication_factor': 1};
cqlsh> CREATE TABLE Library.Library_Info (
   ...     Stud_Id int,
   ...     Book_Id int,
   ...     Stud_Name text,
   ...     Book_Name text,
   ...     Date_of_issue date,
   ...     PRIMARY KEY (Stud_Id, Book_Id)
   ... );
cqlsh> CREATE TABLE Library.Library_Counters (
   ...     Stud_Id int,
   ...     Book_Id int,
   ...     Counter_value counter,
   ...     PRIMARY KEY (Stud_Id, Book_Id)
   ... );
cqlsh> BEGIN BATCH
   ... INSERT INTO Library.Library_Info (Stud_Id, Book_Id, Stud_Name, Book_Name, Date_of_issue)
   ... VALUES (112, 1001, 'Alice', 'BDA', '2024-05-01');
   ...
   ... INSERT INTO Library.Library_Info (Stud_Id, Book_Id, Stud_Name, Book_Name, Date_of_issue)
   ... VALUES (113, 1002, 'Bob', 'Data Science', '2024-05-02');
   ...
   ... INSERT INTO Library.Library_Info (Stud_Id, Book_Id, Stud_Name, Book_Name, Date_of_issue)
   ... VALUES (114, 1003, 'Charlie', 'Algorithms', '2024-05-03');
   ... APPLY BATCH;
```

```
cqlsh> SELECT * FROM Library.Library_Info;

 stud_id | book_id | book_name    | date_of_issue | stud_name
---------+---------+--------------+---------------+-----------
     114 |    1003 |   Algorithms |    2024-05-03 |   Charlie
     113 |    1002 | Data Science |    2024-05-02 |       Bob
     112 |    1001 |          BDA |    2024-05-01 |     Alice

(3 rows)
cqlsh> UPDATE Library.Library_Counters
   ... SET Counter_value = Counter_value + 1
   ... WHERE Stud_Id = 112 AND Book_Id = 1001;
cqlsh> UPDATE Library.Library_Counters SET Counter_value = Counter_value + 1 WHERE Stud_Id = 112 AND Book_Id = 1001;
cqlsh> UPDATE Library.Library_Counters SET Counter_value = Counter_value + 1 WHERE Stud_Id = 112 AND Book_Id = 1001;
cqlsh> SELECT Stud_Id, Book_Id, Counter_value FROM Library.Library_Counters WHERE Stud_Id = 112 AND Book_Id = 1001;

 stud_id | book_id | counter_value
---------+---------+---------------
     112 |    1001 |             3

(1 rows)
cqlsh> COPY Library.Library_Info TO '/home/hadoop/Desktop/library_info.csv' WITH HEADER = TRUE;
Using 16 child processes

Starting copy of library.library_info with columns [stud_id, book_id, book_name, date_of_issue, stud_name].
Processed: 3 rows; Rate:      67 rows/s; Avg. rate:      67 rows/s
cqlsh> COPY Library.Library_Info FROM '/home/hadoop/Desktop/library_info.csv' WITH HEADER = TRUE;
Using 16 child processes

Starting copy of library.library_info with columns [stud_id, book_id, book_name, date_of_issue, stud_name].
Processed: 3 rows; Rate:       4 rows/s; Avg. rate:       7 rows/s
3 rows imported from 1 files in 0.445 seconds (0 skipped).
```