```
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ ^[[200~docker run --name cassandra -d -p 9042:9042 cassandra:latest
docker: command not found
bmscecse@bmscecse-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 <snapname>' for additional versions.
bmscecse@bmscecse-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.
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo apt update
sudo apt install cassandra -y
[sudo] password for bmscecse:
bSorry, try again.
[sudo] password for bmscecse:
Sorry, try again.
[sudo] password for bmscecse:

sudo: 3 incorrect password attempts
[sudo] password for bmscecse:
bSorry, try again.
[sudo] password for bmscecse:
Sorry, try again.
[sudo] password for bmscecse:
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-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, 60.4 kB of additional disk space will be used.
Get:1 https://apache.jfrog.io/artifactory/cassandra-deb 41x/main amd64 cassandra all 4.1.8 [48.7 MB]
Fetched 48.7 MB in 2s (1,949 kB/s)
(Reading database ... 250222 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.propert
ies ...
Installing new version of config file /etc/cassandra/credentials.sample ...
Installing new version of config file /etc/cassandra/jvm-server.options ...
vm.max_map_count = 1048575
```

```
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
bmscecse@bmscecse-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' (Permission 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.
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo mkdir -p /var/log/cassandra
sudo chown -R $(whoami):$(whoami) /var/log/cassandra
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo chmod -R 777 /var/log/cassandra
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo systemctl restart cassandra

bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ ^[[200~sudo nano /etc/cassandra/cassandra-env.sh
sudo: command not found
bmscecse@bmscecse-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>
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo nano /etc/cassandra/cassandra-env.sh
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ sudo systemctl restart cassandra


bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$
bmscecse@bmscecse-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     ?              rack1

Note: Non-system keyspaces don't have the same replication settings, effective ownership information is meaningless
bmscecse@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 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_exam_Percent)
           ... VALUES (1, 'Asha', '2012-03-12', 79.9);
           ...
           ... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_Percent)
           ... VALUES (2, 'Krian', '2012-03-12', 89.9);
           ...
           ... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_Percent)
           ... VALUES (3, 'Tarun', '2012-03-12', 78.9);
           ...
           ... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_Percent)
           ... VALUES (4, 'Samrth', '2012-03-12', 90.9);
           ...
           ... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_Percent)
           ... VALUES (5, 'Simha', '2012-03-12', 67.9);
           ...
           ... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_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_exam_Percent double
           ... );
cqlsh:students> BEGIN BATCH
           ... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_Percent)
           ... VALUES (1, 'Asha', '2012-03-12', 79.9);
           ... INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_Percent)
           ... VALUES (2, 'Krian', '
           ...
[1]+  Stopped                 cqlsh
bmscecse@bmscecse-HP-Elite-Tower-800-G9-Desktop-PC:~$ BEGIN BATCH
INSERT INTO Students_Info (Roll_No, StudName, DateOfJoining, last_exam_Percent)
VALUES (1, 'Asha', '2012-03-12', 79.9);

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

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

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

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

 roll_no | dateofjoining                   | last_exam_percent | studname
---------+---------------------------------+-------------------+----------
       5 | 2012-03-11 18:30:00.000000+0000 |              67.9 |    Simha
       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 |   Samrth
       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_exam_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 ';' (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_exam_percent | studname
---------+---------------------------------+-------------------+----------
       1 | 2012-03-11 18:30:00.000000+0000 |              79.9 |     Asha

(1 rows)
```

```
(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_exam_percent | studname
-----+----------------------------------+-------------------+----------
   5 | 2012-03-11 18:30:00.000000+0000  |              67.9 |    Simha
   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 |   Samrth
   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_exam_percent | studname
-----+----------------------------------+-------------------+-------------
   5 | 2012-03-11 18:30:00.000000+0000  |              67.9 |        Simha
   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 |       Samrth
   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
bmscecse@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> use students
    ...
    ...
    ...
    ...
[3]+  Stopped                 cqlsh
```

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

 usn | dateofjoining                    | last_exam_percent | studname
-----+----------------------------------+-------------------+-------------
   5 | 2012-03-11 18:30:00.000000+0000  |              67.9 |        Simha
   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 |       Samrth
   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_exam_percent, studname)
          ... VALUES (6, '2012-03-11 18:30:00', 78.9, 'Tarun');
cqlsh:students> select*FROM STUDENTS_INFO;

 usn | dateofjoining                    | last_exam_percent | studname
-----+----------------------------------+-------------------+-------------
   5 | 2012-03-11 18:30:00.000000+0000  |              67.9 |        Simha
   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 |       Samrth
   6 | 2012-03-11 13:00:00.000000+0000  |              78.9 |        Tarun

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

 usn | dateofjoining                    | last_exam_percent | studname
-----+----------------------------------+-------------------+-------------
   5 | 2012-03-11 18:30:00.000000+0000  |              67.9 |        Simha
   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 |       Samrth
   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_exam_percent | studname
-----+----------------------------------+-------------------+----------
   5 | 2012-03-11 18:30:00.000000+0000  |              67.9 |    Simha
```

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

 usn | dateofjoining                   | last_exam_percent | studname
-----+---------------------------------+-------------------+-------------
   5 | 2012-03-11 18:30:00.000000+0000 |              67.9 |        Simha
   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 |       Samrth
   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_exam_percent | studname
-----+---------------------------------+-------------------+----------
   5 | 2012-03-11 18:30:00.000000+0000 |              67.9 |     Simha
   1 | 2012-03-11 18:30:00.000000+0000 |              79.9 |      Asha
   4 | 2012-03-11 18:30:00.000000+0000 |              90.9 |     Samrth
   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_exam_percent | studname
-----+---------------------------------+---------+-------------------+----------
   5 | 2012-03-11 18:30:00.000000+0000 |    null |              67.9 |     Simha
   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 |     Samrth
   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 |     Simha
   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 |     Samrth
   6 | 2012-03-11 13:00:00.000000+0000 |    null |     null |              78.9 |     Tarun
```

```
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 |     Simha
   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 |     Samrth
   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 |     Simha
   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 |     Samrth
   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 |     Simha
   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 |     Samrth
   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 |     Simha
   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 |     Samrth
   6 | 2012-03-11 13:00:00.000000+0000 |                  null |               null |              78.9 |     Tarun

(4 rows)
cqlsh:students>
```

```
(4 rows)
cqlsh:students> CREATE TABLE library_book (
            ...         counter_value counter,
            ...         book_name varchar,
            ...         stud_name varchar,
            ...         PRIMARY KEY (book_name, stud_name)
            ... );
            ... 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', 'Amit');
            ...
            ... 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> 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', 'Amit');
            ...
            ... 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
```

```
            ... 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 (
            ...         userid int PRIMARY KEY,
            ...         password text
            ... );


cqlsh:students>
cqlsh:students>
cqlsh:students>
cqlsh:students> SELECT*FROM userlogin;

 userid | password
--------+----------

(0 rows)
cqlsh:students> INSERT INTO userlogin(userid, password)
            ... VALUES (1, 'infy')
            ... USING TTL 30;
cqlsh:students> SELECT*FROM userlogin;

 userid | password
--------+----------
      1 |     infy

(1 rows)
cqlsh:students> SELECT TTL(password)
            ... FROM userlogin
            ... WHERE userid = 1;

 ttl(password)
---------------

(0 rows)
cqlsh:students>
```

```
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 memtable = 'default'
    AND crc_check_chance = 1.0
    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/bmscecse/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 | 10cded27-2d81-4481-ae73-d156a2b01a0f |            3 | Alice Johnson | Data Structures and Algorithms
 f9892ac5-a6e2-4156-a496-2f62e0f77962 | 5b58b8f5-55bb-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/bmscecse/Desktop/elearninglists.csv' WITH HEADER = TRUE;
```

```
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/bmscecse/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 | 10cded27-2d81-4481-ae73-d156a2b01a0f |            3 | Alice Johnson | Data Structures and Algorithms
 f9892ac5-a6e2-4156-a496-2f62e0f77962 | 5b58b8f5-55bb-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/bmscecse/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/bmscecse/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 0.452 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;
id,course_order,course_id,courseowner,title
f9892ac5-a6e2-4156-a496-2f62e0f77962,2,5b58b8f5-55bb-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-7f1f14d75290,3,10cded27-2d81-4481-ae73-d156a2b01a0f,Alice Johnson,Data Structures and Algorithms
cqlsh:students>
```