Querying

1.

SELECT * FROM Restaurants limit 10;

d borough bui	ldingnum					phone
0786914 STATEN ISLAND	1465			American	BOSTON MARKET	718815119
FOREST AVENUE 10302	1100			niiei ican	BOSTON MERKAET	1100101110
0366162 QUEENS ATLANTIC AVENUE 11418	11909			American	LENIHAN'S SALOON	7188469770
1692194 MANHATTAN WEST 46 STREET 10036	360			Thai	BANGKOK HOUSE	212541594
1430956 BROOKLYN TILDEN AVENUE 11226	2225			Caribbean	TJ'S TASTY CORNER	718484478
1395531 QUEENS ROOSEVELT AVENUE 11368	126			American	NATHAN'S HOT DOGS	718595810
00005384 STATEN ISLAND PORT RICHMOND AVE 10302	271			Chinese	YUMMY YUMMY	718442588
00005858 BROOKLYN 11219	6005			Chinese	KING'S KITCHEN	718853138
0962612 MANHATTAN WEST 75 STREET 10023	164			Italian	CESCA	212787630
0995404 MANHATTAN BROADWAY 10033	4195	Latin (Cuban, Dominican,	Puerto Rican,	South & Central American)	EL GUANACO RESTAURANT & PUPUSERIA	212795540
0368763 MANHATTAN EAST 54 STREET 10022	111			American	THE BROOK	2127537020

2. SELECT name FROM Restaurants;

```
LENIHAN'S SALOON
BANGKOK HOUSE
                                                                                                                                 CRESCENT COFFEE SH
LA ROYALE BEER BURGER HOU
                                                                                                                                                   FAY DA BAKER
HILLTOP PERK DEL
CONNECTICUT MUFFI
                           EL GUANACO RESTAURANT & PUPUSERIA
                                                                                                                                      KENNEDY CHICKEN AND
                                         THE BROOK
LEO'S DELI & GRILL
KAEDE JAPANESE RESTAURANT
JOHNS PIZZA
RICE & BEANS LECHONERA
INDIAN EXPRESS
DOUBLETREE GREENHOUSE 36
                                                                                                                                                  GREENSTREETS
BLUE BOTTLE
                                          TK VILLAGE BAKERY CON
                                                                                                   DAEJI DAEJI KOREAN BB
LUISA CHIMICHURR
SCALINI FEDEL
GREEN APPLE FOOD COURT /LATIN MEXICAN GRIL
                                  NEW CHINA RESTAURAT WANG
JIN SUSHI &
JADE ASIAN EXPRESS
TIELLA RESTAU
                                                                                                                        AUNT BELLA'S REST OF LITTLE
                                                                                                                                    BROOKLYN BRIDGE GARDEN
HUMMUS KIT
                                                                                                                                      KELLY COMMONS MARKETE
PICANTERIA EL BOTE
       FARMERS PIZZERIA
ORGANIC FOOD, NATURAL JUICES AND COFFEE SHOP
                                                                                                                                      BEDFORD CAFE & RES
COMMUNITY DINING HALL AT MCKEON HALL FORDAM UNIV
CROWN FRIED CHICKEN
BROOKLYN CAFE 1
                                                                                                                                           SIX BLOCKS BAKERY
FLUSHING BAN
```

```
JUST SALAD
MATUREWORKS
SUBWAY
TOUT VA BIEN
FAME DINER
RESTAURANT ASSOCIATES LLC
NAAN & GRILL
YAKITORI TOTTO
NEW JING HUI RESTAURANT
TERREMOTO COFFEE
THE GUMBO BRO
CIBO EXPRESS GOURMET MARKET
LAZY POINT
SECRETS GENTLEMAN'S CLUB
BURGER KING, POPEYES LOUISIANA KITCHEN
BETWEEN THE BREAD
Sicilia Pizzeria
DAYEY'S ICE CREAM
THE LITTLE OWL
GARDEN CAFE
BEST ITALIAN PIZZA
```

3.

SELECT name, borough FROM Restaurants where id=41569764;

```
cqlsh:restaurantsny> SELECT name, borough FROM Restaurants where id=41569764;

name | borough
------
BACCHUS | BROOKLYN
```

4

SELECT count(*) FROM Restaurants where cuisinetype='French';

```
cqlsh:restaurantsny> SELECT count(*) FROM Restaurants where cuisinetype='French';

count

351
(1 rows)
```

5

SELECT count(*) FROM Inspections where grade='C';

```
cqlsh:restaurantsny> SELECT count(*) FROM Inspections where grade='C';

count

1683

(1 rows)
```

6.

SELECT count(*) FROM Inspections where grade<'C' allow filtering;

```
cqlsh:restaurantsny> SELECT count(*) FROM Inspections where grade<'C' allow filtering;

count

77602

(1 rows)
```

7.

SELECT inspectiondate, grade FROM Inspections where idrestaurant=41569764;

8.

SELECT name FROM Restaurants where cuisinetype='French';



9. SELECT name FROM Restaurants where borough='BROOKLYN' ALLOW FILTERING;

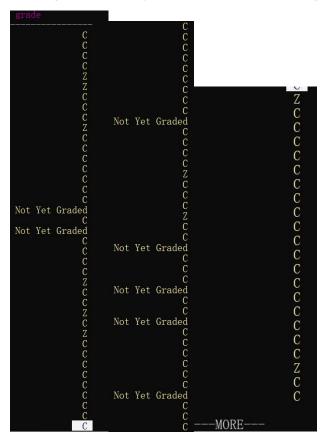
```
TJ'S TASTY CORNER
KING'S KITCHEN
LEO'S DELI & GRILL
JIN SUSHI & THAI
CROWN FRIED CHICKEN
BROOKLYN CAFE 1
CRESCENT COFFEE SHOP
LA ROYALE BEER BURGER HOUSE
CONNECTICUT MUFFIN
GREENSTREETS SALADS
THE TOPAZ
                                                                                          SAPPORO JAPANE
                                                                                     NEW HONG KONG RESTAURANT II
   BROOKLYN BRIDGE GARDEN BAI
                                                                                                                                                                                 CHEZ MACOULE RESTAU
FOOTPRINTS CAFE EXP
                                                                                                                                                                              DUNKIN'
KINARA INDIAN RES
          SCHNITZI SCHNITZEL BAR
INDIGO MURPHY'S
EDDIE JR'S SPORT LOUNGE
                                                                                                                                                                                            TEPANGO
                                                                                                EL PASO MEXICAN
EL NUEVO BARZOLA RE
PURITAN RE
EL CHARRO
                                                         VETERANS OF FOREIGN WARS POST #107 CANTER
                                                                                                                                                                               983 BUSHWICK LIVING
                 HOLIDAY INN EX
                                                                                                                                                                                           IKHOFI CAFE
THE VALE
YOSSIS GLATT SUSHI
                                                                                COURT STREET GROCERS
                  WHITE CASTLE
BUBBLE TEA- B. B. Q
RED SUN RESTAURANT
                                                                                                  ANARKALI INDIAN
```

10.
SELECT grade,score FROM Inspections where idrestaurant=41569764 and score>=10 ALLOW FILTERING;

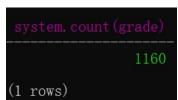
grade	score
nul1	19
A	10
(2 rows)	

11.

SELECT grade FROM Inspections where score>30 and grade>' ' ALLOW FILTERING;



12. SELECT count(grade) FROM Inspections where score>30 and grade>' ' ALLOW FILTERING;



13.

SELECT name FROM Restaurants where token(id)>0;



14.

SELECT count(*) FROM Restaurants where token(id)>0;

SELECT count(*) FROM Restaurants where token(id)<0;

```
cqlsh:restaurantsny> SELECT count(*) FROM Restaurants where token(id)>0;

count

12825

(1 rows)
cqlsh:restaurantsny> SELECT count(*) FROM Restaurants where token(id)<0;

count

12799

(1 rows)
```

Rows are evenly distributed in different Partition, hash function plays a good position.

Additional queries

1.

```
CREATE INDEX ix_Restaurant_borough ON Restaurants (Borough); SELECT Name FROM Restaurants WHERE borough='BROOKLYN';
```



SELECT count(*) FROM Restaurants WHERE borough='BROOKLYN';

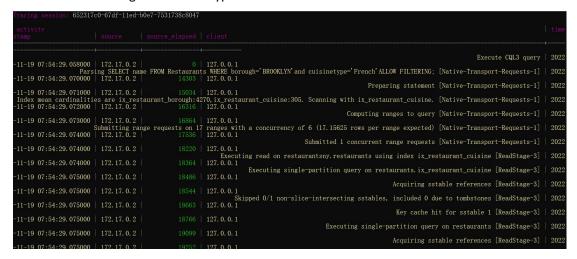


2.

SELECT name FROM Restaurants WHERE borough='BROOKLYN' and cuisinetype='French' ALLOW FILTERING;

```
cafe paulette
                                 BRASSERIE SEOUL
                                         BAR OMAR
THE FOX AND
                                   JOLIE CANTINA
                                           WITLOF
                                         LE GAMIN
                         JULIETTE
LE P'TIT PARIS BISTRO
 BREUKELEN
                                    FRENCH LOUIE
                                  CHAGALL BISTRO
 ART HOUSE R
                                          STATION
 MANILA SOCIAL
                            PATES el TRADITIONS
                              LE PAIN QUOTIDIEN
                                        LE GARAGE
               THE PARK BENCH CAFE & CREPERIE
                             THE BROOKLYN LABEL
                                        TALON BAR
                                     SANTOS ANNE
                                        CAFE DADA
               (56 rows)
```

3. Both index on borough and cuisinetype are used.



4.

No, Cassandra does not support joins (NoSQL heritage).

2.2

First access pattern

1

CREATE TYPE restaurants(Name VARCHAR, borough VARCHAR, BuildingNum VARCHAR, Street VARCHAR, ZipCode INT, Phone text, CuisineType VARCHAR);

CREATE TABLE InspectionsRestaurantsNY(idRestaurant INT,restaurant frozen<restaurants>,InspectionDate date, ViolationCode VARCHAR, ViolationDescription VARCHAR, CriticalFlag VARCHAR, Score INT, GRADE VARCHAR,primary key(idRestaurant, InspectionDate));

2.

INSERT INTO InspectionsRestaurantsNY JSON '{"idRestaurant":1111, "restaurant": {"name": "IHOP", "borough": "BRONX", "buildingnum": "5655", "street": "BROADWAY", "zipcode":"10463", "phone":"7185494565", "cuisineType": "American"}, "inspectionDate": "2016-08-16", "violationCode": "04L", "violationDescription": "testtest", "criticalFlag": "Critical", "score":15, "grade": ""}';

```
cqlsh:restaurantsny> SELECT COUNT(*) from InspectionsRestaurantsNY;
count
______
1
(1 rows)
```

3.

```
cqlsh:restaurantsny> SELECT COUNT(*) from InspectionsRestaurantsNY;

count

150882
(1 rows)
```

4.
CREATE INDEX ix_Inspections_Restaurant ON InspectionsRestaurantsNY(Grade);
SELECT * FROM InspectionsRestaurantsNY WHERE Grade='A' GROUP BY idRestaurant;



5. SELECT idRestaurant,restaurant.name,COUNT(*) FROM InspectionsRestaurantsNY GROUP BY idRestaurant;



Second access pattern

1

No, Frozen point means point type is frozen, we can't partially provide point value, we have to provide the full value of point.

2.

CREATE TABLE InspectionsRestaurantsMap(id INT, Name VARCHAR, borough VARCHAR, BuildingNum VARCHAR, Street VARCHAR, ZipCode INT, Phone text, CuisineType VARCHAR, Inspections map<VARCHAR, frozen<Inspection>>, primary key(id));

4.

INSERT INTO InspectionsRestaurantsMap JSON '{"id":50041578,"name": "IHOP", "borough": "BRONX", "buildingnum": "5655", "street": "BROADWAY", "zipcode":"10463", "phone":"7185494565", "cuisineType": "American", "Inspections":{"BRONX":{"inspectionDate": "2016-08-16", "violationCode": "04L", "violationDescription": "Evidence of mice or live mice present or non-food areas.", "criticalFlag": "Critical", "score":15, "grade": "A"}}}'; 5.

SELECT * FROM InspectionsRestaurantsMap WHERE inspections contains KEY 'BRONX'ALLOW

FILTERING;

