Advanced Database System (Lab)

PRN: 2122000567

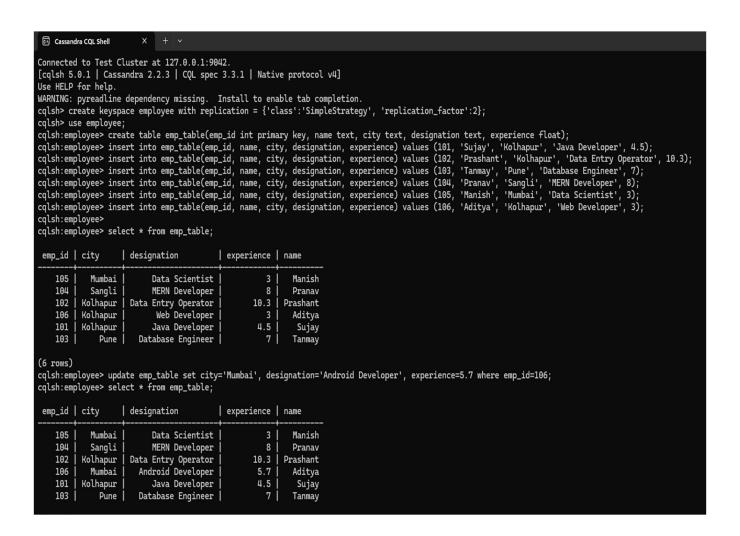**Name:** Sujay Sanjay Gangan

Roll No.: B35

Experiment No.: 08

Problem Statement 1:

1. Create keyspace : employee

2. Create : emp_table (emp_id int, name text, city text, designation text,
   experience float, primary key(emp_id));

3. Perform following operations on created table:

   a. Insert rows
   b. Update rows
   c. Update rows with upsert
   d. Retrieve data from table
   e. Alter table add columns ((email set<text>, expertise list<text>, prev_jobs map<text, int>)
   f. Insert new rows
   g. Delete rows and values

```
⊡ Cassandra CQL Shell       X    + ∨

Connected to Test Cluster at 127.0.0.1:9042.
[cqlsh 5.0.1 | Cassandra 2.2.3 | CQL spec 3.3.1 | Native protocol v4]
Use HELP for help.
WARNING: pyreadline dependency missing.  Install to enable tab completion.
cqlsh> create keyspace employee with replication = {'class':'SimpleStrategy', 'replication_factor':2};
cqlsh> use employee;
cqlsh:employee> create table emp_table(emp_id int primary key, name text, city text, designation text, experience float);
cqlsh:employee> insert into emp_table(emp_id, name, city, designation, experience) values (101, 'Sujay', 'Kolhapur', 'Java Developer', 4.5);
cqlsh:employee> insert into emp_table(emp_id, name, city, designation, experience) values (102, 'Prashant', 'Kolhapur', 'Data Entry Operator', 10.3);
cqlsh:employee> insert into emp_table(emp_id, name, city, designation, experience) values (103, 'Tanmay', 'Pune', 'Database Engineer', 7);
cqlsh:employee> insert into emp_table(emp_id, name, city, designation, experience) values (104, 'Pranav', 'Sangli', 'MERN Developer', 8);
cqlsh:employee> insert into emp_table(emp_id, name, city, designation, experience) values (105, 'Manish', 'Mumbai', 'Data Scientist', 3);
cqlsh:employee> insert into emp_table(emp_id, name, city, designation, experience) values (106, 'Aditya', 'Kolhapur', 'Web Developer', 3);
cqlsh:employee>
cqlsh:employee> select * from emp_table;

 emp_id | city     | designation         | experience | name
--------+----------+---------------------+------------+----------
    105 |   Mumbai |      Data Scientist |          3 |   Manish
    104 |   Sangli |      MERN Developer |          8 |   Pranav
    102 | Kolhapur | Data Entry Operator |       10.3 | Prashant
    106 | Kolhapur |       Web Developer |          3 |   Aditya
    101 | Kolhapur |      Java Developer |        4.5 |    Sujay
    103 |     Pune |   Database Engineer |          7 |   Tanmay

(6 rows)
cqlsh:employee> update emp_table set city='Mumbai', designation='Android Developer', experience=5.7 where emp_id=106;
cqlsh:employee> select * from emp_table;

 emp_id | city     | designation         | experience | name
--------+----------+---------------------+------------+----------
    105 |   Mumbai |      Data Scientist |          3 |   Manish
    104 |   Sangli |      MERN Developer |          8 |   Pranav
    102 | Kolhapur | Data Entry Operator |       10.3 | Prashant
    106 |   Mumbai |   Android Developer |        5.7 |   Aditya
    101 | Kolhapur |      Java Developer |        4.5 |    Sujay
    103 |     Pune |   Database Engineer |          7 |   Tanmay
```

```
cqlsh:employee> ALTER TABLE emp_table ADD email SET<TEXT>;
cqlsh:employee> ALTER TABLE emp_table ADD expertise LIST<TEXT>;
cqlsh:employee> ALTER TABLE emp_table ADD prev_jobs MAP<TEXT, INT>;
cqlsh:employee>
cqlsh:employee> select * from emp_table;

 emp_id | city     | designation        | email | experience | expertise | name     | prev_jobs
--------+----------+--------------------+-------+------------+-----------+----------+-----------
    105 |   Mumbai |      Data Scientist |  null |          3 |      null |   Manish |      null
    104 |   Sangli |       MERN Developer |  null |          8 |      null |   Pranav |      null
    102 | Kolhapur | Data Entry Operator |  null |       10.3 |      null | Prashant |      null
    106 |   Mumbai |    Android Developer |  null |        5.7 |      null |   Aditya |      null
    101 | Kolhapur |       Java Developer |  null |        4.5 |      null |    Sujay |      null
    103 |     Pune |    Database Engineer |  null |          7 |      null |   Tanmay |      null

(6 rows)
cqlsh:employee> update emp_table set email={'sujay@gmail.com'}, expertise=['Java','Flutter','SQL'], prev_jobs={'Jr. Web Developer':2, 'Flutter Developer':4} where emp_id=101;
cqlsh:employee> update emp_table set email={'prashant@gmail.com'}, expertise=['Python','C++'], prev_jobs={'Data Entry Operator':1, 'Database Engineer':3} where emp_id=102;
cqlsh:employee>
cqlsh:employee> insert into emp_table(emp_id, name, city, designation, experience, email, expertise, prev_jobs) values (107, 'Soham', 'Mumbai', 'AIML Scientist', 3, {'soham@gmail.com'}, ['AI', 'ML', 'DB'], {'Data Scientist': 2, 'ML Engineer':3});
cqlsh:employee>
cqlsh:employee> select * from emp_table;

 emp_id | city     | designation         | email                  | experience | expertise                  | name     | prev_jobs
--------+----------+---------------------+------------------------+------------+----------------------------+----------+--------------------------------------------------
    105 |   Mumbai |       Data Scientist |                   null |          3 |                       null |   Manish |                                             null
    107 |   Mumbai |       AIML Scientist |      {'soham@gmail.com'} |          3 |          ['AI', 'ML', 'DB'] |    Soham |           {'Data Scientist': 2, 'ML Engineer': 3}
    104 |   Sangli |        MERN Developer |                   null |          8 |                       null |   Pranav |                                             null
    102 | Kolhapur | Data Entry Operator | {'prashant@gmail.com'} |       10.3 |          ['Python', 'C++'] | Prashant | {'Data Entry Operator': 1, 'Database Engineer': 3}
    106 |   Mumbai |     Android Developer |                   null |        5.7 |                       null |   Aditya |                                             null
    101 | Kolhapur |        Java Developer |    {'sujay@gmail.com'} |        4.5 | ['Java', 'Flutter', 'SQL'] |    Sujay |    {'Flutter Developer': 4, 'Jr. Web Developer': 2}
    103 |     Pune |     Database Engineer |                   null |          7 |                       null |   Tanmay |                                             null

(7 rows)
cqlsh:employee> DELETE FROM emp_table WHERE emp_id=105;
cqlsh:employee> select * from emp_table;

 emp_id | city     | designation         | email                  | experience | expertise                  | name     | prev_jobs
--------+----------+---------------------+------------------------+------------+----------------------------+----------+--------------------------------------------------
    107 |   Mumbai |       AIML Scientist |      {'soham@gmail.com'} |          3 |          ['AI', 'ML', 'DB'] |    Soham |           {'Data Scientist': 2, 'ML Engineer': 3}
    104 |   Sangli |        MERN Developer |                   null |          8 |                       null |   Pranav |                                             null
    102 | Kolhapur | Data Entry Operator | {'prashant@gmail.com'} |       10.3 |          ['Python', 'C++'] | Prashant | {'Data Entry Operator': 1, 'Database Engineer': 3}
    106 |   Mumbai |     Android Developer |                   null |        5.7 |                       null |   Aditya |                                             null
    101 | Kolhapur |        Java Developer |    {'sujay@gmail.com'} |        4.5 | ['Java', 'Flutter', 'SQL'] |    Sujay |    {'Flutter Developer': 4, 'Jr. Web Developer': 2}
    103 |     Pune |     Database Engineer |                   null |          7 |                       null |   Tanmay |                                             null

(6 rows)
```

Problem Statement 2:

1. create table product(id uuid, name text, price float, quant int, primary key(id));

2. Perform following operations on created table:
   a. Insert rows
   b. Alter table product add (inv_date timestamp, available boolean);
   c. Insert new rows

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Cassandra CQL Shell        ×    +  ∨

cqlsh:employee>
cqlsh:employee> create table product(id uuid primary key, name text, price float, quant int);
cqlsh:employee>
cqlsh:employee> insert into product(id, name, price, quant) values (now(), 'Pen-Drive', 450.30, 10);
cqlsh:employee> insert into product(id, name, price, quant) values (now(), 'HDD', 10000.45, 13);
cqlsh:employee> insert into product(id, name, price, quant) values (now(), 'SDD', 2000, 300);
cqlsh:employee>
cqlsh:employee> select * from product;

 id                                   | name      | price      | quant
--------------------------------------+-----------+------------+-------
 317aa780-ab2b-11ef-b31e-b9780e10d4ab |       HDD | 10000.4502 |    13
 144abb00-ab2b-11ef-b31e-b9780e10d4ab | Pen-Drive |  450.29999 |    10
 3fa276d0-ab2b-11ef-b31e-b9780e10d4ab |       SDD |       2000 |   300

(3 rows)
cqlsh:employee>
cqlsh:employee>  ALTER TABLE product ADD inv_date TIMESTAMP;
cqlsh:employee>  ALTER TABLE product ADD available BOOLEAN;
cqlsh:employee>
cqlsh:employee> insert into product(id, name, price, quant, inv_date, available) values (now(), 'Keyboard', 300.40, 225, toTimestamp(now()), true);
cqlsh:employee> insert into product(id, name, price, quant, inv_date, available) values (now(), 'Speakers', 700.80, 0, toTimestamp(now()), false);
cqlsh:employee>
cqlsh:employee> select * from product;

 id                                   | available | inv_date                 | name      | price      | quant
--------------------------------------+-----------+--------------------------+-----------+------------+-------
 317aa780-ab2b-11ef-b31e-b9780e10d4ab |      null |                     null |       HDD | 10000.4502 |    13
 82977750-ab2c-11ef-b31e-b9780e10d4ab |      True | 2024-11-25 12:55:12+0000 |  Keyboard |  300.39999 |   225
 144abb00-ab2b-11ef-b31e-b9780e10d4ab |      null |                     null | Pen-Drive |  450.29999 |    10
 ab8d9c70-ab2c-11ef-b31e-b9780e10d4ab |     False | 2024-11-25 12:56:21+0000 |  Speakers |  700.79999 |     0
 3fa276d0-ab2b-11ef-b31e-b9780e10d4ab |      null |                     null |       SDD |       2000 |   300

(5 rows)
cqlsh:employee> |
```