

# Md Yaseen Ahmed

## 1BM19CS404

**Lab-03:** Perform the following DB operations using Cassandra.

1. Create a keyspace by name Employee

```
Terminal +
cqlsh> CREATE KEYSPACE Employee WITH REPLICATION = {'class':'SimpleStrategy','replication_factor':1};
cqlsh> DESCRIBE KEYSPACES;

employee  system_auth      system_schema  system_views
system    system_distributed  system_traces  system_virtual_schema

cqlsh> USE Employee;
cqlsh: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 Employee_info (
    ... emp_id int PRIMARY KEY,
    ... emp_name text,
    ... designation text,
    ... date_of_joining timestamp,
    ... salary int,
    ... dept_name text);
cqlsh:employee> DESCRIBE TABLE Employee_info;

CREATE TABLE employee.employee_info (
  emp_id int PRIMARY KEY,
  date_of_joining timestamp,
  dept_name text,
  designation text,
  emp_name text,
  salary int
) WITH additional_write_policy = '99p'
  AND bloom_filter_fp_chance = 0.01
  AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
  AND cdc = false
  AND comment = ''
  AND compaction = {'class': 'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold': '32', 'min_threshold': '4'}
  AND compression = {'chunk_length_in_kb': '16', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
  AND crc_check_chance = 1.0
  AND default_time_to_live = 0
  AND extensions = {}
  AND gc_grace_seconds = 864000
  AND max_index_interval = 2048
  AND memtable_flush_period_in_ms = 0
  AND min_index_interval = 128
  AND read_repair = 'BLOCKING'
  AND speculative_retry = '99p';
cqlsh:employee>
```

3. Insert the values into the table in batch

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```
cqlsh:employee> BEGIN BATCH
... INSERT INTO Employee_info (emp_id, emp_name, designation, date_of_joining, salary, dept_name) VALUES (121, 'Md Yaseen Ahmed', 'SDE', '2020-04-02', 25000, 'Software Engineers');
... INSERT INTO Employee_info (emp_id, emp_name, designation, date_of_joining, salary, dept_name) VALUES (131, 'Ahmed', 'Tester', '2020-06-05', 24000, 'CQA');
... INSERT INTO Employee_info (emp_id, emp_name, designation, date_of_joining, salary, dept_name) VALUES (141, 'Smith', 'Full Stack Developer', '2020-06-05', 24000, 'Web D');
... INSERT INTO Employee_info (emp_id, emp_name, designation, date_of_joining, salary, dept_name) VALUES (151, 'David', 'Full Stack Developer', '2020-06-05', 34000, 'UI team');
... INSERT INTO Employee_info (emp_id, emp_name, designation, date_of_joining, salary, dept_name) VALUES (161, 'John', 'Backend Developer', '2020-06-05', 30000, 'Development');
... APPLY BATCH
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	salary
151	2020-06-05 00:00:00.000000+0000	UI team	Full Stack Developer	David	34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	SDE	Md Yaseen Ahmed	25000
141	2020-06-05 00:00:00.000000+0000	Web D	Full Stack Developer	Smith	24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed	24000
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer	John	30000

(5 rows)  
cqlsh:employee>

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

```
cqlsh:employee> UPDATE Employee_info SET emp_name='Yaseen Ahmed MD', designation='Full Stack Developer' WHERE emp_id=121;
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	salary
151	2020-06-05 00:00:00.000000+0000	UI team	Full Stack Developer	David	34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer	Yaseen Ahmed MD	25000
141	2020-06-05 00:00:00.000000+0000	Web D	Full Stack Developer	Smith	24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed	24000
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer	John	30000

(5 rows)  
cqlsh:employee>

#### 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 Employee_info ADD projects set<text>;
cqlsh:employee> UPDATE Employee_info set projects = projects + {'Ecommerce','IMS'} WHERE emp_id = 121;
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	projects	salary
151	2020-06-05 00:00:00.000000+0000	UI team	Full Stack Developer	David	null	34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer	Yaseen Ahmed MD	{'Ecommerce', 'IMS'}	25000
141	2020-06-05 00:00:00.000000+0000	Web D	Full Stack Developer	Smith	null	24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed	null	24000
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer	John	null	30000

(5 rows)  
cqlsh:employee>

#### 6. Update the altered table to add project names.

```
cqlsh:employee> ALTER TABLE Employee_info ADD projects set<text>;
cqlsh:employee> UPDATE Employee_info set projects = projects + {'Ecommerce','IMS'} WHERE emp_id = 121;
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	projects	salary
151	2020-06-05 00:00:00.000000+0000	UI team	Full Stack Developer	David	null	34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer	Yaseen Ahmed MD	{'Ecommerce', 'IMS'}	25000
141	2020-06-05 00:00:00.000000+0000	Web D	Full Stack Developer	Smith	null	24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed	null	24000
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer	John	null	30000

(5 rows)  
cqlsh:employee>

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7. 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 (171, 'Shikhar', 'UI Designer', '2020-07-10', 24500, 'UI team') using TTL 15;
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	projects	salary
151	2020-06-05 00:00:00.000000+0000	UI team	Full Stack Developer	David	null	34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer	Yaseen Ahmed MD	('Ecommerce', 'IMS')	25000
141	2020-06-05 00:00:00.000000+0000	Web D	Full Stack Developer	Smith	null	24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed	null	24000
171	2020-07-10 00:00:00.000000+0000	UI team	UI Designer	Shikhar	null	24500
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer	John	null	30000

(6 rows)

```
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	projects	salary
151	2020-06-05 00:00:00.000000+0000	UI team	Full Stack Developer	David	null	34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer	Yaseen Ahmed MD	('Ecommerce', 'IMS')	25000
141	2020-06-05 00:00:00.000000+0000	Web D	Full Stack Developer	Smith	null	24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed	null	24000
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer	John	null	30000

(5 rows)

```
cqlsh:employee>
```

## Code:

```
cqlsh> CREATE KEYSPACE Employee WITH REPLICATION =
{'class':'SimpleStrategy','replication_factor':1};
cqlsh> DESCRIBE KEYSPACES;
```

```
employee system_auth system_schema system_views
system system_distributed system_traces system_virtual_schema
```

```
cqlsh> USE Employee;
cqlsh:employee>
cqlsh:employee> CREATE TABLE Employee_info (
... emp_id int PRIMARY KEY,
... emp_name text,
... designation text,
... date_of_joining timestamp,
... salary int,
... dept_name text);
```

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```
cqlsh:employee> DESCRIBE TABLE Employee_info;
```

```
CREATE TABLE employee.employee_info (  
    emp_id int PRIMARY KEY,  
    date_of_joining timestamp,  
    dept_name text,  
    designation text,  
    emp_name text,  
    salary int  
) WITH additional_write_policy = '99p'  
    AND bloom_filter_fp_chance = 0.01  
    AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}  
    AND cdc = false  
    AND comment = ''  
    AND compaction = {'class':  
'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold':  
'32', 'min_threshold': '4'}  
    AND compression = {'chunk_length_in_kb': '16', 'class':  
'org.apache.cassandra.io.compress.LZ4Compressor'}  
    AND crc_check_chance = 1.0  
    AND default_time_to_live = 0  
    AND extensions = {}  
    AND gc_grace_seconds = 864000  
    AND max_index_interval = 2048  
    AND memtable_flush_period_in_ms = 0  
    AND min_index_interval = 128  
    AND read_repair = 'BLOCKING'  
    AND speculative_retry = '99p';  
cqlsh:employee>
```

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```
cqlsh:employee> BEGIN BATCH
    ... INSERT INTO Employee_info (emp_id, emp_name, designation,
date_of_joining, salary, dept_name) VALUES (121, 'Md Yaseen Ahmed', 'SDE',
'2020-04-02', 25000, 'Software Engineers');
    ... INSERT INTO Employee_info (emp_id, emp_name, designation,
date_of_joining, salary, dept_name) VALUES (131, 'Ahmed', 'Tester', '2020-06-05', 24000,
'CQA');
    ... INSERT INTO Employee_info (emp_id, emp_name, designation,
date_of_joining, salary, dept_name) VALUES (141, 'Smith', 'Full Stack Developer',
'2020-06-05', 24000, 'Web D');
    ... INSERT INTO Employee_info (emp_id, emp_name, designation,
date_of_joining, salary, dept_name) VALUES (151, 'David', 'Full Stack Developer',
'2020-06-05', 34000, 'UI team');
    ... INSERT INTO Employee_info (emp_id, emp_name, designation,
date_of_joining, salary, dept_name) VALUES (161, 'John', 'Backend Developer',
'2020-06-05', 30000, 'Development');
    ... APPLY BATCH
    ... ;
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	salary
151	2020-06-05 00:00:00.000000+0000	UI team	Full Stack Developer	David	34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	SDE	Md Yaseen Ahmed	25000

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141	2020-06-05 00:00:00.000000+0000		Web D	Full Stack Developer	
Smith	24000				
131	2020-06-05 00:00:00.000000+0000		CQA	Tester	Ahmed
24000					
161	2020-06-05 00:00:00.000000+0000		Development	Backend Developer	
John	30000				

(5 rows)

```
cqlsh:employee> UPDATE Employee_info SET emp_name='Yaseen Ahmed',
designation='Full Stack Developer' WHERE emp_id=121;
cqlsh:employee> SELECT * FROM Employee_info;
```

```
emp_id | date_of_joining      | dept_name      | designation      | emp_name      | salary
```

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```
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```

```
-----+-----+-----+-----+
```

151   2020-06-05 00:00:00.000000+0000	UI team   Full Stack Developer
David   34000	
121   2020-04-02 00:00:00.000000+0000	Software Engineers   Full Stack Developer
Yaseen Ahmed   25000	
141   2020-06-05 00:00:00.000000+0000	Web D   Full Stack Developer
Smith   24000	
131   2020-06-05 00:00:00.000000+0000	CQA   Tester   Ahmed
24000	
161   2020-06-05 00:00:00.000000+0000	Development   Backend Developer
John   30000	

(5 rows)

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```
cqlsh:employee> UPDATE Employee_info SET emp_name='Yaseen Ahmed MD',  
designation='Full Stack Developer' WHERE emp_id=121;  
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	salary
151	2020-06-05 00:00:00.000000+0000		UI team	Full Stack Developer	David   34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer	Yaseen Ahmed MD	25000
141	2020-06-05 00:00:00.000000+0000		Web D	Full Stack Developer	Smith   24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed	24000
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer	John	30000

(5 rows)

```
cqlsh:employee> ALTER TABLE Employee_info ADD projects set<text>;  
cqlsh:employee> UPDATE Employee_info set projects = projects + {'Ecommerce','LMS'}  
WHERE emp_id = 121;  
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	projects	salary
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151		2020-06-05 00:00:00.000000+0000		UI team		Full Stack Developer	
David		null		34000			
121		2020-04-02 00:00:00.000000+0000		Software Engineers		Full Stack Developer	
Yaseen Ahmed MD		{'Ecommerce', 'LMS'}		25000			
141		2020-06-05 00:00:00.000000+0000		Web D		Full Stack Developer	
Smith		null		24000			
131		2020-06-05 00:00:00.000000+0000		CQA		Tester	
Ahmed		null		24000			
161		2020-06-05 00:00:00.000000+0000		Development		Backend Developer	
John		null		30000			

(5 rows)

```
cqlsh:employee> INSERT INTO Employee_info (emp_id, emp_name, designation,
date_of_joining, salary, dept_name) VALUES (171, 'Shikhar', 'UI Designer',
'2020-07-10',24500, 'UI team') using TTL 15;
```

```
...
...;
...;
...;
...
...
...
...
```

Statements are terminated with a ';'. You can press CTRL-C to cancel an incomplete statement.

```
cqlsh:employee> INSERT INTO Employee_info (emp_id, emp_name, designation,
date_of_joining, salary, dept_name) VALUES (171, 'Shikhar', 'UI Designer',
'2020-07-10',24500, 'UI team') using TTL 15;
cqlsh:employee> SELECT * FROM Employee_info;
```



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emp_id	date_of_joining	dept_name	designation	emp_name	projects	salary
151	2020-06-05 00:00:00.000000+0000		UI team	Full Stack Developer		
David						34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer			
Yaseen Ahmed MD		{'Ecommerce', 'LMS'}				25000
141	2020-06-05 00:00:00.000000+0000		Web D	Full Stack Developer		
Smith						24000
131	2020-06-05 00:00:00.000000+0000	CQA	Tester	Ahmed		
						24000
171	2020-07-10 00:00:00.000000+0000		UI team	UI Designer		
Shikhar						24500
161	2020-06-05 00:00:00.000000+0000	Development	Backend Developer			
John						30000

(6 rows)

```
cqlsh:employee> SELECT * FROM Employee_info;
```

emp_id	date_of_joining	dept_name	designation	emp_name	projects	salary
151	2020-06-05 00:00:00.000000+0000		UI team	Full Stack Developer		
David						34000
121	2020-04-02 00:00:00.000000+0000	Software Engineers	Full Stack Developer			
Yaseen Ahmed MD		{'Ecommerce', 'LMS'}				25000

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141   2020-06-05 00:00:00.000000+0000	Web D   Full Stack Developer
Smith   null   24000	
131   2020-06-05 00:00:00.000000+0000	CQA   Tester   Ahmed
null   24000	
161   2020-06-05 00:00:00.000000+0000	Development   Backend Developer
John   null   30000	

(5 rows)