

EXPERIMENT:4

Perform the following DB operations using Cassandra.

- Create a keyspace by name Library
- 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
- Insert the values into the table in batch
- Display the details of the table created and increase the value of the counter
- Write a query to show that a student with id 112 has taken a book “BDA” 2 times.
- Export the created column to a csv file
- Import a given csv dataset from local file system into Cassandra column family

```
les Terminal Apr 1 14:23
bmscse@bmscse-HP-Elite-Tower-800-G9-Desktop-PC: ~
bmscse@bmscse-HP-Elite-Tower-800-G9-Desktop-PC:~$ [[200-docker run --name cassandra -d -p 9042:9042 cassandra:latest
docker: command not found
bmscse@bmscse-HP-Elite-Tower-800-G9-Desktop-PC:~$ -docker run --name cassandra -d -p 9042:9042 cassandra:latest
Command '-docker' not found, did you mean:
  command 'docker' from snap docker (27.5.1)
  command 'docker' from deb docker.io (26.1.3-0ubuntu1-22.04.1)
  command 'docker' from deb podman-docker (3.4.4+ds1-1ubuntu1.22.04.3)
  command 'kdocker' from deb kdocker (5.3-1)
See 'snap info <snapnames>' for additional versions.
bmscse@bmscse-HP-Elite-Tower-800-G9-Desktop-PC:~$ docker logs -f cassandra
Command 'docker' not found, but can be installed with:
sudo snap install docker # version 27.5.1, or
sudo apt install docker.io # version 26.1.3-0ubuntu1-22.04.1
sudo apt install podman-docker # version 3.4.4+ds1-1ubuntu1.22.04.3
See 'snap info docker' for additional versions.
bmscse@bmscse-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo apt update
[sudo] password for bmscse:
[sudo] password for bmscse:
bSorry, try again.
[sudo] password for bmscse:
bSorry, try again.
[sudo] password for bmscse:
[sudo] password for bmscse:
[sudo] 3 incorrect password attempts
[sudo] password for bmscse:
bSorry, try again.
[sudo] password for bmscse:
bSorry, try again.
[sudo] password for bmscse:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-6.2.0-26-generic linux-hwe-6.2.0-headers-6.2.0-26
  linux-image-6.2.0-26-generic linux-modules-6.2.0-26-generic
  linux-modules-extra-6.2.0-26-generic
Use 'sudo apt autoremove' to remove them.
Suggested packages:
  cassandra-tools
The following packages will be upgraded:
  cassandra
1 upgraded, 0 newly installed, 0 to remove and 316 not upgraded.
Need to get 48.7 MB of archives.
After this operation, 88.4 kB of additional disk space will be used.
Get:1 https://archive.ubuntu.com/ubuntu/artifactory/cassandra-deb 4ix/main amd64 cassandra all 4.1.8 [48.7 MB]
Fetched 48.7 MB in 25s (1,949 kB/s)
(Reading database ... 258222 files and directories currently installed.)
Preparing to unpack .../cassandra-4.1.8_all.deb ...
Unpacking cassandra (4.1.8) over (4.1.5) ...
Setting up cassandra (4.1.8) ...
Installing new version of config file /etc/cassandra/cassandra.yaml ...
Installing new version of config file /etc/cassandra/commitlog_archiving.properties ...
Installing new version of config file /etc/cassandra/credentials.sample ...
Installing new version of config file /etc/cassandra/jvm-server.options ...
vm-max-heap-count = 1048576
```

```
vm.max_map_count = 1048575
net.ipv4.tcp_keepalive_time = 300
update-rc.d warning: start and stop actions are no longer supported; falling ba
ck to defaults
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ cassandra -f
OpenJDK 64-Bit Server VM warning: Option UseConcMarkSweepGC was deprecated in version 9.0 and will likely be removed in a future release.
Could not rename log file '/var/log/cassandra/gc.log' to '/var/log/cassandra/gc.log.1' (permisssion denied).
[0.000s][error][logging] Error opening log file '/var/log/cassandra/gc.log': Permission denied
[0.000s][error][logging] Initialization of output 'file=/var/log/cassandra/gc.log' using options 'filecount=10,filesize=10485760' failed.
Invalid -Xlog option '-Xlog:gc=info,heap=trace,age*=debug,safepoint=info,promotion*=trace:file=/var/log/cassandra/gc.log:time,uptime,pid,tid,level:filecount=10,filesize=10485760', see error log for detai
ls.
Error: Could not create the Java Virtual Machine.
Error: A fatal exception has occurred. Program will exit.
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo mkdir -p /var/log/cassandra
sudo chown -R $(whoami):$(whoami) /var/log/cassandra
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo chmod -R 777 /var/log/cassandra
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo systemctl restart cassandra

bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ ^[[200~sudo nano /etc/cassandra/cassandra-env.sh
sudo: command not found
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ ~sudo nano /etc/cassandra/cassandra-env.sh
Command '-sudo' not found, did you mean:
  command 'sudo' from deb sudo (1:9.9-1ubuntu2.4)
  command 'sudo' from deb sudo-ldap (1:9.9-1ubuntu2.4)
Try: sudo apt install <deb name>
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo nano /etc/cassandra/cassandra-env.sh
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ nodetool status
Datacenter: datacenter1
=====
Status=Up/Down
// State=Normal/Leaving/Joining/Moving
-- Address Load Tokens Owns Host ID Rack
UN 127.0.0.1 300.28 KiB 16 7 rack1

Note: Non-system keyspaces don't have the same replication settings, effective ownership information is meaningless
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ cqlsh
connected to Test cluster at 127.0.0.1:9042
[cqlsh 6.1.0 | Cassandra 4.1.0 | CQL spec 3.4.6 | Native protocol v5]
Use HELP for help.
cqlsh> CREATE KEYSPACE Students WITH REPLICATION =
... {'class': 'SimpleStrategy', 'replication_factor':1};

cqlsh>
cqlsh>
cqlsh>
```

```

cqlsh> USE Students;
cqlsh:students> BEGIN BATCH
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (1, 'Asha', '2012-03-12', 79.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (2, 'Krian', '2012-03-12', 89.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (3, 'Tarun', '2012-03-12', 78.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (4, 'Sanrth', '2012-03-12', 90.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (5, 'Sinha', '2012-03-12', 67.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (6, 'Rohan', '2012-03-12', 56.9);
... APPLY BATCH;
InvalidRequest: Error from server: code=2200 [Invalid query] message="table students_info does not exist"
cqlsh:students>
cqlsh:students> DESCRIBE KEYSPACES;

company      students      system_distributed  system_views
emp          system        system_schema      system_virtual_schema
emp_data     system_auth   system_traces

cqlsh:students> DESCRIBE TABLES;
cqlsh:students> DESCRIBE TABLES;
cqlsh:students> DESCRIBE TABLES;
cqlsh:students> CREATE TABLE Students_Info (
... Roll_No int PRIMARY KEY,
... StudName text,
... DateOfJoining timestamp,
... Last_exan_Percent double
... );
cqlsh:students> BEGIN BATCH
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (1, 'Asha', '2012-03-12', 79.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (2, 'Krian', '
[1]+  Stopped                  cqlsh
bmscsec@bmscsec-HP-Elite-Tower-800-G9-Desktop-PC:~$ BEGIN BATCH
INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
VALUES (1, 'Asha', '2012-03-12', 79.9);

INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
VALUES (2, 'Krian', '2012-03-12', 89.9);

INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
VALUES (3, 'Tarun', '2012-03-12', 78.9);

INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
```

```

cqlsh:students> BEGIN BATCH
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (1, 'Asha', '2012-03-12', 79.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (2, 'Krian', '2012-03-12', 89.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (3, 'Tarun', '2012-03-12', 78.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (4, 'Sanrth', '2012-03-12', 90.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (5, 'Slnha', '2012-03-12', 67.9);
...
... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, Last_exan_Percent)
... VALUES (6, 'Rohan', '2012-03-12', 56.9);
... APPLY BATCH;
cqlsh:students> SELECT*FROM students_info;

roll_no | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Slnha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | 89.9 | Krian
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 18:30:00.000000+0000 | 56.9 | Rohan
3 | 2012-03-11 18:30:00.000000+0000 | 78.9 | Tarun

(6 rows)
cqlsh:students> SELECT*FROM student_info WHERE roll_no IN(1,2,3);
InvalidRequest: Error from server: code=2200 [Invalid query] message="table student_info does not exist"
cqlsh:students> SELECT*FROM student_info WHERE roll_no IN(1,2,3);
InvalidRequest: Error from server: code=2200 [Invalid query] message="table student_info does not exist"
cqlsh:students> SELECT*FROM students_info WHERE roll_no IN(1,2,3);

roll_no | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | 89.9 | Krian
3 | 2012-03-11 18:30:00.000000+0000 | 78.9 | Tarun

(3 rows)
cqlsh:students> SELECT*FROM students_info WHERE studname="Asha";
SyntaxException: line 1:47 no viable alternative at input '1': (SELECT*FROM students_info WHERE studname=["Ash"]a");
cqlsh:students> SELECT * FROM students_info WHERE studname = 'Asha';
InvalidRequest: Error from server: code=2200 [Invalid query] message="Cannot execute this query as it might involve data filtering and thus may have unpredictable performance. If you want to execute this query despite the performance unpredictability, use ALLOW FILTERING"
cqlsh:students> SELECT * FROM students_info WHERE studname = 'Asha' ALLOW FILTERING;

roll_no | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha

(1 rows)

```

```

cqlsh:students> select roll_no as "USN" from students_info;

USN
----
5
1
2
4
6
3

(6 rows)
cqlsh:students> UPDATE roll_no as "USN" from students_info;
SyntaxException: line 1:15 mismatched input 'as' expecting K_SET (UPDATE roll_no [as] "US...")
cqlsh:students> ALTER TABLE students_info RENAME roll_no TO USN;
cqlsh:students>
cqlsh:students> select*from students_info;

usn | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Slnha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | 89.9 | Krian
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 18:30:00.000000+0000 | 56.9 | Rohan
3 | 2012-03-11 18:30:00.000000+0000 | 78.9 | Tarun

(6 rows)
cqlsh:students> UPDATE students_info SET studname='David Sheen' WHERE usn=2;
cqlsh:students> select*from students_info;

usn | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Slnha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | 89.9 | David Sheen
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 18:30:00.000000+0000 | 56.9 | Rohan
3 | 2012-03-11 18:30:00.000000+0000 | 78.9 | Tarun

(6 rows)
cqlsh:students> UPDATE students_info SET rollno=6 WHERE rollno=3;
InvalidRequest: Error from server: code=2200 [Invalid query] message="Undefined column name rollno in table students.students_info"
cqlsh:students> cqlsh:students> UPDATE students_info SET usn=6 WHERE usn=3;
[2]- Stopped cqlsh
bmscscse@bmscscse-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> use students
...
...
...
cqlsh>

```

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tes  Terminal  Apr 1 14:28  bmsccscse@bmsccscse-HP-Elite-Tower-800-G9-Desktop-PC: ~

[3]+  Stopped                  cqlsh
bmsccscse@bmsccscse-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> USE students;
cqlsh:students> SELECT * FROM students_info;

-----
usn | dateofjoining | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Sinha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | 89.9 | David Sheen
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 18:30:00.000000+0000 | 56.9 | Rohan
3 | 2012-03-11 18:30:00.000000+0000 | 78.9 | Tarun

(6 rows)
cqlsh:students> UPDATE students_info SET usn=6 WHERE usn=3;
InvalidRequest: Error from server: code=2200 [Invalid query] message="PRIMARY KEY part usn found in SET part"
cqlsh:students> UPDATE students_info SET usn = 10 WHERE roll no = 3;
InvalidRequest: Error from server: code=2200 [Invalid query] message="PRIMARY KEY part usn found in SET part"
cqlsh:students> UPDATE students_info SET usn = 6 WHERE usn= 3;
InvalidRequest: Error from server: code=2200 [Invalid query] message="PRIMARY KEY part usn found in SET part"
cqlsh:students> DELETE FROM students_info WHERE usn = 3;
cqlsh:students> INSERT INTO students_info (usn, dateofjoining, last_exan_percent, studname)
... VALUES (6, '2012-03-11 18:30:00', 78.9, 'Tarun');
cqlsh:students> select*from STUDENTS_INFO;

-----
usn | dateofjoining | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Sinha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | 89.9 | David Sheen
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 13:00:00.000000+0000 | 78.9 | Tarun

(5 rows)
cqlsh:students> DELETE last_exan_percent from students_info where usn=2;
cqlsh:students> select*from students_info;

-----
usn | dateofjoining | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Sinha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | null | David Sheen
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 13:00:00.000000+0000 | 78.9 | Tarun

(5 rows)
cqlsh:students> DELETE FROM students_info where usn=2;
cqlsh:students> SELECT*FROM STUDENTS_INFO;

-----
usn | dateofjoining | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Sinha
```

```
tes  Terminal  Apr 1 14:29  bmsccscse@bmsccscse-HP-Elite-Tower-800-G9-Desktop-PC: ~

(5 rows)
cqlsh:students> DELETE last_exan_percent from students_info where usn=2;
cqlsh:students> select*from students_info;

-----
usn | dateofjoining | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Sinha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
2 | 2012-03-11 18:30:00.000000+0000 | null | David Sheen
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 13:00:00.000000+0000 | 78.9 | Tarun

(5 rows)
cqlsh:students> DELETE FROM students_info where usn=2;
cqlsh:students> SELECT*FROM STUDENTS_INFO;

-----
usn | dateofjoining | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | 67.9 | Sinha
1 | 2012-03-11 18:30:00.000000+0000 | 79.9 | Asha
4 | 2012-03-11 18:30:00.000000+0000 | 90.9 | Sanrth
6 | 2012-03-11 13:00:00.000000+0000 | 78.9 | Tarun

(4 rows)
cqlsh:students> ALTER TABLE STUDENTS_INFO ADD hobbies set<text>
...
...
...
...
Statements are terminated with a ';'. You can press CTRL-C to cancel an incomplete statement.
cqlsh:students> ALTER TABLE STUDENTS_INFO ADD hobbies set<text>
...
cqlsh:students> ALTER TABLE STUDENTS_INFO ADD hobbies set<text>;
cqlsh:students>
cqlsh:students> select*from students_info;

-----
usn | dateofjoining | hobbies | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | null | 67.9 | Sinha
1 | 2012-03-11 18:30:00.000000+0000 | null | 79.9 | Asha
4 | 2012-03-11 18:30:00.000000+0000 | null | 90.9 | Sanrth
6 | 2012-03-11 13:00:00.000000+0000 | null | 78.9 | Tarun

(4 rows)
cqlsh:students> ALTER TABLE students_info ADD language list<text>;
cqlsh:students> select*from students_info;

-----
usn | dateofjoining | hobbies | language | last_exan_percent | studname
-----
5 | 2012-03-11 18:30:00.000000+0000 | null | null | 67.9 | Sinha
1 | 2012-03-11 18:30:00.000000+0000 | null | null | 79.9 | Asha
4 | 2012-03-11 18:30:00.000000+0000 | null | null | 90.9 | Sanrth
6 | 2012-03-11 13:00:00.000000+0000 | null | null | 78.9 | Tarun
```

```
Terminal
Apr 1 14:29
bmscscse@bmscscse-HP-Elite-Tower-800-G9-Desktop-PC: ~

cqlsh:students>
cqlsh:students> select*from students_info;

-----
| usn | dateofjoining | hobbies | last_exam_percent | studname |
-----+-----+-----+-----+-----
| 5 | 2012-03-11 18:30:00.000000+0000 | null | 67.9 | Sinha |
| 1 | 2012-03-11 18:30:00.000000+0000 | null | 79.9 | Asha |
| 4 | 2012-03-11 18:30:00.000000+0000 | null | 90.9 | Sanrth |
| 6 | 2012-03-11 13:00:00.000000+0000 | null | 78.9 | Tarun |
-----
(4 rows)

cqlsh:students> ALTER TABLE students_info ADD language list<text>;
cqlsh:students> select*from students_info;

-----
| usn | dateofjoining | hobbies | language | last_exam_percent | studname |
-----+-----+-----+-----+-----+-----
| 5 | 2012-03-11 18:30:00.000000+0000 | null | null | 67.9 | Sinha |
| 1 | 2012-03-11 18:30:00.000000+0000 | null | null | 79.9 | Asha |
| 4 | 2012-03-11 18:30:00.000000+0000 | null | null | 90.9 | Sanrth |
| 6 | 2012-03-11 13:00:00.000000+0000 | null | null | 78.9 | Tarun |
-----
(4 rows)

cqlsh:students> UPDATE students_info SET hobbies=hobbies+('Chess,Table Tennis') where usn=1;
cqlsh:students> SELECT*FROM STUDENTS_INFO;

-----
| usn | dateofjoining | hobbies | language | last_exam_percent | studname |
-----+-----+-----+-----+-----+-----
| 5 | 2012-03-11 18:30:00.000000+0000 | null | null | 67.9 | Sinha |
| 1 | 2012-03-11 18:30:00.000000+0000 | ('Chess,Table Tennis') | null | 79.9 | Asha |
| 4 | 2012-03-11 18:30:00.000000+0000 | null | null | 90.9 | Sanrth |
| 6 | 2012-03-11 13:00:00.000000+0000 | null | null | 78.9 | Tarun |
-----
(4 rows)

cqlsh:students> SELECT*FROM student_info where usn=1;
InvalidRequest: Error from server: code=2200 [Invalid query] message="table student_info does not exist"
cqlsh:students> select*from students_info where usn=1;

-----
| usn | dateofjoining | hobbies | language | last_exam_percent | studname |
-----+-----+-----+-----+-----+-----
| 1 | 2012-03-11 18:30:00.000000+0000 | ('Chess,Table Tennis') | null | 79.9 | Asha |
-----
(1 rows)

cqlsh:students> update students_info set language=language+('Hindi,English') where usn=1;
cqlsh:students> select*from students_info;

-----
| usn | dateofjoining | hobbies | language | last_exam_percent | studname |
-----+-----+-----+-----+-----+-----
| 5 | 2012-03-11 18:30:00.000000+0000 | null | null | 67.9 | Sinha |
| 1 | 2012-03-11 18:30:00.000000+0000 | ('Chess,Table Tennis') | ('Hindi,English') | 79.9 | Asha |
| 4 | 2012-03-11 18:30:00.000000+0000 | null | null | 90.9 | Sanrth |
| 6 | 2012-03-11 13:00:00.000000+0000 | null | null | 78.9 | Tarun |
-----
(4 rows)

cqlsh:students>
```

```
Activities Terminal
Apr 1 14:40
bmscscse@bmscscse-HP-Elite-Tower-800-G9-Desktop-PC: ~

(4 rows)
cqlsh:students> CREATE TABLE library_book (
... counter_value counter,
... book_name varchar,
... stud_name varchar,
... PRIMARY KEY (book_name, stud_name)
... );
cqlsh:students> SELECT*FROM LIBRARY_BOOK;

-----
| book_name | stud_name | counter_value |
-----+-----+-----
(0 rows)

cqlsh:students> BEGIN BATCH
... -- Inserting 4 records into library_book table
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Big Data Analytics', 'Jeet');
...
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Machine Learning', 'Anit');
...
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Data Science Essentials', 'Ravi');
...
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Cloud Computing', 'Priya');
...
InvalidRequest: Error from server: code=2200 [Invalid query] message="INSERT statements are not allowed on counter tables, use UPDATE instead"
cqlsh:students> BEGIN BATCH
... -- Inserting 4 records into library_book table with counter initialized to 0
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Big Data Analytics', 'Jeet');
...
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Machine Learning', 'Anit');
...
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Data Science Essentials', 'Ravi');
...
... INSERT INTO library_book (counter_value, book_name, stud_name)
... VALUES (0, 'Cloud Computing', 'Priya');
...
InvalidRequest: Error from server: code=2200 [Invalid query] message="INSERT statements are not allowed on counter tables, use UPDATE instead"
cqlsh:students> -- Load data into the counter column
cqlsh:students> UPDATE library_book
... SET counter_value = counter_value + 1
... WHERE book_name = 'Big data Analytics'
... AND stud_name = 'Jeet';
cqlsh:students> SELECT*FROM library_book;

-----
| book_name | stud_name | counter_value |
-----+-----+-----
| Big data Analytics | Jeet | 1 |
-----
(1 rows)

cqlsh:students>
```

```
Activities Terminal Apr 1 14:41 bmscsece@bmscsece-HP-Elite-Tower-800-G9-Desktop-PC: ~  
... INSERT INTO library_book (counter_value, book_name, stud_name)  
... VALUES (0, 'Data Science Essentials', 'Ravi');  
...  
... INSERT INTO library_book (counter_value, book_name, stud_name)  
... VALUES (0, 'Cloud Computing', 'Priya');  
... APPLY BATCH;  
InvalidRequest: Error from server: code=2200 [Invalid query] message="INSERT statements are not allowed on counter tables, use UPDATE instead"  
cqlsh:students> -- Load data into the counter column  
cqlsh:students> UPDATE library_book  
... SET counter_value = counter_value + 1  
... WHERE book_name = 'Big data Analytics'  
... AND stud_name = 'jeet';  
cqlsh:students> SELECT * FROM library_book;  
  
book_name | stud_name | counter_value  
-----  
Big data Analytics | jeet | 1  
  
(1 rows)  
cqlsh:students> -- TIME TO LIVE (TTL) Example  
cqlsh:students> CREATE TABLE userlogin (  
... user_id int PRIMARY KEY,  
... password text  
... );  
  
cqlsh:students>  
cqlsh:students>  
cqlsh:students> SELECT * FROM userlogin;  
  
user_id | password  
-----  
  
(0 rows)  
cqlsh:students> INSERT INTO userlogin(user_id, password)  
... VALUES (1, 'infy')  
... USING TTL 30;  
cqlsh:students> SELECT * FROM userlogin;  
  
user_id | password  
-----  
1 | infy  
  
(1 rows)  
cqlsh:students> SELECT TTL(password)  
... FROM userlogin  
... WHERE user_id = 1;  
  
ttl(password)  
-----  
  
(0 rows)  
cqlsh:students>
```

```
Activities Terminal Apr 1 14:49 bmsccse@bmsccse-HP-Elite-Tower-800-G9-Desktop-PC: ~

CREATE TABLE students.elearninglists (
  id uuid PRIMARY KEY,
  course_id uuid,
  course_order int,
  courseowner text,
  title text
) WITH additional_write_policy = '99p'
AND bloom_filter_fp_chance = 0.01
AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
AND cdc = false
AND comment = ''
AND compaction = {'class': 'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold': '32', 'min_threshold': '4'}
AND compression = {'chunk_length_in_kb': '16', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
AND dclocal_read_repair = 'BLOCKING'
AND default_time_to_live = 0
AND extensions = {}
AND gc_grace_seconds = 864000
AND max_index_interval = 2048
AND memtable_flush_period_in_ms = 0
AND min_index_interval = 128
AND read_repair = 'BLOCKING'
AND speculative_retry = '99p';
cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... TO 'd:/elearninglists.csv' WITH HEADER = TRUE;
Using 16 child processes
Can't open 'd:/elearninglists.csv' for writing: [Errno 2] No such file or directory: 'd:/elearninglists.csv'
cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... TO '/home/bmsccse/Desktop/elearninglists.csv' WITH HEADER = TRUE;
Using 16 child processes
Starting copy of students.elearninglists with columns [id, course_order, course_id, courseowner, title].
Processed: 0 rows; Rate: 0 rows/s; Avg. rate: 0 rows/s
0 rows exported to 1 files in 0.133 seconds.
cqlsh:students> BEGIN BATCH
... INSERT INTO elearninglists (id, course_order, course_id, courseowner, title)
... VALUES (uuid(), 1, uuid(), 'John Doe', 'Introduction to Python');
... INSERT INTO elearninglists (id, course_order, course_id, courseowner, title)
... VALUES (uuid(), 2, uuid(), 'Jane Smith', 'Machine Learning Basics');
... INSERT INTO elearninglists (id, course_order, course_id, courseowner, title)
... VALUES (uuid(), 3, uuid(), 'Alice Johnson', 'Data Structures and Algorithms');
... APPLY BATCH;
cqlsh:students> select*from elearninglists;
+-----+-----+-----+-----+-----+
| id | course_id | course_order | courseowner | title |
+-----+-----+-----+-----+-----+
| f6cb9530-c3c6-4619-b26a-7f1f14d75290 | 10cde27-2d81-4481-ae73-d156a2b01a0f | 3 | Alice Johnson | Data Structures and Algorithms |
| f9892ac5-ae02-4156-a496-2f62e0f77962 | 5b5bb8f5-55bb-4726-9460-786a98838883 | 2 | Jane Smith | Machine Learning Basics |
| 59ca570d-0253-440b-b137-003f51ff31f1 | 5d5c2b42-97ef-483d-97ba-33e201ef7b36 | 1 | John Doe | Introduction to Python |
+-----+-----+-----+-----+-----+
(3 rows)
cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... TO '/home/bmsccse/Desktop/elearninglists.csv' WITH HEADER = TRUE;
```

```
Activities Terminal Apr 1 14:50 bmsccse@bmsccse-HP-Elite-Tower-800-G9-Desktop-PC: ~

cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... TO 'd:/elearninglists.csv' WITH HEADER = TRUE;
Using 16 child processes
Can't open 'd:/elearninglists.csv' for writing: [Errno 2] No such file or directory: 'd:/elearninglists.csv'
cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... TO '/home/bmsccse/Desktop/elearninglists.csv' WITH HEADER = TRUE;
Using 16 child processes
Starting copy of students.elearninglists with columns [id, course_order, course_id, courseowner, title].
Processed: 0 rows; Rate: 0 rows/s; Avg. rate: 0 rows/s
0 rows exported to 1 files in 0.133 seconds.
cqlsh:students> BEGIN BATCH
... INSERT INTO elearninglists (id, course_order, course_id, courseowner, title)
... VALUES (uuid(), 1, uuid(), 'John Doe', 'Introduction to Python');
... INSERT INTO elearninglists (id, course_order, course_id, courseowner, title)
... VALUES (uuid(), 2, uuid(), 'Jane Smith', 'Machine Learning Basics');
... INSERT INTO elearninglists (id, course_order, course_id, courseowner, title)
... VALUES (uuid(), 3, uuid(), 'Alice Johnson', 'Data Structures and Algorithms');
... APPLY BATCH;
cqlsh:students> select*from elearninglists;
+-----+-----+-----+-----+-----+
| id | course_id | course_order | courseowner | title |
+-----+-----+-----+-----+-----+
| f6cb9530-c3c6-4619-b26a-7f1f14d75290 | 10cde27-2d81-4481-ae73-d156a2b01a0f | 3 | Alice Johnson | Data Structures and Algorithms |
| f9892ac5-ae02-4156-a496-2f62e0f77962 | 5b5bb8f5-55bb-4726-9460-786a98838883 | 2 | Jane Smith | Machine Learning Basics |
| 59ca570d-0253-440b-b137-003f51ff31f1 | 5d5c2b42-97ef-483d-97ba-33e201ef7b36 | 1 | John Doe | Introduction to Python |
+-----+-----+-----+-----+-----+
(3 rows)
cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... TO '/home/bmsccse/Desktop/elearninglists.csv' WITH HEADER = TRUE;
Using 16 child processes
Starting copy of students.elearninglists with columns [id, course_order, course_id, courseowner, title].
Processed: 3 rows; Rate: 54 rows/s; Avg. rate: 54 rows/s
3 rows exported to 1 files in 0.070 seconds.
cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... FROM '/home/bmsccse/Desktop/elearninglists.csv' WITH HEADER = TRUE;
Using 16 child processes
Starting copy of students.elearninglists with columns [id, course_order, course_id, courseowner, title].
Processed: 3 rows; Rate: 4 rows/s; Avg. rate: 7 rows/s
3 rows imported from 1 files in 0.462 seconds (0 skipped).
cqlsh:students> cat persons.csv | cqlsh -e "COPY persons(id, fname, lname) FROM STDIN WITH HEADER = TRUE;"
Invalid syntax at char 17
cat persons.csv | cqlsh -e "COPY persons(id, fname, lname) FROM STDIN WITH HEADER = TRUE;"
cqlsh:students> COPY elearninglists(id, course_order, course_id, courseowner, title)
... TO STDOUT WITH HEADER = TRUE;
... TO STDOUT WITH HEADER = TRUE;
id, course_order, course_id, courseowner, title
f9892ac5-ae02-4156-a496-2f62e0f77962,2,5b5bb8f5-55bb-4726-9460-786a98838883,Jane Smith,Machine Learning Basics
59ca570d-0253-440b-b137-003f51ff31f1,1,5d5c2b42-97ef-483d-97ba-33e201ef7b36,John Doe,Introduction to Python
f6cb9530-c3c6-4619-b26a-7f1f14d75290,3,10cde27-2d81-4481-ae73-d156a2b01a0f,Alice Johnson,Data Structures and Algorithms
cqlsh:students>
```