Creating Keyspace :

```
C:\Windows\System32\cmd.exe - cqlsh
Microsoft Windows [Version 10.0.19042.1469]
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C:\Cassandra\apache-cassandra-3.11.12\bin>cqlsh

WARNING: console codepage must be set to cp65001 to support utf-8 encoding on Windows platforms.
If you experience encoding problems, change your console codepage with 'chcp 65001' before starting cqlsh.

Connected to Test Cluster at 127.0.0.1:9042.
[cqlsh 5.0.1 | Cassandra 3.11.12 | CQL spec 3.4.4 | Native protocol v4]
Use HELP for help.
WARNING: pyreadline dependency missing.  Install to enable tab completion.
cqlsh> create keyspace ice7 with replication={'class':'SimpleStrategy','replication_factor':3};
cqlsh> desc keyspaces;

system_schema  system_auth  system  ice7  system_distributed  system_traces

cqlsh> use ice7;
cqlsh:ice7>
```

- Firstly we create the keyspace '**ice7**' by defining the class as SimpleStrategy and replication factor as 3 using create keyspace command.
- Then we display all the keyspaces using **desc** command.
- Then we connect to the keyspace ice7 which we have created earlier, using **use** command.

Creating employee table and Importing data :

```
cqlsh:ice7> create table employee (employee_id int, department text, lastname text, years_with_company int, hiredate date, jobtitle text, salary int, managerid int, pri
mary key(employee_id));
cqlsh:ice7> copy employee (employee_id,department,lastname,years_with_company,hiredate,jobtitle,salary,managerid) from 'C:\Users\eshwa\Downloads\employees.csv' with del
imiter='|' and HEADER=true;
Using 3 child processes

Starting copy of ice7.employee with columns [employee_id, department, lastname, years_with_company, hiredate, jobtitle, salary, managerid].
Failed to import 1 rows: ParseError - Invalid row length 5 should be 8,  given up without retries
Failed to import 8 rows: WriteTimeout - Error from server: code=1100 [Coordinator node timed out waiting for replica nodes' responses] message="Operation timed out - re
ceived only 0 responses." info={'received_responses': 0, 'required_responses': 1, 'consistency': 'ONE'},  will retry later, attempt 1 of 5
Failed to process 1 rows; failed rows written to import_ice7_employee.err
PPProcess ImportProcess-6:
rocess ImportProcess-5:
rocess ImportProcess-7:
TTraceback (most recent call last):
raceback (most recent call last):
raceback (most recent call last):
    File "C:\Python27\lib\multiprocessing\process.py", line 267, in _bootstrap
 File "C:\Python27\lib\multiprocessing\process.py", line 267, in _bootstrap
 File "C:\Python27\lib\multiprocessing\process.py", line 267, in _bootstrap
    self.run()
     self.run()
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\pylib\cqlshlib\copyutil.py", line 2339, in run
     self.run()
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\pylib\cqlshlib\copyutil.py", line 2339, in run
  File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\pylib\cqlshlib\copyutil.py", line 2339, in run
    self.close()
     self.close()
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\pylib\cqlshlib\copyutil.py", line 2343, in close
   self.close()
     self._session.cluster.shutdown()
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\pylib\cqlshlib\copyutil.py", line 2343, in close
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\pylib\cqlshlib\copyutil.py", line 2343, in close
    File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\cluster.py", li
ne 1259, in shutdown
   self._session.cluster.shutdown()
   self._session.cluster.shutdown()
    File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\cluster.py", li
ne 1259, in shutdown
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\cluster.py", line
1259, in shutdown
   self.control_connection.shutdown()
  File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\cluster.py", line
 2850, in shutdown
```

```
  File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\cluster.py", lin
e 2850, in shutdown
    AsyncoreConnection.create_timer(0, partial(asyncore.dispatcher.close, self))
    self.control_connection.shutdown()
    self._connection.close()
  File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\io\asyncorereacto
r.py", line 335, in create_timer
  File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\cluster.py", line
 2850, in shutdown
  File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\io\asyncorereacto
r.py", line 373, in close
   cls._loop.add_timer(timer)
 A   self._connection.close()
    AsyncoreConnection.create_timer(0, partial(asyncore.dispatcher.close, self))
ttributeError: 'NoneType' object has no attribute 'add_timer'
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\io\asyncorereactor
.py", line 373, in close
  File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\io\asyncorereacto
r.py", line 335, in create_timer
    cls._loop.add_timer(timer)
  AsyncoreConnection.create_timer(0, partial(asyncore.dispatcher.close, self))
A ttributeError: 'NoneType' object has no attribute 'add_timer'
 File "C:\Cassandra\apache-cassandra-3.11.12\bin\..\lib\cassandra-driver-internal-only-3.11.0-bb96859b.zip\cassandra-driver-3.11.0-bb96859b\cassandra\io\asyncorereactor
.py", line 335, in create_timer
   cls._loop.add_timer(timer)
AttributeError: 'NoneType' object has no attribute 'add_timer'
Processed: 9 rows; Rate:       0 rows/s; Avg. rate:       1 rows/s
8 rows imported from 1 files in 10.606 seconds (0 skipped).
```

- Here we create the employee table using create table command with all required columns like employee_id, department, hiredate, jobtitle, lastname, managerid, salary and years_with_company.
- Then we copy data into table using copy command and we specify the path of the data file and thenafter all the rows got imported into table successfully.

```
cqlsh:ice7> select * from employee;

 employee_id | department  | hiredate   | jobtitle         | lastname | managerid | salary | years_with_company
-------------+-------------+------------+------------------+----------+-----------+--------+--------------------
           5 | Engineering | 2011-09-23 |     testengineer | Gonzales |         7 |  20000 |                  2
           1 | Engineering | 2000-02-18 |          manager |  stevens |         2 |  50000 |                  1
           8 |       Sales | 2008-01-07 |         teamlead |  Charles |         1 |  19220 |                  8
           2 | Engineering | 1999-06-11 |          manager |    jones |         0 |  70000 |                  2
           4 |       Sales | 2003-09-21 | softwareengineer |   Howard |         6 |  45000 |                  1
           7 |       Sales | 2010-01-07 |         teamlead |    Devin |         3 |  12200 |                  2
           6 | Engineering | 2009-08-09 |         engineer |  Griffin |         8 |  80000 |                  2
           3 |   Marketing | 1996-03-21 |         teamlead |    smith |         5 |  80000 |                  3

(8 rows)
cqlsh:ice7>
```

- Then we display the data in the table using select * command.

Queries

1.List the empID, ename, jobtitle and hiredate of employee from the employee table.

```
cqlsh:ice7> select employee_id, lastname, jobtitle, hiredate from employee;

 employee_id | lastname | jobtitle         | hiredate
-------------+----------+------------------+------------
           5 | Gonzales |     testengineer | 2011-09-23
           1 |  stevens |          manager | 2000-02-18
           8 |  Charles |         teamlead | 2008-01-07
           2 |    jones |          manager | 1999-06-11
           4 |   Howard | softwareengineer | 2003-09-21
           7 |    Devin |         teamlead | 2010-01-07
           6 |  Griffin |         engineer | 2009-08-09
           3 |    smith |         teamlead | 1996-03-21

(8 rows)
cqlsh:ice7>
```

- Then we use the select command to select and display the employee id, employee name, job title and hiredate from employee table.
- Then we get the required output of columns.

2. List the name, salary of the employees who are clerks.

```
cqlsh:ice7> select lastname, salary from employee where jobtitle='clerk' allow filtering;

 lastname | salary
----------+--------

(0 rows)
cqlsh:ice7>
```

- Here we use select command to select and display name and salary data from the employee table and we use **where** to specify the condition ‘job as clerks’.
- Then the output is obtained but there will be no rows as there are no clerks.

3. List the name, job, salary of every employee joined on ‘february 18,2000’.

```
cqlsh:ice7> select lastname, jobtitle, salary from employee where hiredate='2000-02-18' allow filtering;

 lastname | jobtitle | salary
----------+----------+--------
  stevens |  manager |  50000

(1 rows)
cqlsh:ice7>
```

- Here we use select command to select and display name, job and salary data of employees and we use **where** to specify condition that ‘join date on February 18,2000’.

- Then we get 1 row as output with required information.

4. List name and annual salary of all employees.

```
cqlsh:ice7> select lastname, salary from employee;

 lastname | salary
----------+--------
 Gonzales |  20000
  stevens |  50000
  Charles |  19220
    jones |  70000
   Howard |  45000
    Devin |  12200
  Griffin |  80000
    smith |  80000

(8 rows)
cqlsh:ice7>
```

- Here we use select command to select and display the lastname and salary of employees from the table.
- Then we get the required output with both the columns.

(OR)

- Here In the given data it is not mentioned that the salary column is either monthly or yearly. So assuming it as monthly salary I have performed the following query.

```
cqlsh:ice7> CREATE FUNCTION IF NOT EXISTS calculateAnnual (input int) CALLED ON NULL INPUT RETURNS int LANGUAGE java AS 'return Integer.valueOf(input.intValue() * 12);'
;
cqlsh:ice7> select lastname, calculateAnnual(salary) as AnnualSalary from employee;

 lastname | annualsalary
----------+--------------
 Gonzales |       240000
  stevens |       600000
  Charles |       230640
    jones |       840000
   Howard |       540000
    Devin |       146400
  Griffin |       960000
    smith |       960000

(8 rows)
cqlsh:ice7>
```

- Here I have created a function named calculate annual and defined it as 12 times of monthly salary.
- Here we use select command to select and display the lastname and salary of employees from the table.
- Then we get the required output with both the columns.

5. Display employees' names, salary and manager values of those employees whose salary is 45000 from EMP table using SELECT statement.

```
cqlsh:ice7> select lastname, salary, managerid from employee where salary = 45000 allow filtering;

 lastname | salary | managerid
----------+--------+-----------
   Howard |  45000 |         6

(1 rows)
cqlsh:ice7>
```

- Here we use select command to select and display the lastname, salary and manager id values and we use **where** to specify condition as salary =45000.
- Then we get 1 row as output with required information.