

Md Yaseen Ahmed

1BM19CS404

BDA - Lab – 02: Working with Cassandra. Creating KEYSPACE, TABLES, Performing CRUD Operations on the Tables Created.

```
bin@binance-Precision-11700:~$ cd cassandra/apache-cassandra-3.11.0/bin
bin@binance-Precision-11700:~/cassandra/apache-cassandra-3.11.0/bin$ ./cqlsh
Connected to Test Cluster at 127.0.0.1:9042.
[cqlsh 5.0.1 | Cassandra 3.11.4 | CQL spec 3.4.4 | Native protocol v4]
Use HELP for help.
cqlsh> DESCRIBE KEYSPACES;

system_schema      system      system_distributed system_traces
system_auth        student     employee

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

students           system_auth      student           employee
system_schema      system           system_distributed system_traces

cqlsh> USE students;
cqlsh:students> CREATE TABLE students_info (Roll_No int PRIMARY KEY, StudName text, DateOfJoining timestamp, last_exam_Percent double);
cqlsh:students> DESCRIBE TABLES;

students_info

cqlsh:students> DESCRIBE TABLE students_info;

CREATE TABLE students.students_info (
  roll_no int PRIMARY KEY,
  dateofjoining timestamp,
  last_exam_percent double,
  studname text
) WITH bloom_filter_fp_chance = 0.01
AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
AND comment = ''
AND compaction = {'class': 'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold': '32', 'min_threshold': '4'}
AND compression = {'chunk_length_in_kb': '64', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
AND crc_check_chance = 1.0
AND dclocal_read_repair_chance = 0.1
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_chance = 0.0
AND speculative_retry = '99PERCENTILE';
```

```
cqlsh:students> BEGIN BATCH INSERT INTO students_info(Roll_No, StudName, DateOfJoining, last_exam_Percent) VALUES(1,'John','2021-03-25',89.98) INSERT INTO students_info(Roll_No, StudName, DateOfJoining, last_exam_Percent) VALUES(2,'JohnDoe','2021-01-25',97.98) INSERT INTO students_info(Roll_No, StudName, DateOfJoining, last_exam_Percent) VALUES(3,'Smith','2021-01-07',76.98) INSERT INTO students_info(Roll_No, StudName, DateOfJoining, last_exam_Percent) VALUES(4,'Smith','2021-01-06',64.86)APPLY BATCH;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | John
2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
4 | 2021-01-05 18:30:00.000000+0000 | 64.86 | Smith

(3 rows)
cqlsh:students>
cqlsh:students> INSERT INTO students_info(Roll_No, StudName, DateOfJoining, last_exam_Percent) VALUES(3,'Iyer','2021-01-07',76.98)
...;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | John
2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
4 | 2021-01-05 18:30:00.000000+0000 | 64.86 | Smith
3 | 2021-01-06 18:30:00.000000+0000 | 76.98 | Iyer

(4 rows)
cqlsh:students> UPDATE TABLE Students_info SET studname='John Doe' WHERE Roll_No = 4;
SyntaxException: line 1:7: no viable alternative at input 'TABLE' (UPDATE [TABLE]...)
cqlsh:students> UPDATE Students_info SET studname='John Doe' WHERE Roll_No = 4;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | John
2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
4 | 2021-01-05 18:30:00.000000+0000 | 64.86 | John Doe
3 | 2021-01-06 18:30:00.000000+0000 | 76.98 | Iyer

(4 rows)
cqlsh:students>
?          CAPTURE  CONSISTENCY  DEBUG  DESCRIBE  GRANT  LIST  REVOKE  SHOW  TRUNCATE  exit
ALTER      CLEAR        COPY         DELETE  DROP      HELP   LOGIN  SELECT  SOURCE  UPDATE    quit
BEGIN      CLS         CREATE       DESC   EXPLAIN   INSERT SERIAL  TRACING  USE
cqlsh:students> SELECT Roll_No as "USN" from Students_info;
```

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```
cqlsh:students> SELECT Roll_No as "USN" from Students_info;

USN
----
  1
  2
  4
  3

(4 rows)
cqlsh:students> ?

Documented shell commands:
=====
CAPTURE CLS      COPY DESCRIBE EXPAND LOGIN  SERIAL  SOURCE  UNICODE
CLEAR   CONSISTENCY DESC  EXIT      HELP    PAGING  SHOW   TRACING

CQL help topics:
=====
AGGREGATES      CREATE_KEYSPACE      DROP_TRIGGER      TEXT
ALTER_KEYSPACE  CREATE_MATERIALIZED_VIEW DROP_TYPE          TIME
ALTER_MATERIALIZED_VIEW CREATE_ROLE           DROP_USER          TIMESTAMP
ALTER_TABLE      CREATE_TABLE          FUNCTIONS          TRUNCATE
ALTER_TYPE       CREATE_TRIGGER        GRANT              TYPES
ALTER_USER       CREATE_TYPE           INSERT             UPDATE
APPLY            CREATE_USER           INSERT_JSON        USE
ASCII            DATE                  INT                UUID
BATCH            DELETE                JSON
BEGIN            DROP_AGGREGATE        KEYWORDS
BLOB             DROP_COLUMNFAMILY    LIST_PERMISSIONS
BOOLEAN          DROP_FUNCTION         LIST_ROLES
COUNTER          DROP_INDEX            LIST_USERS
CREATE_AGGREGATE DROP_KEYSPACE         PERMISSIONS
CREATE_COLUMNFAMILY DROP_MATERIALIZED_VIEW REVOKE
CREATE_FUNCTION  DROP_ROLE             SELECT
CREATE_INDEX     DROP_TABLE            SELECT_JSON

cqlsh:students> SELECT * FROM students_info WHERE Roll_No in (1,2,4);

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
  1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | John
  2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
  4 | 2021-01-05 18:30:00.000000+0000 | 64.86 | John Doe

(3 rows)
```

```
cqlsh:students> SELECT * FROM students_info WHERE StudName = 'John';
[InvalidRequest: Error from server: code=2200 [Invalid query] message="Cannot execute this query as it might involve data filtering and thus may have unpredictable performance. If you want to execute this query despite the performance unpredictability, use ALLOW FILTERING"]
cqlsh:students> CREATE INDEX ON Students_info(StudName);
cqlsh:students> SELECT * FROM students_info WHERE StudName = 'John';

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
  1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | John

(1 rows)
cqlsh:students> SELECT * FROM students_info WHERE StudName = 'Smith';

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
  2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith

(1 rows)
cqlsh:students> UPDATE students_info SET StudName = 'David' WHERE studname = 'John';
[InvalidRequest: Error from server: code=2200 [Invalid query] message="Some partition key parts are missing: roll_no"]
cqlsh:students> UPDATE students_info SET StudName = 'David' WHERE Roll_No = 1;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
  1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | David
  2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
  4 | 2021-01-05 18:30:00.000000+0000 | 64.86 | John Doe
  3 | 2021-01-06 18:30:00.000000+0000 | 76.98 | Iyer

(4 rows)
cqlsh:students> DELETE FROM Students_info WHERE Roll_No = 4;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exam_percent | studname
-----|-----|-----|-----
  1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | David
  2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
  3 | 2021-01-06 18:30:00.000000+0000 | 76.98 | Iyer

(3 rows)
cqlsh:students> DELETE last_exam_percent FROM students_info WHERE Roll_no = 3;
```

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```
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | David
2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
3 | 2021-01-06 18:30:00.000000+0000 | 76.98 | Iyer
(3 rows)

cqlsh:students> DELETE last_exan_percent FROM students_info WHERE Roll_no = 3;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | David
2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
3 | 2021-01-06 18:30:00.000000+0000 | null | Iyer
(3 rows)

cqlsh:students> UPDATE students_info SET last_exan_percent = 85.16 WHERE Roll_no = 3;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | last_exan_percent | studname
-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | 89.98 | David
2 | 2021-01-24 18:30:00.000000+0000 | 97.98 | Smith
3 | 2021-01-06 18:30:00.000000+0000 | 85.16 | Iyer
(3 rows)

cqlsh:students> ALTER TABLE Students_info ADD hobbies set<text>;
cqlsh:students> DESCRIBE TABLE students_info;

CREATE TABLE students.students_info (
  roll_no int PRIMARY KEY,
  dateofjoining timestamp,
  hobbies set<text>,
  last_exan_percent double,
  studname text
) WITH bloom_filter_fp_chance = 0.01
AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
AND comment = ''
AND compaction = {'class': 'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold': '32', 'min_threshold': '4'}
AND compression = {'chunk_length_in_kb': '64', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
AND crc_check_chance = 1.0
AND dclocal_read_repair_chance = 0.1
AND default_time_to_live = 0

cqlsh:students> UPDATE students_info SET language=['Hindi,English'] WHERE Roll_no=1;
SyntaxException: line 1:133 no viable alternative at input '+' (UPDATE students_info SET language=+)...
cqlsh:students> UPDATE students_info SET language=language+['Hindi,English'] WHERE Roll_no=1;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | hobbies | language | last_exan_percent | studname
-----|-----|-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | {'Chess,Cricket'} | ['Hindi,English'] | 89.98 | David
2 | 2021-01-24 18:30:00.000000+0000 | {'Football,Reading'} | null | 97.98 | Smith
3 | 2021-01-06 18:30:00.000000+0000 | {'Hockey,Travelling'} | null | 85.16 | Iyer
(3 rows)

cqlsh:students> UPDATE students_info SET language=language+['Kannada,Marathi'] WHERE Roll_no=2;
cqlsh:students> UPDATE students_info SET language=language+['Kannada,English,French'] WHERE Roll_no=3;
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | hobbies | language | last_exan_percent | studname
-----|-----|-----|-----|-----|-----
1 | 2021-03-24 18:30:00.000000+0000 | {'Chess,Cricket'} | ['Hindi,English'] | 89.98 | David
2 | 2021-01-24 18:30:00.000000+0000 | {'Football,Reading'} | ['Kannada,Marathi'] | 97.98 | Smith
3 | 2021-01-06 18:30:00.000000+0000 | {'Hockey,Travelling'} | ['Kannada,English,French'] | 85.16 | Iyer
(3 rows)

cqlsh:students> CREATE TABLE library_book(counter_value counter, book_name varchar,stud_name varchar, PRIMARY KEY(book_name,stud_name));
cqlsh:students> DESCRIBE library_book;

CREATE TABLE students.library_book (
  book_name text,
  stud_name text,
  counter_value counter,
  PRIMARY KEY (book_name, stud_name)
) WITH CLUSTERING ORDER BY (stud_name ASC)
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.SizeTieredCompactionStrategy', 'max_threshold': '32', 'min_threshold': '4'}
AND compression = {'chunk_length_in_kb': '64', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
AND crc_check_chance = 1.0
AND dclocal_read_repair_chance = 0.1
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_chance = 0.0
AND speculative_retry = '99PERCENTILE'
```

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```
cqlsh:students> INSERT INTO library_book(counter_value, book_name, stud_name) VALUES(0, 'BDA', 'John');
InvalidRequest: Error from server: code=2200 [Invalid query] message="INSERT statements are not allowed on counter tables, use UPDATE instead"
cqlsh:students> UPDATE library_book SET counter_value=counter_value+1 WHERE book_name='BDA' AND stud_name='John';
cqlsh:students> SELECT * FROM library_book;

book_name | stud_name | counter_value
-----+-----+-----
BDA       | John     | 1

(1 rows)
cqlsh:students> CREATE TABLE userlogin(userid int PRIMARY KEY, password text);
cqlsh:students> DESCRIBE TABLE userlogin;

CREATE TABLE students.userlogin (
  userid int PRIMARY KEY,
  password text
) WITH bloom_filter_fp_chance = 0.01
AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
AND comment = ''
AND compaction = {'class': 'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy', 'max_threshold': '32', 'min_threshold': '4'}
AND compression = {'chunk_length_in_kb': '64', 'class': 'org.apache.cassandra.io.compress.LZ4Compressor'}
AND crc_check_chance = 1.0
AND dclocal_read_repair_chance = 0.1
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_chance = 0.0
AND speculative_retry = '99PERCENTILE';

cqlsh:students> INSERT INTO userlogin(userid, password) VALUES(1,'infi') USING TTL 30;
cqlsh:students> SELECT * FROM userlogin;

userid | password
-----+-----
1      | infi

(1 rows)
cqlsh:students> SELECT TTL(password) FROM userlogin WHERE userid = 1;

ttl(password)
-----
(0 rows)
```

```
cqlsh:students> INSERT INTO userlogin(userid, password) VALUES(1,'infi') USING TTL 30;
cqlsh:students> SELECT * FROM userlogin;

userid | password
-----+-----
1      | infi

(1 rows)
cqlsh:students> SELECT TTL(password) FROM userlogin WHERE userid = 1;

ttl(password)
-----
(0 rows)
cqlsh:students> SELECT * FROM userlogin;

userid | password
-----+-----
(0 rows)
cqlsh:students> SELECT * FROM students_info;

roll_no | dateofjoining | hobbies | language | last_exam_percent | studname
-----+-----+-----+-----+-----+-----
1 | 2021-03-24 18:30:00.000000+0000 | {'Chess,Cricket'} | ['Hindi,English'] | 89.98 | David
2 | 2021-01-24 18:30:00.000000+0000 | {'Football,Reading'} | ['Kannada,Marathi'] | 97.98 | Smith
3 | 2021-01-06 18:30:00.000000+0000 | {'Hockey,Travelling'} | ['Kannada,English,French'] | 85.16 | Iyer

(3 rows)
```

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Code:

```
bmsce@bmsce-Precision-T1700:~$ cd cassandra/apache-cassandra-3.11.0/  
bin
```

```
bmsce@bmsce-Precision-T1700:~/cassandra/apache-cassandra-3.11.0/  
bin$ ./cqlsh
```

```
Connected to Test Cluster at 127.0.0.1:9042.
```

```
[cqlsh 5.0.1 | Cassandra 3.11.4 | CQL spec 3.4.4 | Native protocol v4]
```

```
Use HELP for help.
```

```
cqlsh> DESCRIBE KEYSPACES;
```

```
system_schema system system_distributed system_traces  
system_auth student employee
```

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

```
students system_auth student employee  
system_schema system system_distributed system_traces
```

```
cqlsh> USE students;
```

```
cqlsh:students> CREATE TABLE students_info (Roll_No int PRIMARY  
KEY, StudName text, DateOfJoining timestamp, last_exam_Percent  
double);
```

```
cqlsh:students> DESCRIBE TABLES;
```

```
students_info
```

```
cqlsh:students> DESCRIBE TABLE students_info;
```

```
CREATE TABLE students.students_info (
```

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```
roll_no int PRIMARY KEY,
dateofjoining timestamp,
last_exam_percent double,
studname text
) WITH bloom_filter_fp_chance = 0.01
  AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
  AND comment = "
               AND compaction = {'class':
'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy',
'max_threshold': '32', 'min_threshold': '4'}
  AND compression = {'chunk_length_in_kb': '64', 'class':
'org.apache.cassandra.io.compress.LZ4Compressor'}
  AND crc_check_chance = 1.0
  AND dclocal_read_repair_chance = 0.1
  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_chance = 0.0
  AND speculative_retry = '99PERCENTILE';

cqlsh:students> BEGIN BATCH
    ... INSERT INTO students_info(Roll_No, StudName, DateOfJoining,
last_exam_Percent) VALUES(1,'John','2021-03-25',89.98)
    ... INSERT INTO students_info(Roll_No, StudName, DateOfJoining,
last_exam_Percent) VALUES(2,'JohnDoe','2021-01-25',97.98)
    ... INSERT INTO students_info(Roll_No, StudName, DateOfJoining,
last_exam_Percent) VALUES(2,'Smith','2021-01-07',76.98)
    ... INSERT INTO students_info(Roll_No, StudName, DateOfJoining,
last_exam_Percent) VALUES(4,'Smith','2021-01-06',64.86)
```

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```
... APPLY BATCH
```

```
... APPLY BATCH;
```

```
SyntaxException: line 7:0 mismatched input 'APPLY' expecting EOF  
(...,'2021-01-06',64.86)APPLY BATCH[APPLY]...)
```

```
cqlsh:students> BEGIN BATCH INSERT INTO students_info(Roll_No,  
StudName, DateOfJoining, last_exam_Percent) VALUES(1,'John','2021-03-  
25',89.98) INSERT INTO students_info(Roll_No, StudName, DateOfJoining,  
last_exam_Percent) VALUES(2,'JohnDoe','2021-01-25',97.98) INSERT INTO  
students_info(Roll_No, StudName, DateOfJoining, last_exam_Percent)  
VALUES(2,'Smith','2021-01-07',76.98) INSERT INTO students_info(Roll_No,  
StudName, DateOfJoining, last_exam_Percent) VALUES(4,'Smith','2021-01-  
06',64.86)APPLY BATCH;
```

```
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	John
2	2021-01-24 18:30:00.000000+0000	97.98	Smith
4	2021-01-05 18:30:00.000000+0000	64.86	Smith

(3 rows)

```
cqlsh:students>
```

```
cqlsh:students> INSERT INTO students_info(Roll_No, StudName,  
DateOfJoining, last_exam_Percent) VALUES(3,'Iyer','2021-01-07',76.98)
```

```
...;
```

```
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	John
2	2021-01-24 18:30:00.000000+0000	97.98	Smith

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4	2021-01-05 18:30:00.000000+0000	64.86	Smith
3	2021-01-06 18:30:00.000000+0000	76.98	Iyer

(4 rows)

```
cqlsh:students> UPDATE TABLE Students_info SET studname='John Doe'
WHERE Roll_No = 4;
```

SyntaxException: line 1:7 no viable alternative at input 'TABLE' (UPDATE [TABLE]...)

```
cqlsh:students> UPDATE Students_info SET studname='John Doe' WHERE
Roll_No = 4;
```

```
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	John
2	2021-01-24 18:30:00.000000+0000	97.98	Smith
4	2021-01-05 18:30:00.000000+0000	64.86	John Doe
3	2021-01-06 18:30:00.000000+0000	76.98	Iyer

(4 rows)

```
cqlsh:students>
```

?	CAPTURE	CONSISTENCY	DEBUG	DESCRIBE	GRANT
LIST	REVOKE	SHOW	TRUNCATE	exit	
ALTER	CLEAR	COPY	DELETE	DROP	HELP
SELECT	SOURCE	UPDATE	quit		LOGIN
BEGIN	CLS	CREATE	DESC	EXPAND	INSERT
PAGING	SERIAL	TRACING	USE		

```
cqlsh:students> SELECT Roll_No as "USN" from Students_info;
```

USN

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1
2
4
3

(4 rows)

cqlsh:students> ?

Documented shell commands:

=====

CAPTURE CLS COPY DESCRIBE EXPAND LOGIN SERIAL
SOURCE UNICODE
CLEAR CONSISTENCY DESC EXIT HELP PAGING SHOW
TRACING

CQL help topics:

=====

AGGREGATES CREATE_KEYSPACE DROP_TRIGGER TEXT
ALTER_KEYSPACE CREATE_MATERIALIZED_VIEW DROP_TYPE
TIME
ALTER_MATERIALIZED_VIEW CREATE_ROLE DROP_USER
TIMESTAMP
ALTER_TABLE CREATE_TABLE FUNCTIONS
TRUNCATE
ALTER_TYPE CREATE_TRIGGER GRANT TYPES
ALTER_USER CREATE_TYPE INSERT UPDATE
APPLY CREATE_USER INSERT_JSON USE
ASCII DATE INT UUID
BATCH DELETE JSON
BEGIN DROP_AGGREGATE KEYWORDS
BLOB DROP_COLUMNFAMILY LIST_PERMISSIONS

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BOOLEAN	DROP_FUNCTION	LIST_ROLES
COUNTER	DROP_INDEX	LIST_USERS
CREATE_AGGREGATE	DROP_KEYSPACE	PERMISSIONS
CREATE_COLUMNFAMILY	DROP_MATERIALIZED_VIEW	REVOKE
CREATE_FUNCTION	DROP_ROLE	SELECT
CREATE_INDEX	DROP_TABLE	SELECT_JSON

```
cqlsh:students> SELECT * FROM students_info WHERE Roll_No in (1,2,4);
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	John
2	2021-01-24 18:30:00.000000+0000	97.98	Smith
4	2021-01-05 18:30:00.000000+0000	64.86	John Doe

(3 rows)

```
cqlsh:students> SELECT * FROM students_info WHERE StudName = 'John';
```

InvalidRequest: Error from server: code=2200 [Invalid query] message="Cannot execute this query as it might involve data filtering and thus may have unpredictable performance. If you want to execute this query despite the performance unpredictability, use ALLOW FILTERING"

```
cqlsh:students> CREATE INDEX ON Students_info(StudName);
```

```
cqlsh:students> SELECT * FROM students_info WHERE StudName = 'John';
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	John

(1 rows)

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```
cqlsh:students> SELECT * FROM students_info WHERE StudName = 'Smith';
```

roll_no	dateofjoining	last_exam_percent	studname
2	2021-01-24 18:30:00.000000+0000	97.98	Smith

(1 rows)

```
cqlsh:students> UPDATE students_info SET Studname = 'David' WHERE studname = 'John';
```

InvalidRequest: Error from server: code=2200 [Invalid query] message="Some partition key parts are missing: roll_no"

```
cqlsh:students> UPDATE students_info SET Studname = 'David' WHERE Roll_No = 1;
```

```
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	David
2	2021-01-24 18:30:00.000000+0000	97.98	Smith
4	2021-01-05 18:30:00.000000+0000	64.86	John Doe
3	2021-01-06 18:30:00.000000+0000	76.98	Iyer

(4 rows)

```
cqlsh:students> DELETE FROM Students_info WHERE Roll_No = 4;
```

```
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	David
2	2021-01-24 18:30:00.000000+0000	97.98	Smith

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```
3 | 2021-01-06 18:30:00.000000+0000 |      76.98 | Iyer
```

(3 rows)

```
cqlsh:students> DELETE last_exam_percent FROM students_info WHERE
Roll_no = 3;
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	David
2	2021-01-24 18:30:00.000000+0000	97.98	Smith
3	2021-01-06 18:30:00.000000+0000	null	Iyer

(3 rows)

```
cqlsh:students> UPDATE students_info SET last_exam_percent = 85.16
WHERE Roll_No = 3;
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	89.98	David
2	2021-01-24 18:30:00.000000+0000	97.98	Smith
3	2021-01-06 18:30:00.000000+0000	85.16	Iyer

(3 rows)

```
cqlsh:students> ALTER TABLE Students_info ADD hobbies set<text>;
cqlsh:students> DESCRIBE TABLE students_info;
```

```
CREATE TABLE students.students_info (
  roll_no int PRIMARY KEY,
  dateofjoining timestamp,
```

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```
hobbies set<text>,
last_exam_percent double,
studname text
) WITH bloom_filter_fp_chance = 0.01
  AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
  AND comment = "
              AND compaction = {'class':
'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy',
'max_threshold': '32', 'min_threshold': '4'}
  AND compression = {'chunk_length_in_kb': '64', 'class':
'org.apache.cassandra.io.compress.LZ4Compressor'}
  AND crc_check_chance = 1.0
  AND dclocal_read_repair_chance = 0.1
  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_chance = 0.0
  AND speculative_retry = '99PERCENTILE';
CREATE INDEX students_info_studname_idx ON students.students_info
(studname);
```

```
cqlsh:students> UPDATE students_info SET hobbies=hobbies+
{'Chess,Cricket'} WHERE Roll_No=1;
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	hobbies	last_exam_percent	studname
-----+	-----+	-----+	-----+	-----

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1	2021-03-24 18:30:00.000000+0000	{'Chess,Cricket'}	89.98	
David				
2	2021-01-24 18:30:00.000000+0000	null	97.98	Smith
3	2021-01-06 18:30:00.000000+0000	null	85.16	Iyer

(3 rows)

```
cqlsh:students> UPDATE students_info SET hobbies=hobbies+
{'Hockey,Travelling'} WHERE Roll_No=3;
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	hobbies	last_exam_percent	
studname				
-----+-----+-----+-----+-----				
1	2021-03-24 18:30:00.000000+0000	{'Chess,Cricket'}	89.98	
David				
2	2021-01-24 18:30:00.000000+0000	null	97.98	
Smith				
3	2021-01-06 18:30:00.000000+0000	{'Hockey,Travelling'}	85.16	
Iyer				

(3 rows)

```
cqlsh:students> UPDATE students_info SET hobbies=hobbies+
{'Football,Reading'} WHERE Roll_No=2;
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	hobbies	last_exam_percent	
studname				
-----+-----+-----+-----+-----				
1	2021-03-24 18:30:00.000000+0000	{'Chess,Cricket'}	89.98	
David				

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2	2021-01-24 18:30:00.000000+0000	{'Football,Reading'}		97.98
	Smith			
3	2021-01-06 18:30:00.000000+0000	{'Hockey,Travelling'}		85.16
	Iyer			

(3 rows)

```
cqlsh:students> ALTER TABLE students_info ADD language list<text>;  
cqlsh:students> DESCRIBE TABLE students_info;
```

```
CREATE TABLE students.students_info (  
    roll_no int PRIMARY KEY,  
    dateofjoining timestamp,  
    hobbies set<text>,  
    language list<text>,  
    last_exam_percent double,  
    studname text  
) WITH bloom_filter_fp_chance = 0.01  
    AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}  
    AND comment = "  
                                AND compaction = {'class':  
'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy',  
'max_threshold': '32', 'min_threshold': '4'}  
    AND compression = {'chunk_length_in_kb': '64', 'class':  
'org.apache.cassandra.io.compress.LZ4Compressor'}  
    AND crc_check_chance = 1.0  
    AND dclocal_read_repair_chance = 0.1  
    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
```

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```
AND read_repair_chance = 0.0
AND speculative_retry = '99PERCENTILE';
CREATE INDEX students_info_studname_idx ON students.students_info
(studname);
```

```
cqlsh:students> UPDATE students_info SET language=['Hindi,English']
WHERE Roll_no=1;
```

SyntaxException: line 1:33 no viable alternative at input '+' (UPDATE students_info SET language+[+]...)

```
cqlsh:students> UPDATE students_info SET language=language+
['Hindi,English'] WHERE Roll_no=1;
```

```
cqlsh:students> SELECT * FROM students_info;
```

roll_no	dateofjoining	hobbies	language	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	{'Chess,Cricket'}	['Hindi,English']	89.98	David
2	2021-01-24 18:30:00.000000+0000	{'Football,Reading'}	null	97.98	Smith
3	2021-01-06 18:30:00.000000+0000	{'Hockey,Travelling'}	null	85.16	Iyer

(3 rows)

```
cqlsh:students> UPDATE students_info SET language=language+
['Kannada,Marathi'] WHERE Roll_no=2;
```

```
cqlsh:students> UPDATE students_info SET language=language+
['Kannada,English,French'] WHERE Roll_no=3;
```

```
cqlsh:students> SELECT * FROM students_info;
```


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roll_no	dateofjoining	hobbies	language	last_exam_percent	studname
1	2021-03-24 18:30:00.000000+0000	{'Chess,Cricket'}	['Hindi,English']	89.98	David
2	2021-01-24 18:30:00.000000+0000	{'Football,Reading'}	['Kannada,Marathi']	97.98	Smith
3	2021-01-06 18:30:00.000000+0000	{'Hockey,Travelling'}	['Kannada,English,French']	85.16	Iyer

(3 rows)

```
cqlsh:students> CREATE TABLE library_book(counter_value counter,
book_name          varchar,stud_name          varchar,          PRIMARY
KEY(book_name,stud_name));
cqlsh:students> DESCRIBE library_book;
```

```
CREATE TABLE students.library_book (
    book_name text,
    stud_name text,
    counter_value counter,
    PRIMARY KEY (book_name, stud_name)
) WITH CLUSTERING ORDER BY (stud_name ASC)
    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.SizeTieredCompactionStrategy',
'max_threshold': '32', 'min_threshold': '4'}
    AND compression = {'chunk_length_in_kb': '64', 'class':
'org.apache.cassandra.io.compress.LZ4Compressor'}
```

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```
AND crc_check_chance = 1.0
AND dclocal_read_repair_chance = 0.1
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_chance = 0.0
AND speculative_retry = '99PERCENTILE';
```

```
cqlsh:students> INSERT INTO library_book(counter_value, book_name,
stud_name) VALUES(0, 'BDA','John');
```

```
InvalidRequest: Error from server: code=2200 [Invalid query]
message="INSERT statements are not allowed on counter tables, use
UPDATE instead"
```

```
cqlsh:students> UPDATE library_book SET
counter_value=counter_value+1 WHERE book_name='BDA' AND
stud_name='John';
```

```
cqlsh:students> SELECT * FROM library_book;
```

```
book_name | stud_name | counter_value
-----+-----+-----
      BDA |   John   |           1
```

(1 rows)

```
cqlsh:students> CREATE TABLE userlogin(userid int PRIMARY KEY,
password text);
```

```
cqlsh:students> DESCRIBE TABLE userlogin;
```

```
CREATE TABLE students.userlogin (
  userid int PRIMARY KEY,
```

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```
password text
) WITH bloom_filter_fp_chance = 0.01
  AND caching = {'keys': 'ALL', 'rows_per_partition': 'NONE'}
  AND comment = "
      AND compaction = {'class':
'org.apache.cassandra.db.compaction.SizeTieredCompactionStrategy',
'max_threshold': '32', 'min_threshold': '4'}
      AND compression = {'chunk_length_in_kb': '64', 'class':
'org.apache.cassandra.io.compress.LZ4Compressor'}
  AND crc_check_chance = 1.0
  AND dclocal_read_repair_chance = 0.1
  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_chance = 0.0
  AND speculative_retry = '99PERCENTILE';
```

```
cqlsh:students> INSERT INTO userlogin(userid, password)
VALUES(1,'infi') USING TTL 30;
cqlsh:students> SELECT * FROM userlogin;
```

```
userid | password
-----+-----
1 | infi
```

(1 rows)

```
cqlsh:students> SELECT TTL(password) FROM userlogin WHERE userid =
1;
```

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```
ttl(password)
```

```
-----
```

(0 rows)

```
cqlsh:students> SELECT * FROM userlogin;
```

```
userid | password
```

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

(0 rows)

```
cqlsh:students> SELECT * FROM students_info;
```

```
roll_no | dateofjoining          | hobbies          | language          |  
last_exam_percent | studname
```

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

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

```
1 | 2021-03-24 18:30:00.000000+0000 | {'Chess,Cricket'} |  
['Hindi,English'] | 89.98 | David  
2 | 2021-01-24 18:30:00.000000+0000 | {'Football,Reading'} |  
['Kannada,Marathi'] | 97.98 | Smith  
3 | 2021-01-06 18:30:00.000000+0000 | {'Hockey,Travelling'} |  
['Kannada,English,French'] | 85.16 | Iyer
```

(3 rows)