B.M.S. COLLEGE OF ENGINEERING BENGALURU
Autonomous Institute, Affiliated to VTU

Lab Report

Big-Data Analytics

(20CS6PEBDA)

Submitted in partial fulfillment for the 6th Semester Laboratory

Bachelor of Engineering
in
Computer Science and Engineering

Submitted by:

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B.M.S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the Lab work entitled "**BIG DATA ANALYTICS**" carried out by **STHAVIR G SOROFF (1BM19CS161),** who is bonafide student of **B. M. S. College of Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum during the year 2022. The Lab report has been approved as it satisfies the academic requirements in respect of a **Big Data Analytics - (20CS6PEBDA)** work prescribed for the said degree.

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Program - 1

1. Create a keyspace by name Employee

```
cqlsh> create keyspace employee with replication = {'class': 'SimpleStrategy', 'replication_factor': 1};
cqlsh> use employee;
```

2. Create a column family by name Employee-Info with attributes
Emp_Id Primary Key, Emp_Name, Designation, Date_of_Joining, Salary,
Dept_Name

```
cqlsh:employee> create table employeeinfo(emp_id int primary key, emp_name text, designation text, doj timestamp, salary double, dept_name text);
```

3. Insert the values into the table in batch

```
cqlsh:employee> begin batch
        ... insert into employeeinfo(emp_id, emp_name, designation, doj, salary, dept_name) values (1, 'Ajay', 'Data analyst', '2018-04-16', 20000, 'Corporate');
        ... insert into employeeinfo(emp_id, emp_name, designation, doj, salary, dept_name) values (121, 'Chaitra', 'web design', '2019-08-06', 15000, 'web_designer');
        ... apply batch;
cqlsh:employee> select * from employeeinfo;
```

4. Update Employee name and Department of Emp-Id 121

```
cqlsh:employee> update employeeinfo set emp_name = 'Joy', dept_name = 'Management' where emp_id = 121;
cqlsh:employee> select * from employeeinfo;
```

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

```
cqlsh:employee> alter table employeeinfo add projects set<text>;
```

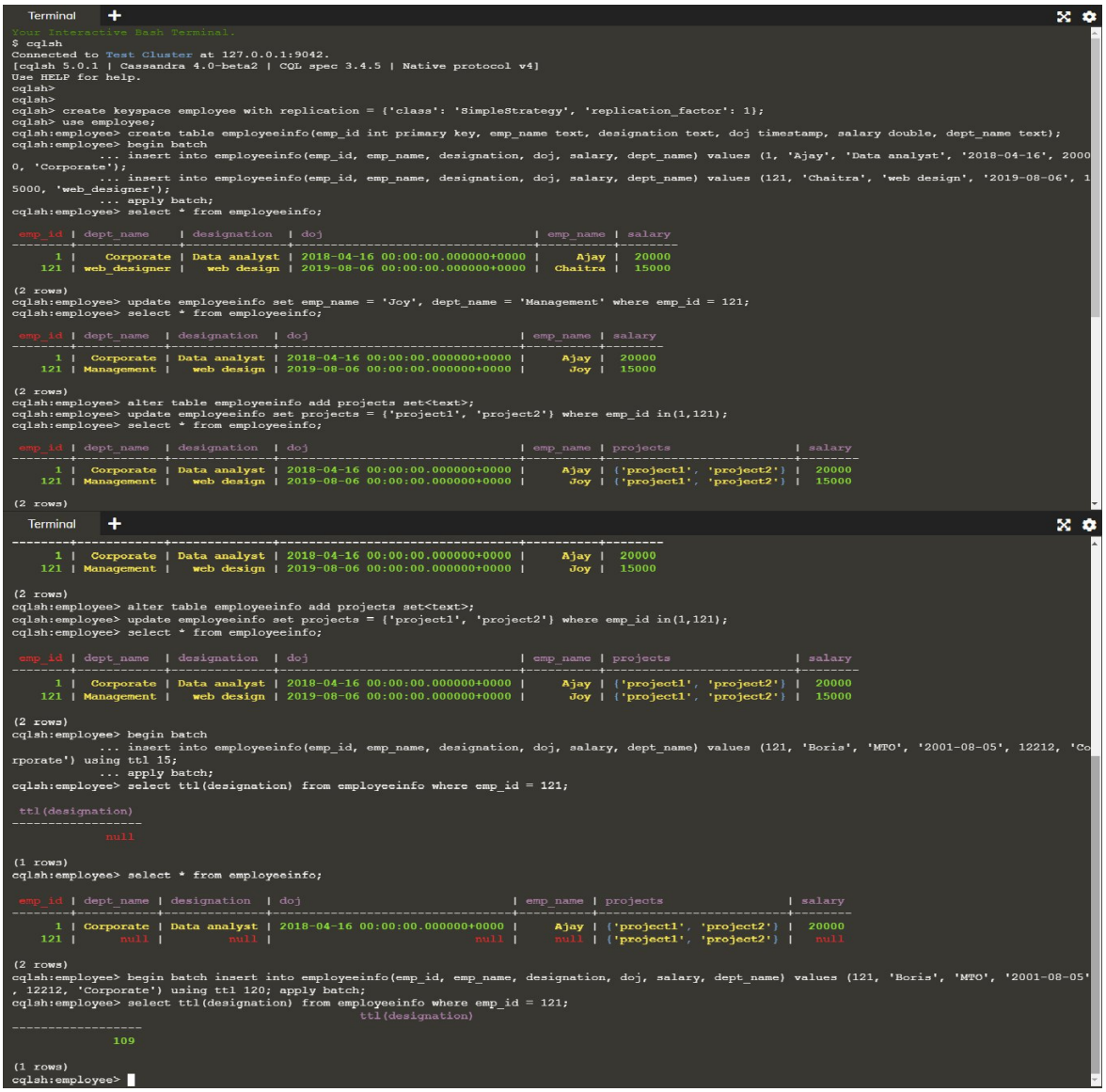
6. Update the altered table to add project names.

```
cqlsh:employee> update employeeinfo set projects = {'project1', 'project2'} where emp_id in(1,121);
cqlsh:employee> select * from employeeinfo;
```

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

```
cqlsh:employee> begin batch
           ... insert into employeeinfo(emp_id, emp_name, designation, doj, salary, dept_name) values
(121, 'Boris', 'MTO', '2001-08-05', 12212, 'Corporate') using ttl 15;
           ... apply batch;
cqlsh:employee> select ttl(designation) from employeeinfo where emp_id = 121;
```

Output :



Program – 2

Perform the following DB operations using Cassandra.

1.Create a keyspace by name Library

```
cqlsh> create keyspace 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 library_info( id int, counter_val counter, stud_name text, book_name text, book_id int, issue_date timestamp,primary key(id,stud_name,book_name,book_id,issue_date));
```

3. Insert the values into the table in batch

```
cqlsh:library> update library_info SET counter_val = counter_val +1 where id = 1 and stud_name = 'Anand' and book_name = 'CNS' and book_id = 121 and issue_date='2020-12-31';
cqlsh:library> update library_info SET counter_val = counter_val +1 where id = 3 and stud_name = 'Arjun' and book_name = 'ML' and book_id = 112 and issue_date='2021-02-01';

cqlsh:library> update library_info SET counter_val = counter_val +1 where id = 5 and stud_name = 'Chaitra' and book_name = 'Python' and book_id = 114 and issue_date='2009-08-27';
cqlsh:library> select * from library_info;
```

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

```
cqlsh:library> update library_info SET counter_val = counter_val +1 where id = 3 and stud_name = 'Arjun' and book_name = 'ML' and book_id = 112 and issue_date='2021-02-01';
```

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

```
cqlsh:library> select * from library_info where counter_val = 2 allow filtering;
```

6. Export the created column to a csv file

```
cqlsh:library> copy library_info(id,counter_val,stud_name,book_name,book_id,issue_date) to 'Desktop/library_data.csv';
```

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

cqlsh:library> copy library_info(id,counter_val,stud_name,book_name,book_id,issue_date) from 'Desktop/library_data.csv';

Output :

Program – 3

Perform the following DB operations using MongoDB.

1. Create a database “Student” with the following attributes Rollno, Age, ContactNo, Email-Id.

```
use student
```

2. Insert appropriate values

```
db.student.insert({Roll: 10, Name: "suma", age: 21, contact: "7723112389", email: "suma@gmail.com"})
db.student.insert({Roll: 11, Name: "ABC", age: 20, contact: "9263532389", email: "abc@gmail.com"})
db.student.insert({Roll: 12, Name: "shek", age: 21, contact: "7788996655", email: "shek@gmail.com"})
db.student.insert({Roll: 13, Name: "raj", age: 20, contact: "1234123412", email: "raj@gmail.com"})
```

3. Write a query to update Email-Id of a student with rollno 10.

```
db.student.update({Roll:10}, {$set: {email: "suma123@gmail.com"}})
```

4. Replace the student name from “ABC” to “FEM” of rollno 11.

```
db.student.update({Roll:11}, {$set: {Name: "FEM"}})
```

5. Export the created table into local file system

```
mongoexport --db student --collection student --type csv --out D:\export.csv --fields “Roll,Name,age,contact,email”
```

6. Drop the table

```
db.student.drop()
```

7. Import a given csv dataset from the local file system into mongodb collection.

```
mongoimport --db student --collection student --type csv --file D:\export.csv --headerline
```

Output :

```
use student
db.student.insert({Roll: 10, Name: "suma", age: 21, contact: "7723112389", email: "suma@gmail.com"})
db.student.insert({Roll: 11, Name: "ABC", age: 20, contact: "9263532389", email: "abc@gmail.com"})
db.student.insert({Roll: 12, Name: "shek", age: 21, contact: "7788996655", email: "shek@gmail.com"})
db.student.insert({Roll: 13, Name: "raj", age: 20, contact: "1234123412", email: "raj@gmail.com"})

db.student.update({Roll:10}, {$set: {email: "suma123@gmail.com"}})
db.student.update({Roll:11}, {$set: {Name: "FEM"}})

show collections
db.student.find()

mongoexport --db testdb --collection student --out C:\Users\SUMALATA\OneDrive\Desktop\output.json

Drop student

mongoimport --db testdb --collection Student C:\Users\SUMALATA\OneDrive\Desktop\output.json
```