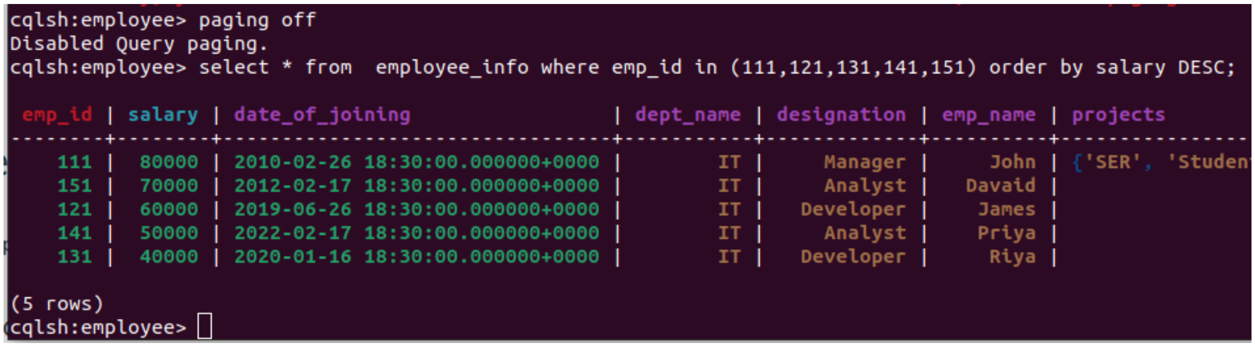
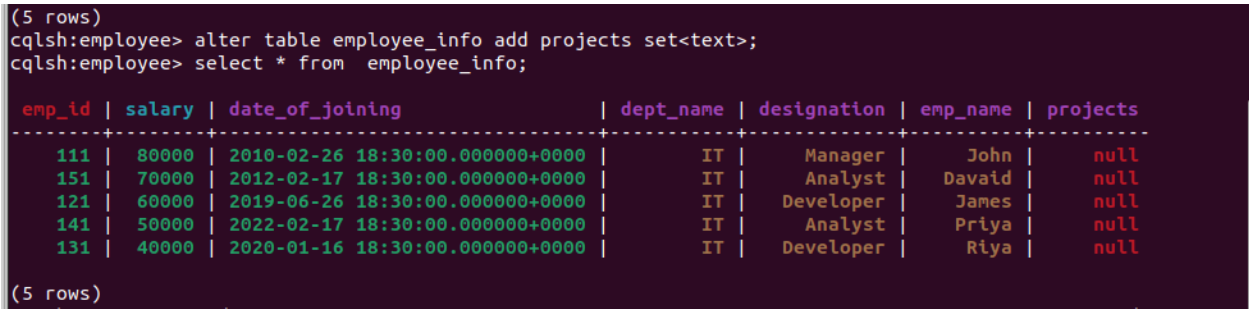
5. Sort the details of Employee records based on salary



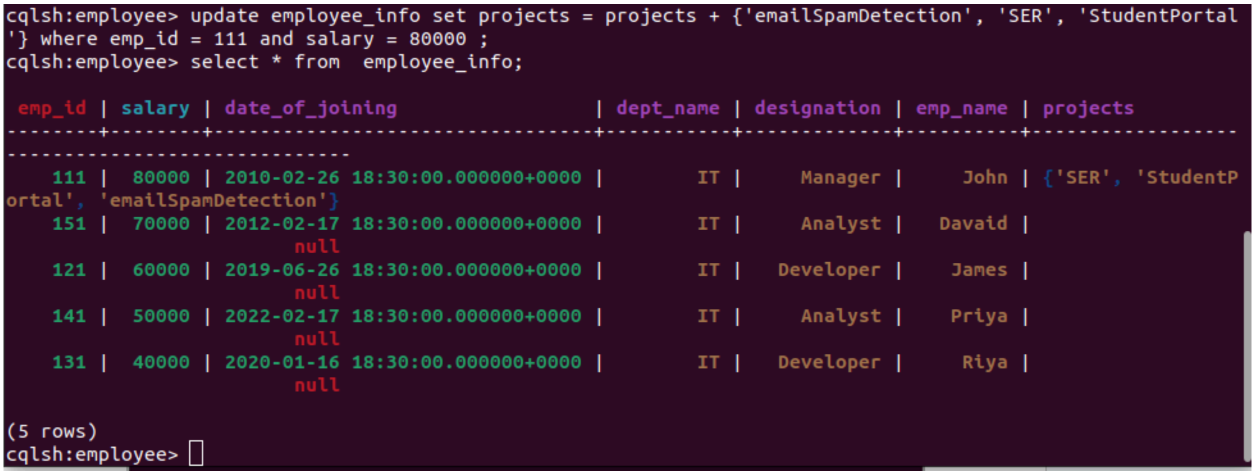
```
cqlsh:employee> paging off
Disabled Query paging.
cqlsh:employee> select * from  employee_info where emp_id in (111,121,131,141,151) order by salary DESC;

 emp_id | salary | date_of_joining                 | dept_name | designation | emp_name | projects
--------+--------+---------------------------------+-----------+-------------+----------+----------------
    111 |  80000 | 2010-02-26 18:30:00.000000+0000 |        IT |     Manager |     John | {'SER', 'Studen
    151 |  70000 | 2012-02-17 18:30:00.000000+0000 |        IT |     Analyst |   Davaid |
    121 |  60000 | 2019-06-26 18:30:00.000000+0000 |        IT |   Developer |    James |
    141 |  50000 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya |
    131 |  40000 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya |

(5 rows)
cqlsh:employee> 
```

6. Alter the schema of the table Employee Info to add a column Projects which stores a set of Projects done by the corresponding Employee.



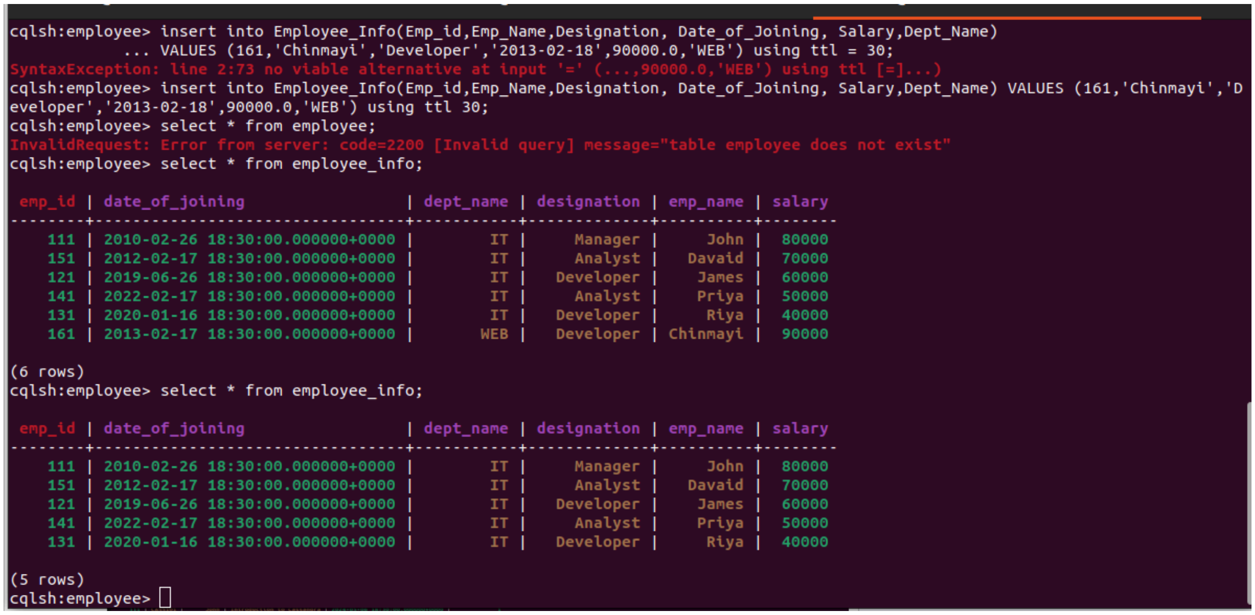
```
(5 rows)
cqlsh:employee> alter table employee_info add projects set<text>;
cqlsh:employee> select * from  employee_info;

 emp_id | salary | date_of_joining                 | dept_name | designation | emp_name | projects
--------+--------+---------------------------------+-----------+-------------+----------+----------
    111 |  80000 | 2010-02-26 18:30:00.000000+0000 |        IT |     Manager |     John |     null
    151 |  70000 | 2012-02-17 18:30:00.000000+0000 |        IT |     Analyst |   Davaid |     null
    121 |  60000 | 2019-06-26 18:30:00.000000+0000 |        IT |   Developer |    James |     null
    141 |  50000 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya |     null
    131 |  40000 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya |     null

(5 rows)
```

7. Update the altered table to add project names.



```
cqlsh:employee> update employee_info set projects = projects + {'emailSpamDetection', 'SER', 'StudentPortal
'} where emp_id = 111 and salary = 80000 ;
cqlsh:employee> select * from  employee_info;

 emp_id | salary | date_of_joining                 | dept_name | designation | emp_name | projects
--------+--------+---------------------------------+-----------+-------------+----------+-------------------
-----------------------------
    111 |  80000 | 2010-02-26 18:30:00.000000+0000 |        IT |     Manager |     John | {'SER', 'StudentP
ortal', 'emailSpamDetection'}
    151 |  70000 | 2012-02-17 18:30:00.000000+0000 |        IT |     Analyst |   Davaid |
                          null
    121 |  60000 | 2019-06-26 18:30:00.000000+0000 |        IT |   Developer |    James |
                          null
    141 |  50000 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya |
                          null
    131 |  40000 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya |
                          null

(5 rows)
cqlsh:employee> 
```

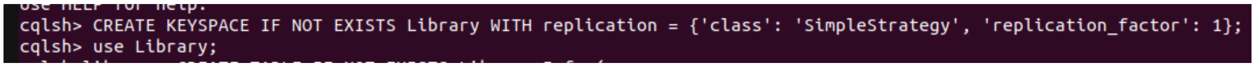
8.Create a TTL of 15 seconds to display the values of Employees



```
cqlsh:employee> insert into Employee_Info(Emp_id,Emp_Name,Designation, Date_of_Joining, Salary,Dept_Name)
            ... VALUES (161,'Chinmayi','Developer','2013-02-18',90000.0,'WEB') using ttl = 30;
SyntaxException: line 2:73 no viable alternative at input '=' (...,90000.0,'WEB') using ttl [=]...)
cqlsh:employee> insert into Employee_Info(Emp_id,Emp_Name,Designation, Date_of_Joining, Salary,Dept_Name) VALUES (161,'Chinmayi','D
eveloper','2013-02-18',90000.0,'WEB') using ttl 30;
cqlsh:employee> select * from employee;
InvalidRequest: Error from server: code=2200 [Invalid query] message="table employee does not exist"
cqlsh:employee> select * from employee_info;

 emp_id | date_of_joining                 | dept_name | designation | emp_name | salary
--------+---------------------------------+-----------+-------------+----------+--------
    111 | 2010-02-26 18:30:00.000000+0000 |        IT |     Manager |     John |  80000
    151 | 2012-02-17 18:30:00.000000+0000 |        IT |     Analyst |   Davaid |  70000
    121 | 2019-06-26 18:30:00.000000+0000 |        IT |   Developer |    James |  60000
    141 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya |  50000
    131 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya |  40000
    161 | 2013-02-17 18:30:00.000000+0000 |       WEB |   Developer | Chinmayi |  90000

(6 rows)
cqlsh:employee> select * from employee_info;

 emp_id | date_of_joining                 | dept_name | designation | emp_name | salary
--------+---------------------------------+-----------+-------------+----------+--------
    111 | 2010-02-26 18:30:00.000000+0000 |        IT |     Manager |     John |  80000
    151 | 2012-02-17 18:30:00.000000+0000 |        IT |     Analyst |   Davaid |  70000
    121 | 2019-06-26 18:30:00.000000+0000 |        IT |   Developer |    James |  60000
    141 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya |  50000
    131 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya |  40000

(5 rows)
cqlsh:employee> 
```

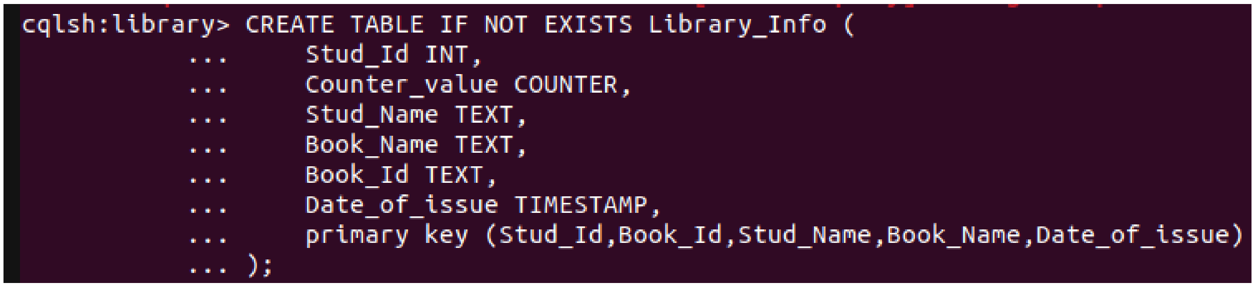
Perform the following DB operations using Cassandra.

1.Create a keyspace by name Library



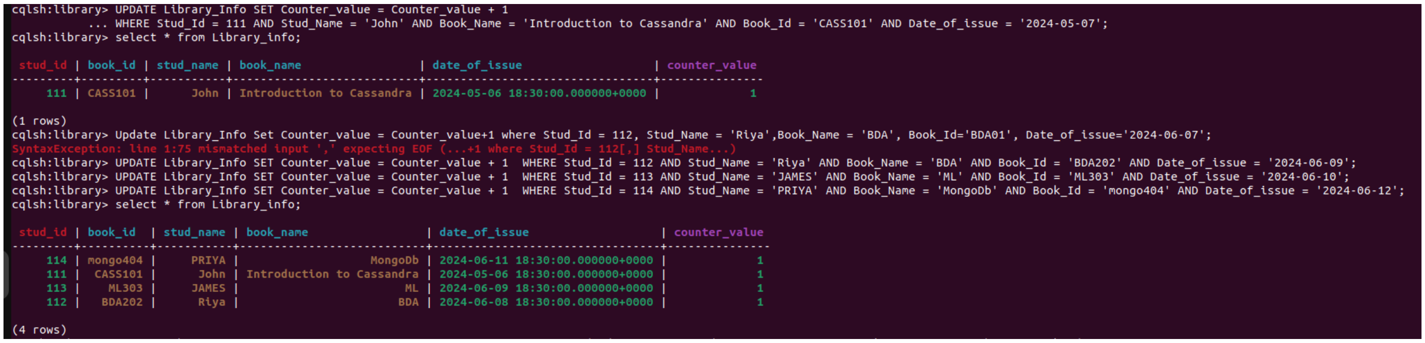
```
use HELP for help.
cqlsh> CREATE KEYSPACE IF NOT EXISTS Library WITH replication = {'class': 'SimpleStrategy', 'replication_factor': 1};
cqlsh> use Library;
```

2. 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



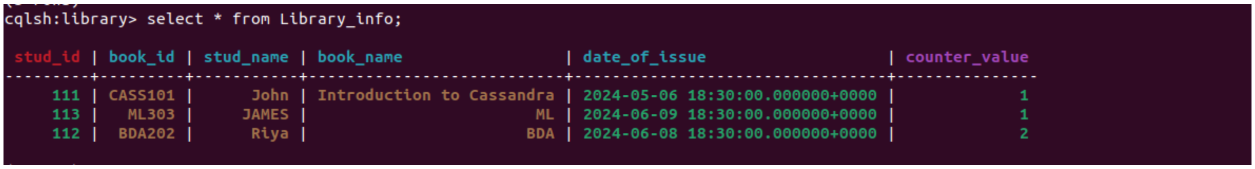
```
cqlsh:library> CREATE TABLE IF NOT EXISTS Library_Info (
           ...     Stud_Id INT,
           ...     Counter_value COUNTER,
           ...     Stud_Name TEXT,
           ...     Book_Name TEXT,
           ...     Book_Id TEXT,
           ...     Date_of_issue TIMESTAMP,
           ...     primary key (Stud_Id,Book_Id,Stud_Name,Book_Name,Date_of_issue)
           ... );
```

3. Insert the values into the table in batch



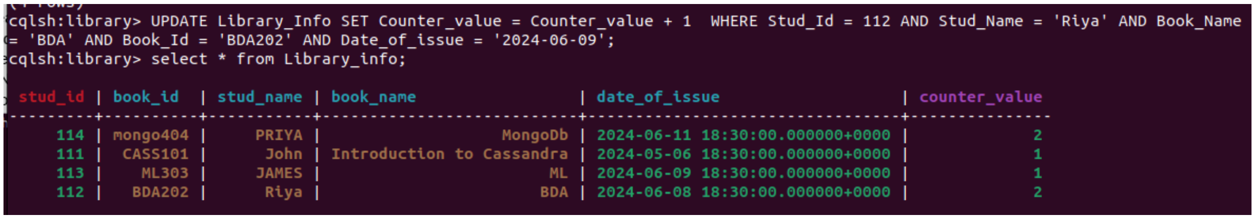
```
cqlsh:library> UPDATE Library_Info SET Counter_value = Counter_value + 1
           ... WHERE Stud_Id = 111 AND Stud_Name = 'John' AND Book_Name = 'Introduction to Cassandra' AND Book_Id = 'CASS101' AND Date_of_issue = '2024-05-07';
cqlsh:library> select * from Library_info;

 stud_id | book_id | stud_name | book_name                 | date_of_issue                   | counter_value
---------+---------+-----------+---------------------------+---------------------------------+---------------
     111 | CASS101 |      John | Introduction to Cassandra | 2024-05-06 18:30:00.000000+0000 |             1

(1 rows)
cqlsh:library> Update Library_Info Set Counter_value = Counter_value+1 where Stud_Id = 112, Stud_Name = 'Riya',Book_Name = 'BDA', Book_Id='BDA01', Date_of_issue='2024-06-07';
SyntaxException: line 1:75 mismatched input ',' expecting EOF (...+1 where Stud_Id = 112[,] Stud_Name...)
cqlsh:library> UPDATE Library_Info SET Counter_value = Counter_value + 1  WHERE Stud_Id = 112 AND Stud_Name = 'Riya' AND Book_Name = 'BDA' AND Book_Id = 'BDA202' AND Date_of_issue = '2024-06-09';
cqlsh:library> UPDATE Library_Info SET Counter_value = Counter_value + 1  WHERE Stud_Id = 113 AND Stud_Name = 'JAMES' AND Book_Name = 'ML' AND Book_Id = 'ML303' AND Date_of_issue = '2024-06-10';
cqlsh:library> UPDATE Library_Info SET Counter_value = Counter_value + 1  WHERE Stud_Id = 114 AND Stud_Name = 'PRIYA' AND Book_Name = 'MongoDb' AND Book_Id = 'mongo404' AND Date_of_issue = '2024-06-12';
cqlsh:library> select * from Library_info;

 stud_id | book_id  | stud_name | book_name                 | date_of_issue                   | counter_value
---------+----------+-----------+---------------------------+---------------------------------+---------------
     114 | mongo404 |     PRIYA |                   MongoDb | 2024-06-11 18:30:00.000000+0000 |             1
     111 |  CASS101 |      John | Introduction to Cassandra | 2024-05-06 18:30:00.000000+0000 |             1
     113 |    ML303 |     JAMES |                        ML | 2024-06-09 18:30:00.000000+0000 |             1
     112 |   BDA202 |      Riya |                       BDA | 2024-06-08 18:30:00.000000+0000 |             1

(4 rows)
```

4. Display the details of the table created and increase the value of the counter



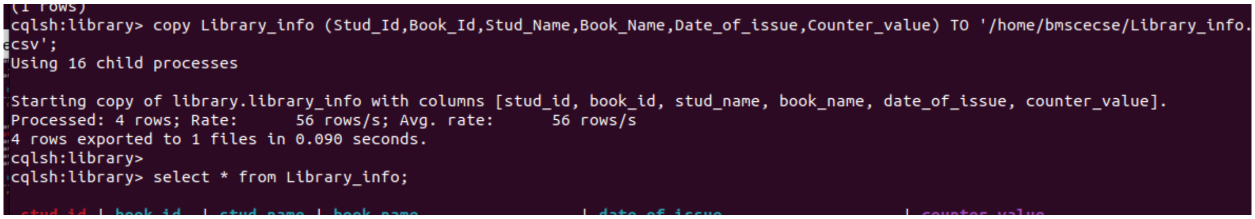
```
cqlsh:library> select * from Library_info;

 stud_id | book_id | stud_name | book_name                  | date_of_issue                   | counter_value
---------+---------+-----------+----------------------------+---------------------------------+---------------
     111 | CASS101 |      John | Introduction to Cassandra | 2024-05-06 18:30:00.000000+0000 |             1
     113 |   ML303 |     JAMES |                         ML | 2024-06-09 18:30:00.000000+0000 |             1
     112 |  BDA202 |      Riya |                        BDA | 2024-06-08 18:30:00.000000+0000 |             2
```

5. Write a query to show that a student with id 112 has taken a book “BDA” 2 time



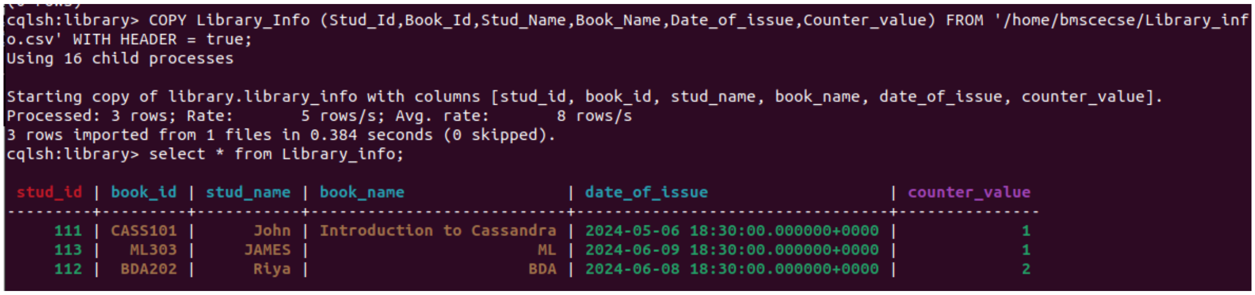
```
cqlsh:library> UPDATE Library_Info SET Counter_value = Counter_value + 1  WHERE Stud_Id = 112 AND Stud_Name = 'Riya' AND Book_Name
= 'BDA' AND Book_Id = 'BDA202' AND Date_of_issue = '2024-06-09';
cqlsh:library> select * from Library_info;

 stud_id | book_id  | stud_name | book_name                  | date_of_issue                   | counter_value
---------+----------+-----------+----------------------------+---------------------------------+---------------
     114 | mongo404 |     PRIYA |                    MongoDb | 2024-06-11 18:30:00.000000+0000 |             2
     111 |  CASS101 |      John | Introduction to Cassandra | 2024-05-06 18:30:00.000000+0000 |             1
     113 |    ML303 |     JAMES |                         ML | 2024-06-09 18:30:00.000000+0000 |             1
     112 |   BDA202 |      Riya |                        BDA | 2024-06-08 18:30:00.000000+0000 |             2
```

6. Export the created column to a csv file

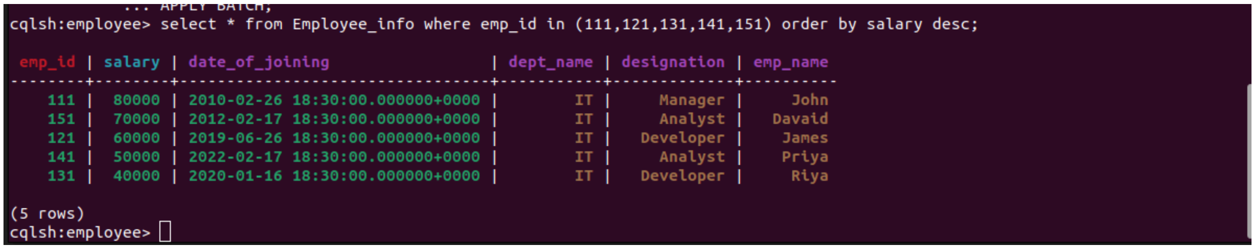


```
(1 rows)
cqlsh:library> copy Library_info (Stud_Id,Book_Id,Stud_Name,Book_Name,Date_of_issue,Counter_value) TO '/home/bmscecse/Library_info.
csv';
Using 16 child processes

Starting copy of library.library_info with columns [stud_id, book_id, stud_name, book_name, date_of_issue, counter_value].
Processed: 4 rows; Rate:      56 rows/s; Avg. rate:      56 rows/s
4 rows exported to 1 files in 0.090 seconds.
cqlsh:library>
cqlsh:library> select * from Library_info;

 stud_id | book_id  | stud_name | book_name                  | date_of_issue                   | counter_value
```

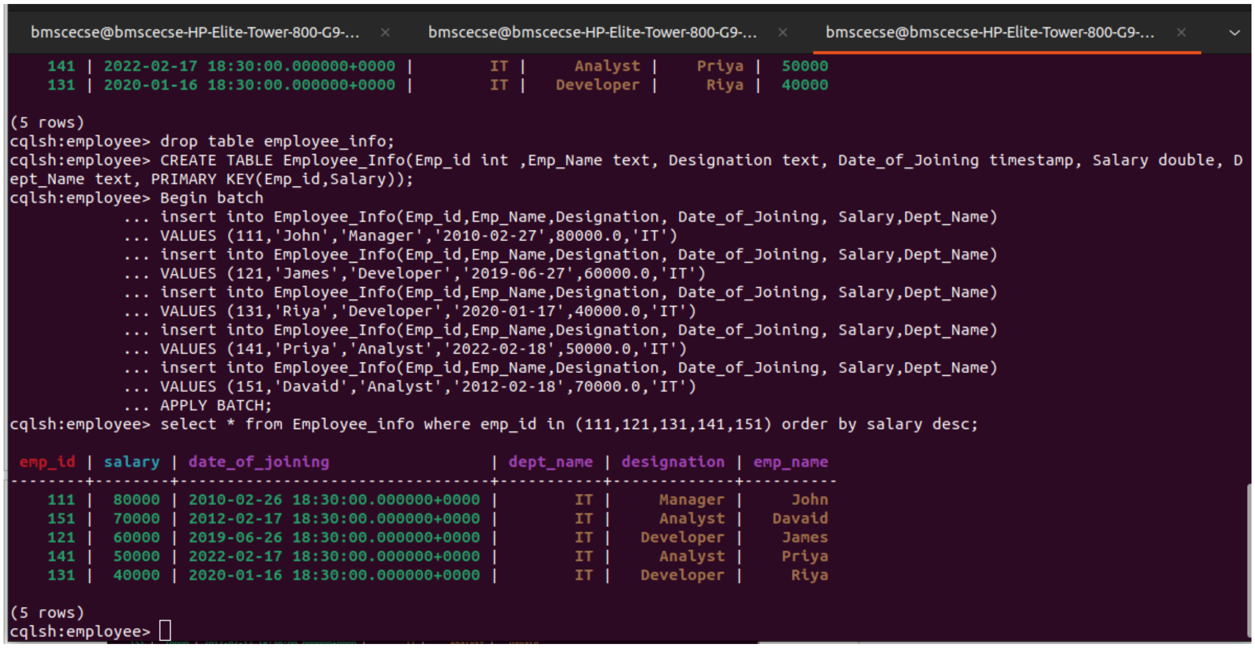
7. Import a given csv dataset from local file system into Cassandra column family



```
cqlsh:library> COPY Library_Info (Stud_Id,Book_Id,Stud_Name,Book_Name,Date_of_issue,Counter_value) FROM '/home/bmscecse/Library_inf
o.csv' WITH HEADER = true;
Using 16 child processes

Starting copy of library.library_info with columns [stud_id, book_id, stud_name, book_name, date_of_issue, counter_value].
Processed: 3 rows; Rate:       5 rows/s; Avg. rate:       8 rows/s
3 rows imported from 1 files in 0.384 seconds (0 skipped).
cqlsh:library> select * from Library_info;

 stud_id | book_id | stud_name | book_name                  | date_of_issue                   | counter_value
---------+---------+-----------+----------------------------+---------------------------------+---------------
     111 | CASS101 |      John | Introduction to Cassandra | 2024-05-06 18:30:00.000000+0000 |             1
     113 |   ML303 |     JAMES |                         ML | 2024-06-09 18:30:00.000000+0000 |             1
     112 |  BDA202 |      Riya |                        BDA | 2024-06-08 18:30:00.000000+0000 |             2
```



```
             ... APPLY BATCH;
cqlsh:employee> select * from Employee_info where emp_id in (111,121,131,141,151) order by salary desc;

 emp_id | salary | date_of_joining                 | dept_name | designation | emp_name
--------+--------+---------------------------------+-----------+-------------+----------
    111 |  80000 | 2010-02-26 18:30:00.000000+0000 |        IT |     Manager |     John
    151 |  70000 | 2012-02-17 18:30:00.000000+0000 |        IT |     Analyst |   Davaid
    121 |  60000 | 2019-06-26 18:30:00.000000+0000 |        IT |   Developer |    James
    141 |  50000 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya
    131 |  40000 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya

(5 rows)
cqlsh:employee> 
```



bmscecse@bmscecse-HP-Elite-Tower-800-G9-...
bmscecse@bmscecse-HP-Elite-Tower-800-G9-...
bmscecse@bmscecse-HP-Elite-Tower-800-G9-...

```
    141 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya |  50000
    131 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya |  40000

(5 rows)
cqlsh:employee> drop table employee_info;
cqlsh:employee> CREATE TABLE Employee_Info(Emp_id int ,Emp_Name text, Designation text, Date_of_Joining timestamp, Salary double, D
ept_Name text, PRIMARY KEY(Emp_id,Salary));
cqlsh:employee> Begin batch
            ... insert into Employee_Info(Emp_id,Emp_Name,Designation, Date_of_Joining, Salary,Dept_Name)
            ... VALUES (111,'John','Manager','2010-02-27',80000.0,'IT')
            ... insert into Employee_Info(Emp_id,Emp_Name,Designation, Date_of_Joining, Salary,Dept_Name)
            ... VALUES (121,'James','Developer','2019-06-27',60000.0,'IT')
            ... insert into Employee_Info(Emp_id,Emp_Name,Designation, Date_of_Joining, Salary,Dept_Name)
            ... VALUES (131,'Riya','Developer','2020-01-17',40000.0,'IT')
            ... insert into Employee_Info(Emp_id,Emp_Name,Designation, Date_of_Joining, Salary,Dept_Name)
            ... VALUES (141,'Priya','Analyst','2022-02-18',50000.0,'IT')
            ... insert into Employee_Info(Emp_id,Emp_Name,Designation, Date_of_Joining, Salary,Dept_Name)
            ... VALUES (151,'Davaid','Analyst','2012-02-18',70000.0,'IT')
            ... APPLY BATCH;
cqlsh:employee> select * from Employee_info where emp_id in (111,121,131,141,151) order by salary desc;

 emp_id | salary | date_of_joining                 | dept_name | designation | emp_name
--------+--------+---------------------------------+-----------+-------------+----------
    111 |  80000 | 2010-02-26 18:30:00.000000+0000 |        IT |     Manager |     John
    151 |  70000 | 2012-02-17 18:30:00.000000+0000 |        IT |     Analyst |   Davaid
    121 |  60000 | 2019-06-26 18:30:00.000000+0000 |        IT |   Developer |    James
    141 |  50000 | 2022-02-17 18:30:00.000000+0000 |        IT |     Analyst |    Priya
    131 |  40000 | 2020-01-16 18:30:00.000000+0000 |        IT |   Developer |     Riya

(5 rows)
cqlsh:employee> 
```