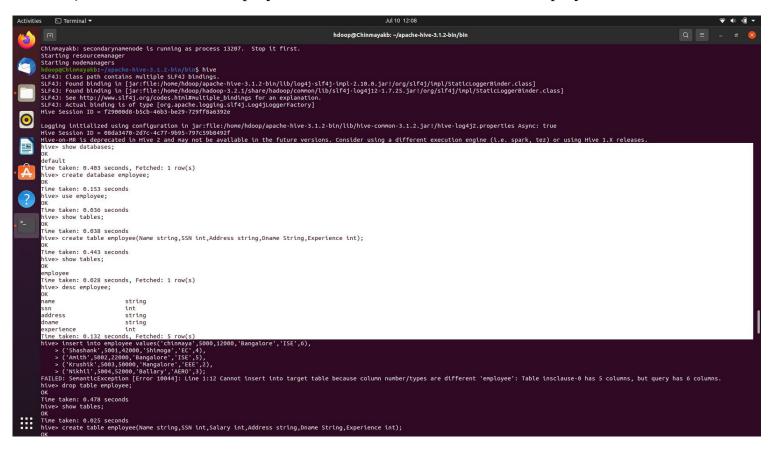
LA2

CHINMAYAKRISHNA B 1NT18IS047 Exercise2:Section 2

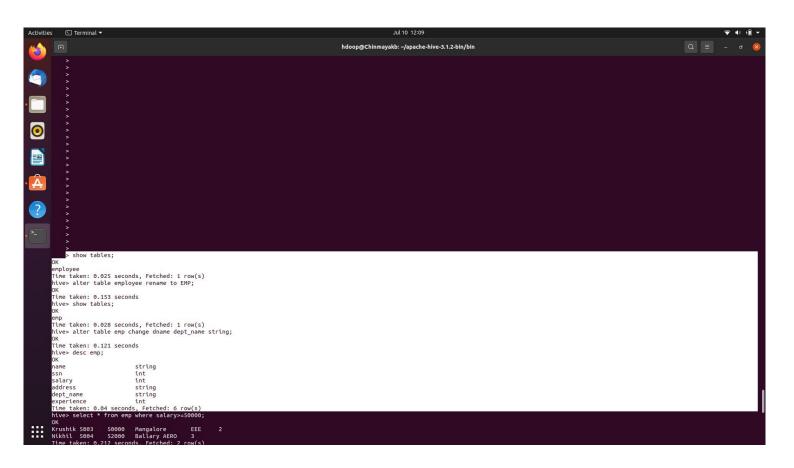
1)Create a database Employeedb and a table in it with named employee



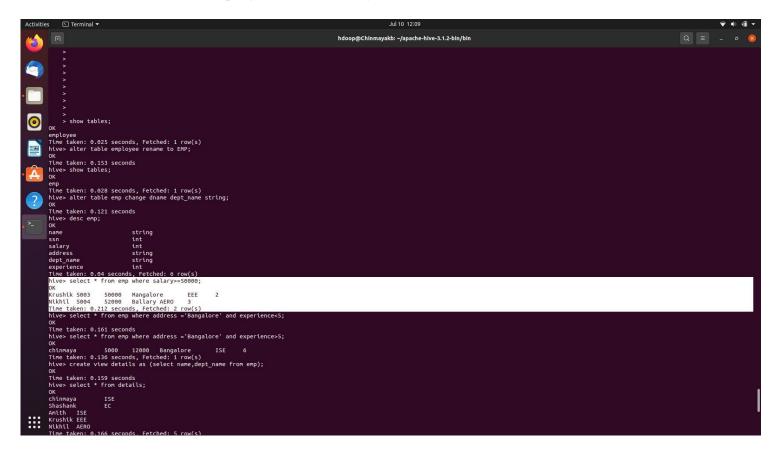
```
Addition | Motor drop table employee;

| The takens 8-yrs seconds | Motor drop table employee; | Motor table employee; | Motor table; | Motor tabl
```

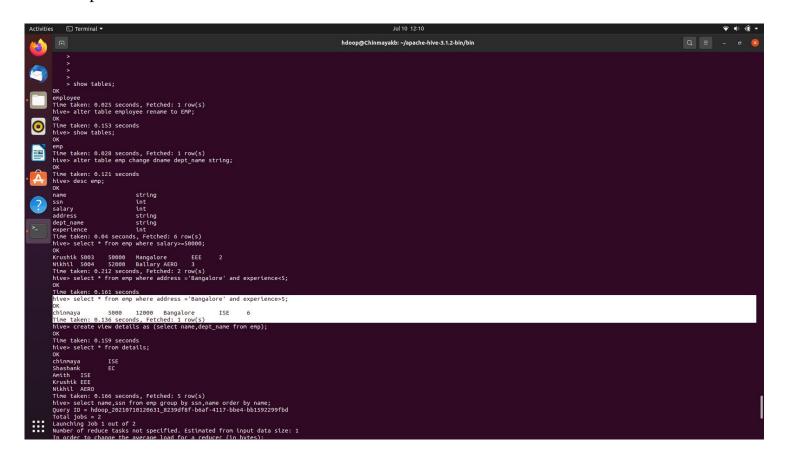
- 3). Demonstrate the Alter command for the following cases.
 - -> Rename the table name to "Emp"
 - -> Rename the column name "Dname" to "Dept_name"



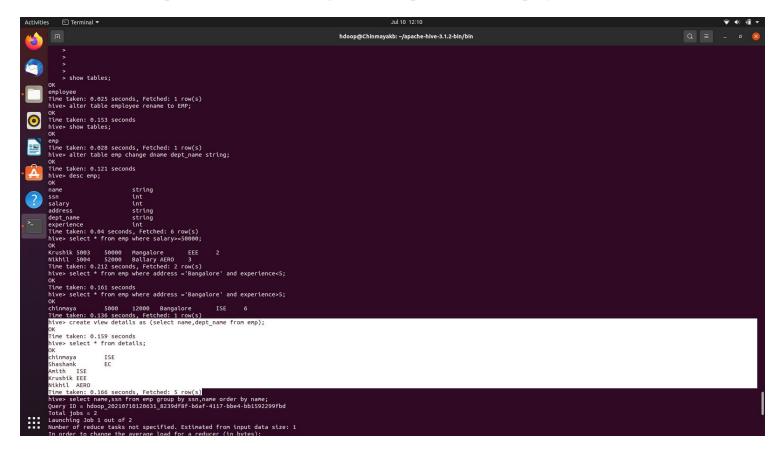
4). Retrieve all the employees whos salary is not less than 50000



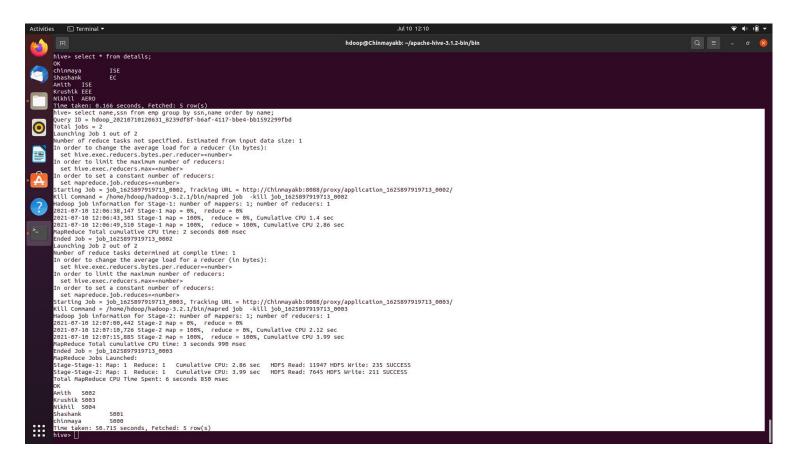
5).Extract all the employees who live in Bangalore but having less than 5 years of Experience



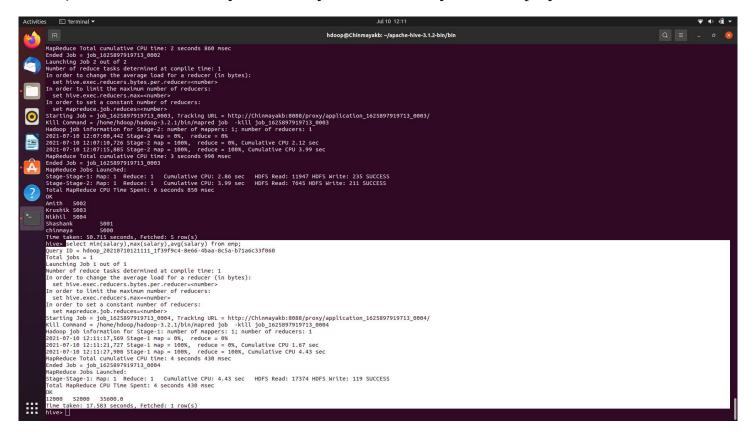
6). Create seperate view containing Name, Dept_name of employees



7). Display Name and SSN and use groupby SSN and Name

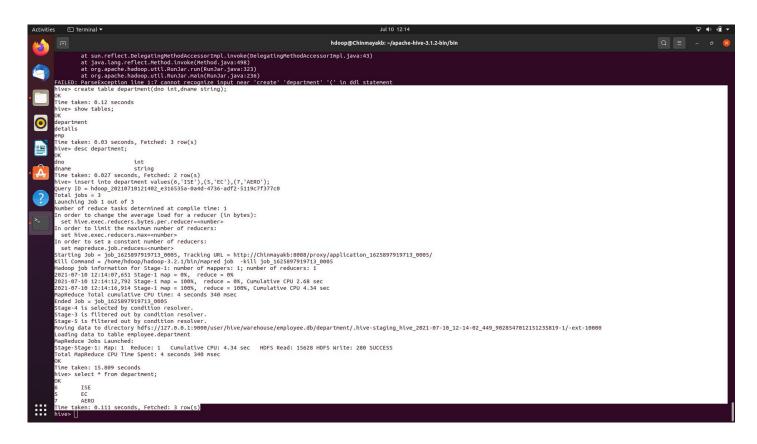


8). Retrieve MAX salary, MIN salary and AVG salary of the employees

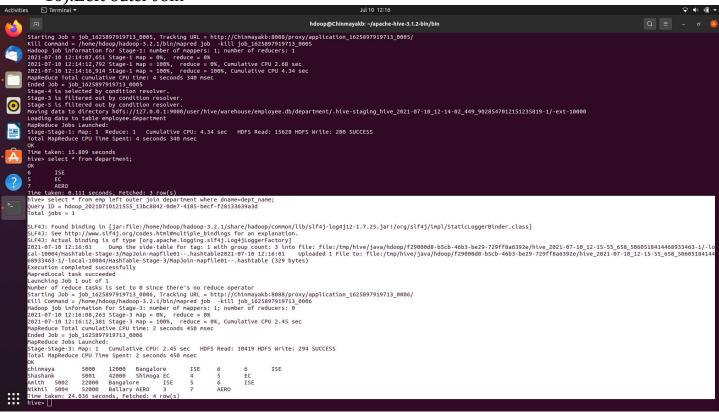


9). Vreate another table called department with the following fields (Dname=deptname and perform the joins.

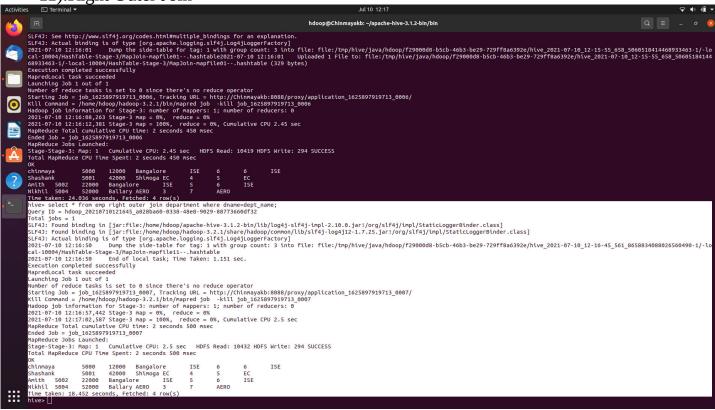
Dno Dname 6 ISE



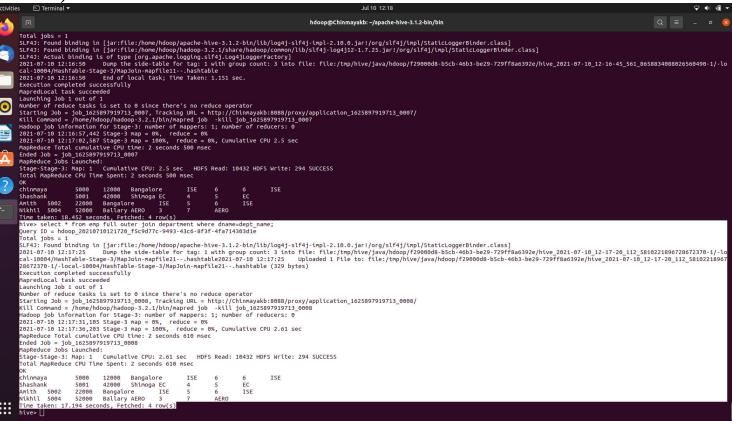
10).Left outer Join



11).Right Outer Join



12).Full Outer Join



CODE:

hive > show databases;

OK

default

Time taken: 0.403 seconds, Fetched: 1 row(s)

hive> create database employee;

OK

Time taken: 0.153 seconds

hive> use employee;

OK

Time taken: 0.036 seconds

hive> show tables;

OK

Time taken: 0.038 seconds

hive> create table employee(Name string,SSN int,Address string,Dname

String, Experience int);

OK

Time taken: 0.443 seconds

hive> show tables;

OK

employee

Time taken: 0.028 seconds, Fetched: 1 row(s)

hive> desc employee;

OK

name string ssn int address string dname string experience int

Time taken: 0.132 seconds, Fetched: 5 row(s)

hive> insert into employee values('chinmaya',5000,12000,'Bangalore','ISE',6),

- > ('Shashank',5001,42000,'Shimoga','EC',4),
- > ('Amith',5002,22000,'Bangalore','ISE',5),
- > ('Krushik',5003,50000,'Mangalore','EEE',2),
- > ('Nikhil',5004,52000,'Ballary','AERO',3);

FAILED: SemanticException [Error 10044]: Line 1:12 Cannot insert into target table because column number/types are different 'employee': Table insclause-0 has 5 columns, but query has 6 columns.

hive > drop table employee;

OK

Time taken: 0.478 seconds

hive> show tables;

OK

Time taken: 0.025 seconds

hive> create table employee(Name string,SSN int,Salary int,Address string,Dname String,Experience int);

OK

Time taken: 0.109 seconds

hive insert into employee values ('chinmaya', 5000, 12000, 'Bangalore', 'ISE', 6),

- > ('Shashank',5001,42000,'Shimoga','EC',4),
- > ('Amith',5002,22000,'Bangalore','ISE',5),
- > ('Krushik',5003,50000,'Mangalore','EEE',2),
- > ('Nikhil',5004,52000,'Ballary','AERO',3);

Query ID = hdoop_20210710120100_c46890b9-092e-45ec-84e1-4315c11e11c4 Total jobs = 3

Launching Job 1 out of 3

Number of reduce tasks determined at compile time: 1

In order to change the average load for a reducer (in bytes):

set hive.exec.reducers.bytes.per.reducer=<number>

In order to limit the maximum number of reducers:

set hive.exec.reducers.max=<number>

In order to set a constant number of reducers:

set mapreduce.job.reduces=<number>

Starting Job = job_1625897919713_0001, Tracking URL = http://Chinmayakb:8088/proxy/application 1625897919713_0001/

Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill

job_1625897919713_0001

Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1 2021-07-10 12:01:09,670 Stage-1 map = 0%, reduce = 0%

2021-07-10 12:01:15,889 Stage-1 map = 100%, reduce = 0%, Cumulative CPU 2.19 sec

2021-07-10 12:01:21,007 Stage-1 map = 100%, reduce = 100%, Cumulative CPU 3.75 sec

MapReduce Total cumulative CPU time: 3 seconds 750 msec

Ended Job = $job_1625897919713_0001$

Stage-4 is selected by condition resolver.

Stage-3 is filtered out by condition resolver.

Stage-5 is filtered out by condition resolver.

Moving data to directory

hdfs://127.0.0.1:9000/user/hive/warehouse/employee.db/employee/.hive-

staging_hive_2021-07-10_12-01-00_533_3418192329285162114-1/-ext-10000

Loading data to table employee.employee

MapReduce Jobs Launched:

Stage-Stage-1: Map: 1 Reduce: 1 Cumulative CPU: 3.75 sec HDFS Read: 20983

HDFS Write: 671 SUCCESS

Total MapReduce CPU Time Spent: 3 seconds 750 msec

OK

Time taken: 23.141 seconds hive> select * from employee;

```
OK
chinmaya
           5000 12000Bangalore
                                   ISE
                                         6
           5001 42000Shimoga
                                   EC
                                         4
Shashank
           5002 22000Bangalore
                                   ISE
                                         5
Amith
           5003 50000Mangalore EEE 2
Krushik
Nikhil
           5004 52000Ballary
                                               3
                                   AERO
Time taken: 0.206 seconds, Fetched: 5 row(s)
> show tables:
OK
employee
Time taken: 0.025 seconds, Fetched: 1 row(s)
hive> alter table employee rename to EMP;
OK
Time taken: 0.153 seconds
hive> show tables;
OK
emp
Time taken: 0.028 seconds, Fetched: 1 row(s)
hive> alter table emp change dname dept_name string;
OK
Time taken: 0.121 seconds
hive> desc emp;
OK
name
                 string
ssn
                 int
salary
                 int
address
                 string
dept_name
                 string
experience
                 int
Time taken: 0.04 seconds, Fetched: 6 row(s)
hive > select * from emp where salary >= 50000;
OK
Krushik
           5003 50000Mangalore EEE 2
           5004 52000Ballary
Nikhil
                                   AERO
                                               3
Time taken: 0.212 seconds, Fetched: 2 row(s)
hive> select * from emp where address ='Bangalore' and experience<5;
OK
Time taken: 0.161 seconds
hive> select * from emp where address ='Bangalore' and experience>5;
OK
chinmaya
           5000 12000Bangalore
                                  ISE
Time taken: 0.136 seconds, Fetched: 1 row(s)
hive > create view details as (select name, dept_name from emp);
OK
```

```
Time taken: 0.159 seconds
hive > select * from details;
OK
chinmaya
           ISE
Shashank
           EC
Amith
           ISE
Krushik
           EEE
Nikhil
           AERO
Time taken: 0.166 seconds, Fetched: 5 row(s)
hive> select name,ssn from emp group by ssn,name order by name;
Query ID = hdoop_20210710120631_8239df8f-b6af-4117-bbe4-bb1592299fbd
Total jobs = 2
Launching Job 1 out of 2
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
 set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
 set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
 set mapreduce.job.reduces=<number>
Starting Job = job_1625897919713_0002, Tracking URL = http://Chinmayakb:8088/
proxy/application 1625897919713 0002/
Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill
job 1625897919713 0002
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2021-07-10 12:06:38,147 Stage-1 map = 0%, reduce = 0%
2021-07-10 12:06:43,301 Stage-1 map = 100%, reduce = 0%, Cumulative CPU 1.4
sec
2021-07-10 12:06:49,510 Stage-1 map = 100%, reduce = 100%, Cumulative CPU
2.86 sec
MapReduce Total cumulative CPU time: 2 seconds 860 msec
Ended Job = job 1625897919713 0002
Launching Job 2 out of 2
Number of reduce tasks determined at compile time: 1
In order to change the average load for a reducer (in bytes):
 set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
 set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
 set mapreduce.job.reduces=<number>
Starting Job = job_1625897919713_0003, Tracking URL = http://Chinmayakb:8088/
proxy/application 1625897919713 0003/
Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill
job 1625897919713 0003
Hadoop job information for Stage-2: number of mappers: 1; number of reducers: 1
```

```
2021-07-10 12:07:00,442 Stage-2 map = 0%, reduce = 0%
2021-07-10 12:07:10,726 Stage-2 map = 100%, reduce = 0%, Cumulative CPU 2.12
sec
2021-07-10 12:07:15,885 Stage-2 map = 100%, reduce = 100%, Cumulative CPU
3.99 sec
MapReduce Total cumulative CPU time: 3 seconds 990 msec
Ended Job = job 1625897919713 0003
MapReduce Jobs Launched:
Stage-Stage-1: Map: 1 Reduce: 1 Cumulative CPU: 2.86 sec HDFS Read: 11947
HDFS Write: 235 SUCCESS
Stage-Stage-2: Map: 1 Reduce: 1 Cumulative CPU: 3.99 sec HDFS Read: 7645
HDFS Write: 211 SUCCESS
Total MapReduce CPU Time Spent: 6 seconds 850 msec
OK
Amith
           5002
           5003
Krushik
Nikhil
           5004
Shashank
           5001
chinmaya
           5000
Time taken: 50.715 seconds, Fetched: 5 row(s)
hive > select min(salary),max(salary),avg(salary) from emp;
Query ID = hdoop_20210710121111_1f39f9c4-8e66-4baa-8c5a-b71a6c33f060
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks determined at compile time: 1
In order to change the average load for a reducer (in bytes):
 set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
 set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
 set mapreduce.job.reduces=<number>
Starting Job = job 1625897919713 0004, Tracking URL = http://Chinmayakb:8088/
proxy/application 1625897919713 0004/
Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill
job 1625897919713 0004
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2021-07-10 12:11:17,569 Stage-1 map = 0%, reduce = 0%
2021-07-10 12:11:21,727 Stage-1 map = 100%, reduce = 0%, Cumulative CPU 1.67
sec
```

2021-07-10 12:11:27,908 Stage-1 map = 100%, reduce = 100%, Cumulative CPU 4.43 sec

MapReduce Total cumulative CPU time: 4 seconds 430 msec

Ended Job = job_1625897919713_0004

MapReduce Jobs Launched:

```
Stage-Stage-1: Map: 1 Reduce: 1 Cumulative CPU: 4.43 sec HDFS Read: 17374
HDFS Write: 119 SUCCESS
Total MapReduce CPU Time Spent: 4 seconds 430 msec
OK
120005200035600.0
Time taken: 17.583 seconds, Fetched: 1 row(s)
hive> create table department(dno int,dname string);
OK
Time taken: 0.12 seconds
hive> show tables;
OK
department
details
emp
Time taken: 0.03 seconds, Fetched: 3 row(s)
hive > desc department;
OK
dno
                 int
dname
                 string
Time taken: 0.027 seconds, Fetched: 2 row(s)
hive> insert into department values(6,'ISE'),(5,'EC'),(7,'AERO');
Query ID = hdoop 20210710121402 e316535a-0a4d-4736-adf2-5119c7f377c0
Total jobs = 3
Launching Job 1 out of 3
Number of reduce tasks determined at compile time: 1
In order to change the average load for a reducer (in bytes):
 set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
 set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
 set mapreduce.job.reduces=<number>
Starting Job = job 1625897919713 0005, Tracking URL = http://Chinmayakb:8088/
proxy/application 1625897919713 0005/
Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill
job 1625897919713 0005
Hadoop job information for Stage-1: number of mappers: 1; number of reducers: 1
2021-07-10 12:14:07,651 Stage-1 map = 0%, reduce = 0%
2021-07-10 12:14:12,792 Stage-1 map = 100%, reduce = 0%, Cumulative CPU 2.68
2021-07-10 12:14:16,914 Stage-1 map = 100%, reduce = 100%, Cumulative CPU
4.34 sec
MapReduce Total cumulative CPU time: 4 seconds 340 msec
```

Ended Job = job 1625897919713 0005

Stage-4 is selected by condition resolver.

Stage-3 is filtered out by condition resolver.

Stage-5 is filtered out by condition resolver.

Moving data to directory

hdfs://127.0.0.1:9000/user/hive/warehouse/employee.db/department/.hive-

staging_hive_2021-07-10_12-14-02_449_9028547012151235819-1/-ext-10000

Loading data to table employee.department

MapReduce Jobs Launched:

Stage-Stage-1: Map: 1 Reduce: 1 Cumulative CPU: 4.34 sec HDFS Read: 15628

HDFS Write: 280 SUCCESS

Total MapReduce CPU Time Spent: 4 seconds 340 msec

OK

Time taken: 15.809 seconds hive> select * from department;

OK

6 ISE

5 EC

7 AERO

Time taken: 0.111 seconds, Fetched: 3 row(s)

hive> select * from emp left outer join department where dname=dept_name;

Query ID = hdoop_20210710121555_13bc8842-0de7-4185-becf-f28133639a3d

Total jobs = 1

SLF4J: Found binding in

[jar:file:/home/hdoop/hadoop-3.2.1/share/hadoop/common/lib/slf4j-log4j12-

1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]

SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.

SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]

2021-07-10 12:16:01 Dump the side-table for tag: 1 with group count: 3 into file:

file:/tmp/hive/java/hdoop/f29000d8-b5cb-46b3-be29-729ff8a6392e/hive_2021-07-

10 12-15-55 658 5060518414468933463-1/-local-10004/HashTable-Stage-3/

MapJoin-mapfile01--.hashtable2021-07-10 12:16:01 Uploaded 1 File to:

file:/tmp/hive/java/hdoop/f29000d8-b5cb-46b3-be29-729ff8a6392e/hive 2021-07-

10 12-15-55 658 5060518414468933463-1/-local-10004/HashTable-Stage-3/

MapJoin-mapfile01--.hashtable (329 bytes)

Execution completed successfully

MapredLocal task succeeded

Launching Job 1 out of 1

Number of reduce tasks is set to 0 since there's no reduce operator

Starting Job = job_1625897919713_0006, Tracking URL = http://Chinmayakb:8088/proxy/application 1625897919713 0006/

Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill

job 1625897919713 0006

Hadoop job information for Stage-3: number of mappers: 1; number of reducers: 0 2021-07-10 12:16:08,263 Stage-3 map = 0%, reduce = 0%

2021-07-10 12:16:12,381 Stage-3 map = 100%, reduce = 0%, Cumulative CPU 2.45 sec

MapReduce Total cumulative CPU time: 2 seconds 450 msec

Ended Job = job_1625897919713_0006

MapReduce Jobs Launched:

Stage-Stage-3: Map: 1 Cumulative CPU: 2.45 sec HDFS Read: 10419 HDFS

Write: 294 SUCCESS

Total MapReduce CPU Time Spent: 2 seconds 450 msec

OK

chinmaya 5000 12000Bangalore **ISE** 6 6 **ISE** Shashank 5001 42000Shimoga EC 4 5 EC Amith 5002 22000Bangalore **ISE** 5 6 **ISE**

Nikhil 5004 52000Ballary AERO 3 7 AERO

Time taken: 24.036 seconds, Fetched: 4 row(s)

hive> select * from emp right outer join department where dname=dept_name;

Query ID = hdoop_20210710121645_a828ba60-0338-48e8-9029-88773660df32

Total jobs = 1

SLF4J: Found binding in [jar:file:/home/hdoop/apache-hive-3.1.2-bin/lib/log4j-slf4j-impl-2.10.0.jar!/org/slf4j/impl/StaticLoggerBinder.class]

SLF4J: Found binding in

[jar:file:/home/hdoop/hadoop-3.2.1/share/hadoop/common/lib/slf4j-log4j12-

1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]

SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]

2021-07-10 12:16:50 Dump the side-table for tag: 1 with group count: 3 into file: file:/tmp/hive/java/hdoop/f29000d8-b5cb-46b3-be29-729ff8a6392e/hive 2021-07-

10_12-16-45_561_8658834088026560490-1/-local-10004/HashTable-Stage-3/

MapJoin-mapfile11--.hashtable

2021-07-10 12:16:50 End of local task; Time Taken: 1.151 sec.

Execution completed successfully

MapredLocal task succeeded

Launching Job 1 out of 1

Number of reduce tasks is set to 0 since there's no reduce operator

Starting Job = job_1625897919713_0007, Tracking URL = http://Chinmayakb:8088/proxy/application_1625897919713_0007/

Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill

job 1625897919713 0007

Hadoop job information for Stage-3: number of mappers: 1; number of reducers: 0

2021-07-10 12:16:57,442 Stage-3 map = 0%, reduce = 0%

2021-07-10 12:17:02,587 Stage-3 map = 100%, reduce = 0%, Cumulative CPU 2.5 sec

MapReduce Total cumulative CPU time: 2 seconds 500 msec

Ended Job = $job_1625897919713_0007$

MapReduce Jobs Launched:

Stage-Stage-3: Map: 1 Cumulative CPU: 2.5 sec HDFS Read: 10432 HDFS Write: 294 SUCCESS

```
Total MapReduce CPU Time Spent: 2 seconds 500 msec
OK
chinmaya
           5000 12000Bangalore
                                  ISE
                                              6
                                                    ISE
                                        6
Shashank
           5001 42000Shimoga
                                  EC
                                        4
                                              5
                                                    EC
           5002 22000Bangalore
                                  ISE
                                        5
                                              6
Amith
                                                    ISE
                                              3
                                                    7
Nikhil
           5004 52000Ballary
                                  AERO
                                                          AERO
Time taken: 18.452 seconds, Fetched: 4 row(s)
hive > select * from emp full outer join department where dname=dept_name;
Query ID = hdoop 20210710121720 f5c9d77c-9493-43c6-8f3f-4fa714303d1e
Total jobs = 1
SLF4J: Found binding in [jar:file:/home/hdoop/apache-hive-3.1.2-bin/lib/log4j-slf4j-
impl-2.10.0.jar!/org/slf4j/impl/StaticLoggerBinder.class]
                       Dump the side-table for tag: 1 with group count: 3 into file:
2021-07-10 12:17:25
file:/tmp/hive/java/hdoop/f29000d8-b5cb-46b3-be29-729ff8a6392e/hive 2021-07-
10 12-17-20 112 5810221896728672370-1/-local-10004/HashTable-Stage-3/
MapJoin-mapfile21--.hashtable2021-07-10 12:17:25
                                                    Uploaded 1 File to:
file:/tmp/hive/java/hdoop/f29000d8-b5cb-46b3-be29-729ff8a6392e/hive 2021-07-
10 12-17-20 112 5810221896728672370-1/-local-10004/HashTable-Stage-3/
MapJoin-mapfile21--.hashtable (329 bytes)
Execution completed successfully
MapredLocal task succeeded
Launching Job 1 out of 1
Number of reduce tasks is set to 0 since there's no reduce operator
Starting Job = job_1625897919713_0008, Tracking URL = http://Chinmayakb:8088/
proxy/application 1625897919713 0008/
Kill Command = /home/hdoop/hadoop-3.2.1/bin/mapred job -kill
job 1625897919713 0008
Hadoop job information for Stage-3: number of mappers: 1; number of reducers: 0
2021-07-10 12:17:31,105 Stage-3 map = 0%, reduce = 0%
2021-07-10 12:17:36,203 Stage-3 map = 100%, reduce = 0%, Cumulative CPU 2.61
sec
MapReduce Total cumulative CPU time: 2 seconds 610 msec
Ended Job = job 1625897919713 0008
MapReduce Jobs Launched:
Stage-Stage-3: Map: 1 Cumulative CPU: 2.61 sec HDFS Read: 10432 HDFS
Write: 294 SUCCESS
Total MapReduce CPU Time Spent: 2 seconds 610 msec
OK
chinmaya
           5000 12000Bangalore
                                              6
                                                    ISE
                                  ISE
                                        6
                                              5
Shashank
           5001 42000Shimoga
                                  EC
                                        4
                                                    EC
                                              6
Amith
           5002 22000Bangalore
                                  ISE
                                        5
                                                    ISE
Nikhil
           5004 52000Ballary
                                  AERO
                                              3
                                                    7
                                                          AERO
Time taken: 17.194 seconds, Fetched: 4 row(s)
hive>
```