

CQL

- **Connect to cql shell**

Connected as shitalpathar.ce@ddu.ac.in.

Connected to cndb at cassandra.ingress:9042.

[cqlsh 6.8.0 | Cassandra 4.0.0.6816 | CQL spec 3.4.5 | Native protocol v4 | TLS]

Use HELP for help.

- To find/describe the keyspaces\

```
token@cqlsh> describe KEYSPACES;
```

system_auth datastax_sla system_traces

system_schema system system_views

```
data_endpoint_auth mykeyspace system_virtual_schema
```

- To use the keyspace

```
token@cqlsh> USE mykeyspace ;
```

- **To display the list of tables present in keyspace**

```
token@cqlsh:mykeyspace> describe tables;
```

Timeline

- To create a table in keyspace use CREATE TABLE COMMAND

```
token@cqlsh:mykeyspace> CREATE table employee_by_id
```

```
( id int primary key, name text, position text);
```

```
token@cqlsh:mykeyspace> describe tables;
```

employee_by_id timeline

- **To display the structure of a table use describe table tablename**

```
token@cqlsh:mykeyspace> describe table employee_by_id ;
```

```
CREATE TABLE mykeyspace.employee_by_id (
```

```
id int PRIMARY KEY,
```

name text,

```

    position text
) WITH additional_write_policy = '99p'
    AND bloom_filter_fp_chance = 0.01
    AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
    AND comment = ""
    AND compaction = {'class':
'org.apache.cassandra.db.compaction.UnifiedCompactionStrategy'}
    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 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';

```

token@cqlsh:mykeyspace> create table student(stud_id int, stud_name text, sem int, result float,PRIMARY KEY(stud_id))

... ;

token@cqlsh:mykeyspace> describe table student;

```

CREATE TABLE mykeyspace.student (
    stud_id int PRIMARY KEY,
    result float,
    sem int,
    stud_name text
) WITH additional_write_policy = '99p'
    AND bloom_filter_fp_chance = 0.01
    AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
    AND comment = ""
    AND compaction = {'class':
'org.apache.cassandra.db.compaction.UnifiedCompactionStrategy'}
    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 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';

- **DML operations in cassandra**

1. Insert
2. Update
3. delete

- **Select operation(to display the records)**

1. Insert and update operations(upsert)

```
token@cqlsh:mykeyspace> insert into student(stud_id,stud_name,sem,result)
values(1,'shital',5,95.8) ;
```

```
token@cqlsh:mykeyspace> insert into student(stud_id,stud_name,sem,result)
values(2,'John',7,60.8) ;
```

```
token@cqlsh:mykeyspace> insert into student(stud_id,stud_name,sem,result)
values(3,'Jiya',7,80.08) ;
```

```
token@cqlsh:mykeyspace> insert into student(stud_id,stud_name,sem,result)
values(4,'ram',5,60.0) ;
```

- **To display the records use select**

```
token@cqlsh:mykeyspace> select * from student;
```

```
stud_id | result | sem | stud_name
-----+-----+----+-----
1 | 95.8 | 5 | shital
2 | 60.8 | 7 | John
4 | 60 | 5 | ram
3 | 80.08 | 7 | Jiya
```

```
token@cqlsh:mykeyspace> create table student_byidsem(id int, sem int, name text,
result float, PRIMARY KEY((id,sem),result));
```

```
token@cqlsh:mykeyspace> describe table student_byidsem;
```

```
token@cqlsh:mykeyspace> create table student_byidsem(id int, sem int, name text,
result float, PRIMARY KEY((sem,result),id));
```

```
token@cqlsh:mykeyspace> insert into student_byidsem(id,sem,result,name)
values(1,5,50.5,'A');
```

```
token@cqlsh:mykeyspace> insert into student_byidsem(id,sem,result,name)
values(2,7,80.5,'B');
```

```
token@cqlsh:mykeyspace> insert into student_byidsem(id,sem,result,name)
values(3,7,90.5,'C');
token@cqlsh:mykeyspace> insert into student_byidsem(id,sem,result,name)
values(5,3,90.5,'D');
token@cqlsh:mykeyspace> insert into student_byidsem(id,sem,result,name)
values(6,7,50.5,'E');
```

```
token@cqlsh:mykeyspace> select * from student_byidsem;
```

```
sem | result | id | name
-----+-----+----+-----
7 | 80.5 | 2 | B
7 | 50.5 | 6 | E
3 | 90.5 | 5 | D
5 | 50.5 | 1 | A
```

- **Update will work as an insert if data is not present**

```
token@cqlsh:mykeyspace> update student_byidsem set sem=5 where sem=7 AND
result=90.5;
```

```
token@cqlsh:mykeyspace> delete from student_byidsem where sem=7 and result=90.5
```

Upsert in cassandra

- **Delete will also acts as an insert if data does not exist**

```
token@cqlsh:mykeyspace> delete from student_byidsem where sem=7 and result=90.5
```

(5 rows)

```
token@cqlsh:mykeyspace> select * from student;
```

```
stud_id | result | sem | stud_name
-----+-----+----+-----
1 | 95.8 | 5 | shital
2 | 60.8 | 7 | John
4 | 60 | 5 | ram
3 | 80.08 | 7 | Jiya
```

(4 rows)

// insert a new row

```
token@cqlsh:mykeyspace> insert into student(stud_id,result,stud_name) values(5,85.5,'gita');
```

```
token@cqlsh:mykeyspace> select * from student;
```

```
stud_id | result | sem | stud_name
```

stud_id	result	sem	stud_name
5	85.5	null	gita
1	95.8	5	shital
2	60.8	7	John
4	60	5	ram
3	80.08	7	Jiya

// insert or update

```
token@cqlsh:mykeyspace> insert into student(stud_id,result,sem,stud_name)
values(2,80,7,'jerry');
token@cqlsh:mykeyspace> select * from student;
```

stud_id	result	sem	stud_name
5	85.5	null	gita
1	95.8	5	shital
2	80	7	jerry
4	60	5	ram
3	80.08	7	Jiya

//update one record

```
token@cqlsh:mykeyspace> update student set stud_name='mitul' where stud_id=3;
token@cqlsh:mykeyspace> select * from student;
```

stud_id	result	sem	stud_name
5	85.5	null	gita
1	95.8	5	shital
2	80	7	jerry
4	60	5	ram
3	80.08	7	mitul

//update will insert a record if record is not present in the table

```
token@cqlsh:mykeyspace> update student set stud_name='riyansh' where stud_id=6;
token@cqlsh:mykeyspace> select * from student;
```

stud_id	result	sem	stud_name
5	85.5	null	gita
1	95.8	5	shital
2	80	7	jerry
4	60	5	ram
6	null	null	riyansh

// select statement

// where clause can only be used with partition key column.

token@cqlsh:mykeyspace> select * from student where stud_id=2;

stud_id	result	sem	stud_name
2	80	7	jerry

token@cqlsh:mykeyspace> select * from student where stud_name='shital';
//error because stud_name is not partition key column

token@cqlsh:mykeyspace> select name from student_byidsem;

name
B
E
D
C
A

- **datatypes uuid,timestamp**

token@cqlsh:mykeyspace> create table user(

... id uuid,
... name text,
... pincode int
... ,
... noofpost counter,
... dateofpost timestamp,
... PRIMARY KEY(id));

token@cqlsh:mykeyspace> insert into user(id,name,pincode,dateofpost)
values(uuid(),'shital',123,'2011-02-03 04:05+0000');

token@cqlsh:mykeyspace> insert into user(id,name,pincode,dateofpost)
values(uuid(),'maria',456,'2012-03-03 04:05+0000');

token@cqlsh:mykeyspace> insert into user(id,name,pincode,dateofpost)
values(uuid(),'john',888,'2022-02-03 04:05+0000');

token@cqlsh:mykeyspace> select * from user;

id	dateofpost	name	pincode
539f543f-9209-439e-9911-19e98c88b98c	2011-02-03 04:05:00.000000+0000	shital	123
3429e13c-4df5-4263-baa4-10c6b9a6697e	2012-03-03 04:05:00.000000+0000	maria	456
350f1158-7f0a-4e0e-9536-260888037cb1	2022-02-03 04:05:00.000000+0000	john	888

- **Counter Data Type in Cassandra**

```
token@cqlsh:mykeyspace> Create table View_Counts
```

```
... (
... count_view counter,
... name varchar,
... blog_name text,
... primary key(name, blog_name)
... );
```

```
token@cqlsh:mykeyspace> update View_counts set count_view = count_view+1
... where name = 'Ashish'and blog_name = 'cassandra';
```

```
token@cqlsh:mykeyspace> select * from View_counts;
```

name	blog_name	count_view
Ashish	cassandra	1