# CQL Queries

First, we list the different queries of the benchmark. Second, we present the queries applied on non-aggregated data. Finally, we present the queries used to define the aggregates and the analysis queries applied on these aggregates.

# Queries of the Benchmark



# Queries for non-aggregated data

--1

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_station\_sensor\_year.CSV';

SELECT value\_stationDim,value\_sensorDim,value\_timedim,avg(so2)

FROM noagg\_stationDim\_timeDim\_sensorDim

WHERE level\_stationDim='station'

AND level\_sensorDim='sensor'

AND level\_timedim='year'

GROUP BY value\_stationDim,value\_timeDim,value\_sensorDim

ALLOW FILTERING;

CAPTURE OFF;

--2

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_station\_component\_year.CSV'

SELECT value\_stationDim,value\_sensorDim,value\_timedim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='station'

AND level\_sensorDim='component'

AND level\_timedim='year'

GROUP BY value\_stationDim,value\_sensorDim,value\_timeDim

ALLOW FILTERING;

CAPTURE OFF;

--3

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_station\_sensor.CSV'

SELECT value\_stationDim,value\_sensorDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='station'

AND level\_sensorDim='sensor'

AND level\_timedim='alltimeDim'

GROUP BY value\_stationDim,value\_sensorDim

ALLOW FILTERING;

CAPTURE OFF;

--4

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_station\_component.CSV'

SELECT value\_stationDim,value\_sensorDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='station'

AND level\_sensorDim='component'

AND level\_timedim='alltimeDim'

GROUP BY value\_stationDim,value\_sensorDim

ALLOW FILTERING;

CAPTURE OFF;

--5

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_station.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='station'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

--6

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_city\_component.CSV'

SELECT value\_stationDim,value\_sensorDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='city'

AND level\_sensorDim='component'

AND level\_timedim='alltimeDim'

GROUP BY value\_stationDim,value\_sensorDim,value\_timeDim

ALLOW FILTERING;

CAPTURE OFF;

--7

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_city.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='city'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

--8

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_country\_component.CSV'

SELECT value\_stationDim,value\_sensorDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='country'

AND level\_sensorDim='component'

AND level\_timedim='alltimeDim'

GROUP BY value\_stationDim,value\_sensorDim

ALLOW FILTERING;

CAPTURE OFF;

--9

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_country.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='country'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

--10

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_all.CSV'

SELECT avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='allstationDim'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

ALLOW FILTERING;

CAPTURE OFF;

11--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_city\_year.CSV'

SELECT value\_stationDim,value\_timedim,avg(so2)

FROM noagg\_stationDim\_timeDim\_sensorDim

WHERE level\_stationDim='city'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='year'

GROUP BY value\_stationDim,value\_timeDim

ALLOW FILTERING;

CAPTURE OFF;

12--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_country\_year.CSV'

SELECT value\_stationDim,value\_timedim,avg(so2)

FROM noagg\_stationDim\_timeDim\_sensorDim

WHERE level\_stationDim='country'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='year'

GROUP BY value\_stationDim,value\_timeDim

ALLOW FILTERING;

CAPTURE OFF;

13--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition\_year\_station\_sensor.CSV'

SELECT value\_stationDim,value\_sensorDim,value\_timedim,avg(so2)

FROM noagg\_timeDim\_stationDim\_sensorDim

WHERE value\_timeDim in ('http://qweb.cs.aau.dk/airbase/data/year/2006/','http://qweb.cs.aau.dk/airbase/data/year/2007/','http://qweb.cs.aau.dk/airbase/data/year/2008/','http://qweb.cs.aau.dk/airbase/data/year/2009/','http://qweb.cs.aau.dk/airbase/data/year/2010/','http://qweb.cs.aau.dk/airbase/data/year/2011/')

and level\_stationDim='station'

AND level\_sensorDim='sensor'

AND level\_timedim='year'

group by value\_timedim,value\_stationDim,value\_sensorDim

ALLOW FILTERING;

CAPTURE OFF;

14--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition\_station.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='station'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

and value\_stationDim='http://qweb.cs.aau.dk/airbase/data/station/GB0690A\_SCUN/'

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

15--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition2\_station.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='station'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

and value\_stationDim in ('http://qweb.cs.aau.dk/airbase/data/station/GB0690A\_SCUN/','http://qweb.cs.aau.dk/airbase/data/station/GB0917A\_STEW/','http://qweb.cs.aau.dk/airbase/data/station/GB0037R\_LB/')

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

16--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition2\_city.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='city'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

and value\_stationDim='http://qweb.cs.aau.dk/airbase/data/city/LONDON/'

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

17--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition2\_country.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='country'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='alltimeDim'

and value\_stationDim='http://qweb.cs.aau.dk/airbase/data/country/United\_Kingdom/'

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

18--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition\_city\_year.CSV'

SELECT value\_stationDim,value\_timeDim,avg(so2)

FROM noagg\_stationDim\_timeDim\_sensorDim

WHERE level\_stationDim='city'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='year'

and value\_stationDim='http://qweb.cs.aau.dk/airbase/data/city/LONDON/'

and value\_timeDim='http://qweb.cs.aau.dk/airbase/data/year/2010/'

GROUP BY value\_stationDim,value\_timeDim

ALLOW FILTERING;

CAPTURE OFF;

19--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition2\_city\_year.CSV'

SELECT value\_stationDim,value\_timeDim,avg(so2)

FROM noagg\_stationDim\_timeDim\_sensorDim

WHERE level\_stationDim='city'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='year'

and value\_stationDim='http://qweb.cs.aau.dk/airbase/data/city/LONDON/'

and value\_timeDim in ('http://qweb.cs.aau.dk/airbase/data/year/2006/','http://qweb.cs.aau.dk/airbase/data/year/2007/','http://qweb.cs.aau.dk/airbase/data/year/2008/','http://qweb.cs.aau.dk/airbase/data/year/2009/','http://qweb.cs.aau.dk/airbase/data/year/2010/')

GROUP BY value\_stationDim,value\_timeDim

ALLOW FILTERING;

CAPTURE OFF;

20--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition\_city.CSV'

SELECT value\_stationDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='city'

AND level\_sensorDim='allsensorDim'

AND level\_timedim='year'

and value\_stationDim='http://qweb.cs.aau.dk/airbase/data/city/LONDON/'

and value\_timeDim='http://qweb.cs.aau.dk/airbase/data/year/2010/'

GROUP BY value\_stationDim

ALLOW FILTERING;

CAPTURE OFF;

21--

PAGING OFF;TRACING ON;

CAPTURE '/Users/irit/liu/log/db2/cassandra2/createViewTemp/olap\_condition\_station\_component\_year.CSV'

SELECT value\_stationDim,value\_timeDim,value\_sensorDim,avg(so2)

FROM noagg\_stationDim\_sensorDim\_timeDim

WHERE level\_stationDim='station'

AND level\_sensorDim='component'

AND level\_timedim='year'

and value\_stationDim='http://qweb.cs.aau.dk/airbase/data/station/GB0841A\_SCN2/'

and value\_timeDim='http://qweb.cs.aau.dk/airbase/data/year/2010/'

and value\_sensorDim='http://qweb.cs.aau.dk/airbase/data/component/1/'

GROUP BY value\_stationDim,value\_sensorDim,value\_timeDim

ALLOW FILTERING;

CAPTURE OFF;

Due to the complexity of the following queries, they are not implemented in CQL but by a program.

# Queries for aggregated data

## Aggreates creation

PAGING OFF;

-- 1

DROP TABLE IF EXISTS bd1.olap\_station\_sensor\_year;

CREATE TABLE bd1.olap\_station\_sensor\_year(

station TEXT,

sensor TEXT,

year TEXT,

so2 DOUBLE,

PRIMARY KEY(station,sensor,year)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_sensor\_year.CSV';

-- 1

SELECT station,sensor,year,sum(so2)

FROM bd1.station\_sensor\_year

where isOLAP=true

group by station,sensor,year

ALLOW FILTERING;

COPY bd1.olap\_station\_sensor\_year FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_sensor\_year.csv' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

PAGING OFF;

DROP TABLE IF EXISTS bd1.olap\_station\_component\_year;

CREATE TABLE bd1.olap\_station\_component\_year(

station TEXT,

component TEXT,

year TEXT,

so2 DOUBLE,

PRIMARY KEY(station,component,year)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_component\_year.CSV'

-- 2

SELECT station,component,year,sum(so2)

FROM bd1.station\_component\_year

where isOLAP=true

group by station,component,year

ALLOW FILTERING;

COPY bd1.olap\_station\_component\_year FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_component\_year.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

PAGING OFF;

DROP TABLE IF EXISTS bd1.olap\_station\_sensor;

CREATE TABLE bd1.olap\_station\_sensor(

station TEXT,

sensor TEXT,

so2 DOUBLE,

PRIMARY KEY(station,sensor)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_sensor.CSV'

-- 3

SELECT station,sensor,sum(so2)

FROM bd1.station\_sensor\_year

where isOLAP=true

group by station,sensor

ALLOW FILTERING;

COPY bd1.olap\_station\_sensor FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_sensor.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

PAGING OFF;

DROP TABLE IF EXISTS bd1.olap\_station\_component;

CREATE TABLE bd1.olap\_station\_component(

station TEXT,

component TEXT,

so2 DOUBLE,

PRIMARY KEY(station,component)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_component.CSV'

-- 4

SELECT station,component,sum(so2)

FROM bd1.station\_component\_year

where isOLAP=true

group by station,component

ALLOW FILTERING;

COPY bd1.olap\_station\_component FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station\_component.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

PAGING OFF;

DROP TABLE IF EXISTS bd1.olap\_station;

CREATE TABLE bd1.olap\_station(

station TEXT,

so2 DOUBLE,

PRIMARY KEY(station)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station.CSV'

-- 5

SELECT station,sum(so2)

FROM bd1.station\_component\_year

where isOLAP=true

group by station

ALLOW FILTERING;

COPY bd1.olap\_station FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_station.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

PAGING OFF;

DROP TABLE IF EXISTS bd1.olap\_city\_component;

CREATE TABLE bd1.olap\_city\_component(

city TEXT,

component TEXT,

so2 DOUBLE,

PRIMARY KEY(city,component)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_city\_component.CSV'

-- 6

SELECT city,component,sum(so2)

FROM bd1.city\_component\_year

where isOLAP=true

group by city,component

ALLOW FILTERING;

COPY bd1.olap\_city\_component FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_city\_component.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

PAGING OFF;

DROP TABLE IF EXISTS bd1.olap\_city;

CREATE TABLE bd1.olap\_city(

city TEXT,

so2 DOUBLE,

PRIMARY KEY(city)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_city.CSV'

-- 7

SELECT city,sum(so2)

FROM bd1.city\_component\_year

where isOLAP=true

group by city

ALLOW FILTERING;

COPY bd1.olap\_city FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_city.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

PAGING OFF;

DROP TABLE IF EXISTS bd1.olap\_country\_component;

CREATE TABLE bd1.olap\_country\_component(

country TEXT,

component TEXT,

so2 DOUBLE,

PRIMARY KEY(country,component)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_country\_component.CSV'

-- 8

SELECT country,component,sum(so2)

FROM bd1.country\_component\_year

where isOLAP=true

group by country,component

ALLOW FILTERING;

COPY bd1.olap\_country\_component FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_country\_component.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_country;

CREATE TABLE bd1.olap\_country(

country TEXT,

so2 DOUBLE,

PRIMARY KEY(country)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_country.CSV'

-- 9

SELECT country,sum(so2)

FROM bd1.country\_component\_year

where isOLAP=true

group by country

ALLOW FILTERING;

COPY bd1.olap\_country FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_country.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_all;

CREATE TABLE bd1.olap\_all(

so2 DOUBLE,

PRIMARY KEY(so2)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_all.CSV'

-- 10

SELECT sum(so2)

FROM bd1.country\_component\_year

where isOLAP=true

ALLOW FILTERING;

COPY bd1.olap\_all FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_all.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_city\_year;

CREATE TABLE bd1.olap\_city\_year(

city TEXT,

year TEXT,

so2 DOUBLE,

PRIMARY KEY(city,year)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_city\_year.CSV'

-- 11

SELECT city,year,sum(so2)

FROM bd1.city\_year\_component

where isOLAP=true

group by city,year

ALLOW FILTERING;

COPY bd1.olap\_city\_year FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_city\_year.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_country\_year;

CREATE TABLE bd1.olap\_country\_year(

country TEXT,

year TEXT,

so2 DOUBLE,

PRIMARY KEY(country,year)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_country\_year.CSV'

-- 12

SELECT country,year,sum(so2)

FROM bd1.country\_year\_component

where isOLAP=true

group by country,year

ALLOW FILTERING;

COPY bd1.olap\_country\_year FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_country\_year.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition\_year\_station\_sensor;

CREATE TABLE bd1.olap\_condition\_year\_station\_sensor(

year TEXT,

station TEXT,

sensor TEXT,

so2 DOUBLE,

PRIMARY KEY(year,station,sensor)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_year\_station\_sensor.CSV'

-- 13

SELECT year,station,sensor,sum(so2)

FROM bd1.year\_station\_sensor

where year in ('http://qweb.cs.aau.dk/airbase/data/year/2006/','http://qweb.cs.aau.dk/airbase/data/year/2007/','http://qweb.cs.aau.dk/airbase/data/year/2008/','http://qweb.cs.aau.dk/airbase/data/year/2009/','http://qweb.cs.aau.dk/airbase/data/year/2010/','http://qweb.cs.aau.dk/airbase/data/year/2011/')

and isOLAP=true

group by year,station,sensor

ALLOW FILTERING;

COPY bd1.olap\_condition\_year\_station\_sensor FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_year\_station\_sensor.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition\_station;

CREATE TABLE bd1.olap\_condition\_station(

station TEXT,

so2 DOUBLE,

PRIMARY KEY(station)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_station.CSV'

-- 14

SELECT station,sum(so2)

FROM bd1.station\_year\_sensor

where station='http://qweb.cs.aau.dk/airbase/data/station/GB0690A\_SCUN/'

and isOLAP=true

group by station

ALLOW FILTERING;

COPY bd1.olap\_condition\_station FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_station.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition2\_station;

CREATE TABLE bd1.olap\_condition2\_station(

station TEXT,

so2 DOUBLE,

PRIMARY KEY(station)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_station.CSV'

-- 15

SELECT station,sum(so2)

FROM bd1.station\_year\_sensor

where station in ('http://qweb.cs.aau.dk/airbase/data/station/GB0690A\_SCUN/','http://qweb.cs.aau.dk/airbase/data/station/GB0917A\_STEW/',

'http://qweb.cs.aau.dk/airbase/data/station/GB0037R\_LB/')

and isOLAP=true

group by station

ALLOW FILTERING;

COPY bd1.olap\_condition\_station FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_station.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition2\_city;

CREATE TABLE bd1.olap\_condition2\_city(

city TEXT,

so2 DOUBLE,

PRIMARY KEY(city)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_city.CSV'

-- 16

SELECT city,sum(so2)

FROM bd1.city\_year\_sensor

where city='http://qweb.cs.aau.dk/airbase/data/city/LONDON/'

and isOLAP=true

group by city

ALLOW FILTERING;

COPY bd1.olap\_condition\_station FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_city.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition2\_country;

CREATE TABLE bd1.olap\_condition2\_country(

country TEXT,

so2 DOUBLE,

PRIMARY KEY(country)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_country.CSV'

-- 17

SELECT country,sum(so2)

FROM bd1.country\_year\_sensor

where country='http://qweb.cs.aau.dk/airbase/data/country/United\_Kingdom/'

and isOLAP=true

group by country

ALLOW FILTERING;

COPY bd1.olap\_condition2\_country FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_country.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition\_city\_year;

CREATE TABLE bd1.olap\_condition\_city\_year(

city TEXT,

year TEXT,

so2 DOUBLE,

PRIMARY KEY(city,year)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_city\_year.CSV'

-- 18

SELECT city,year,sum(so2)

FROM bd1.city\_year\_sensor

where city='http://qweb.cs.aau.dk/airbase/data/city/LONDON/'

and year='http://qweb.cs.aau.dk/airbase/data/year/2010/'

and isOLAP=true

group by city,year

ALLOW FILTERING;

COPY bd1.olap\_condition\_city\_year FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_city\_year.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition2\_city\_year;

CREATE TABLE bd1.olap\_condition2\_city\_year(

city TEXT,

year TEXT,

so2 DOUBLE,

PRIMARY KEY(city,year)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_city\_year.CSV'

-- 19

SELECT city,year,sum(so2)

FROM bd1.city\_year\_sensor

where country='http://qweb.cs.aau.dk/airbase/data/country/United\_Kingdom/'

and year in ('http://qweb.cs.aau.dk/airbase/data/year/2006/','http://qweb.cs.aau.dk/airbase/data/year/2007/','http://qweb.cs.aau.dk/airbase/data/year/2008/','http://qweb.cs.aau.dk/airbase/data/year/2009/','http://qweb.cs.aau.dk/airbase/data/year/2010/','http://qweb.cs.aau.dk/airbase/data/year/2011/')

and isOLAP=true

group by city,year

ALLOW FILTERING;

COPY bd1.olap\_condition2\_city\_year FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition2\_city\_year.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition\_city;

CREATE TABLE bd1.olap\_condition\_city(

city TEXT,

so2 DOUBLE,

PRIMARY KEY(city)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_city.CSV'

-- 20

SELECT city,sum(so2)

FROM bd1.city\_year\_sensor

where city='http://qweb.cs.aau.dk/airbase/data/city/LONDON/'

and year='http://qweb.cs.aau.dk/airbase/data/year/2010/'

and isOLAP=true

group by city

ALLOW FILTERING;

COPY bd1.olap\_condition\_city FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_city.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

paging off;

DROP TABLE IF EXISTS bd1.olap\_condition\_station\_component\_year;

CREATE TABLE bd1.olap\_condition\_station\_component\_year(

station TEXT,

component TEXT,

year TEXT,

so2 DOUBLE,

PRIMARY KEY(station,component,year)

);

CAPTURE '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_station\_component\_year.CSV'

--21

SELECT station,component,year,sum(so2)

FROM bd1.station\_component\_year

where isOLAP=true

and station='http://qweb.cs.aau.dk/airbase/data/station/GB0841A\_SCN2/'

and year='http://qweb.cs.aau.dk/airbase/data/year/2004/'

and component='http://qweb.cs.aau.dk/airbase/data/component/1/'

group by station,component,year

ALLOW FILTERING;

COPY bd1.olap\_condition\_station\_component\_year FROM '/Users/irit/liu/log/db1/cassandra/createViewTemp/olap\_condition\_station\_component\_year.CSV' WITH DELIMITER='|' AND HEADER=TRUE;

CAPTURE OFF;

## Queries on aggregated data

1—

PAGING OFF;

TRACING on;

SELECT station,sensor,year,so2

FROM bd1.olap\_station\_sensor\_year;

2--

PAGING OFF;

TRACING on;

SELECT station,component,year,so2

FROM bd1.olap\_station\_component\_year;

3--

PAGING OFF;

TRACING on;

SELECT station,sensor,so2

FROM bd1.olap\_station\_sensor;

4--

PAGING OFF;

TRACING on;

SELECT station,component,so2

FROM bd1.olap\_station\_component;

5--

PAGING OFF;

TRACING on;

SELECT station,so2

FROM bd1.olap\_station;

6--

PAGING OFF;

TRACING on;

SELECT city,component,so2

FROM bd1.olap\_city\_component;

7--

PAGING OFF;

TRACING on;

SELECT city,so2

FROM bd1.olap\_city;

8--

PAGING OFF;

TRACING on;

SELECT country,component,so2

FROM bd1.olap\_country\_component;

9--

PAGING OFF;

TRACING on;

SELECT country,so2

FROM bd1.olap\_country;

10--

PAGING OFF;

TRACING on;

SELECT so2

FROM bd1.olap\_all;

11--

PAGING OFF;

TRACING on;

SELECT city,year,so2

FROM bd1.olap\_city\_year;

12--

PAGING OFF;

TRACING on;

SELECT country,year,so2

FROM bd1.olap\_country\_year;

12--

PAGING OFF;

TRACING on;

SELECT country,year,so2

FROM bd1.olap\_country\_year;

13--

PAGING OFF;

TRACING on;

SELECT year,station,sensor,so2

FROM bd1.olap\_condition\_year\_station\_sensor;

14--

PAGING OFF;

TRACING on;

SELECT station,so2

FROM bd1.olap\_condition\_station;

15--

PAGING OFF;

TRACING on;

SELECT station,so2

FROM bd1.olap\_condition2\_station;

16--

PAGING OFF;

TRACING on;

SELECT city,so2

FROM bd1.olap\_condition2\_city;

17--

PAGING OFF;

TRACING on;

SELECT country,so2

FROM bd1.olap\_condition2\_country;

18--

PAGING OFF;

TRACING on;

SELECT city,year,so2

FROM bd1.olap\_condition\_city\_year;

19--

PAGING OFF;

TRACING on;

SELECT city,year,so2

FROM bd1.olap\_condition2\_city\_year;

20--

PAGING OFF;

TRACING on;

SELECT city,so2

FROM bd1.olap\_condition\_city;

21--

PAGING OFF;

TRACING on;

SELECT station,component,year,so2

FROM bd1.olap\_condition\_station\_component\_year;