

# Large-Scale Databases – Part B

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## Question 1:

### Input:

```
SELECT COUNT(DISTINCT D.NAME)
```

```
FROM MOTORWAYSSOUTHWALES M, CARDIFFDISTRICTS D
```

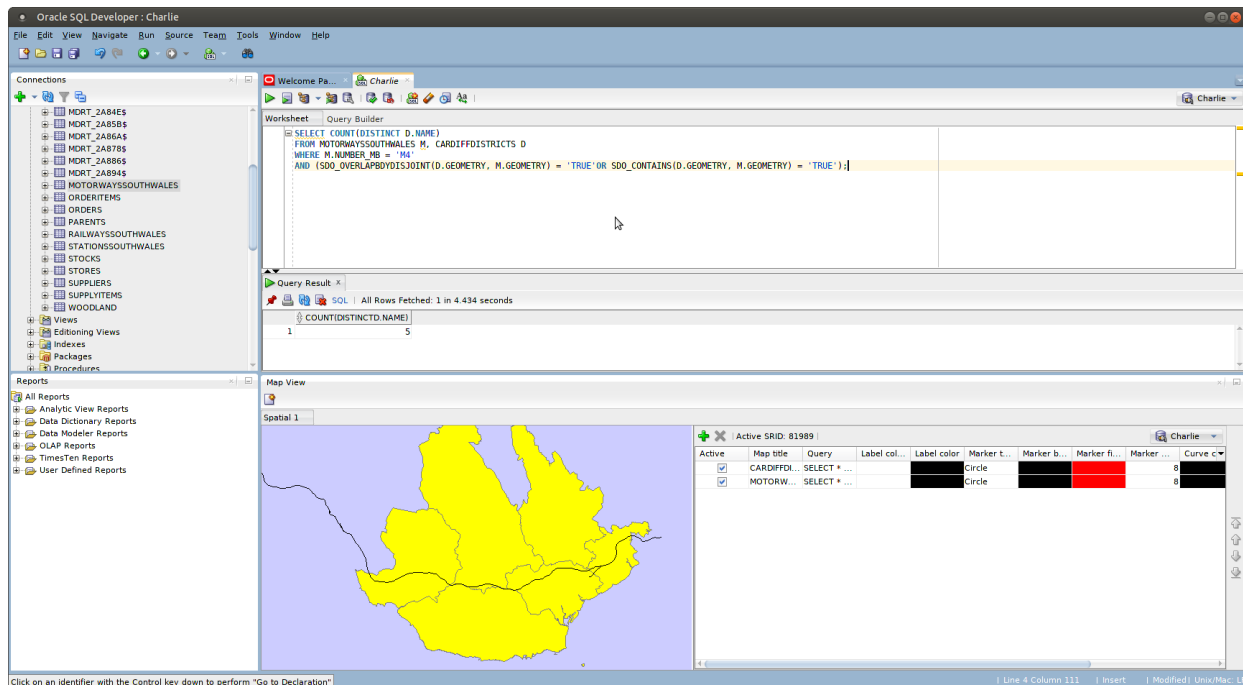
```
WHERE M.NUMBER_MB = 'M4'
```

```
AND (SDO_OVERLAPBDYDISJOINT(D.GEOMETRY, M.GEOMETRY) = 'TRUE' OR  
SDO_CONTAINS(D.GEOMETRY, M.GEOMETRY) = 'TRUE');
```

### Output:

	COUNT(DISTINCT D.NAME)
1	5

## Screenshot:



## Question 2:

### Input:

```
SELECT COUNT(DISTINCT S.IDENTIFIER)
```

```
FROM CARDIFFDISTRICTS D, COASTLINESOUTHWALES C, STATIONSSOUTHWALES S
```

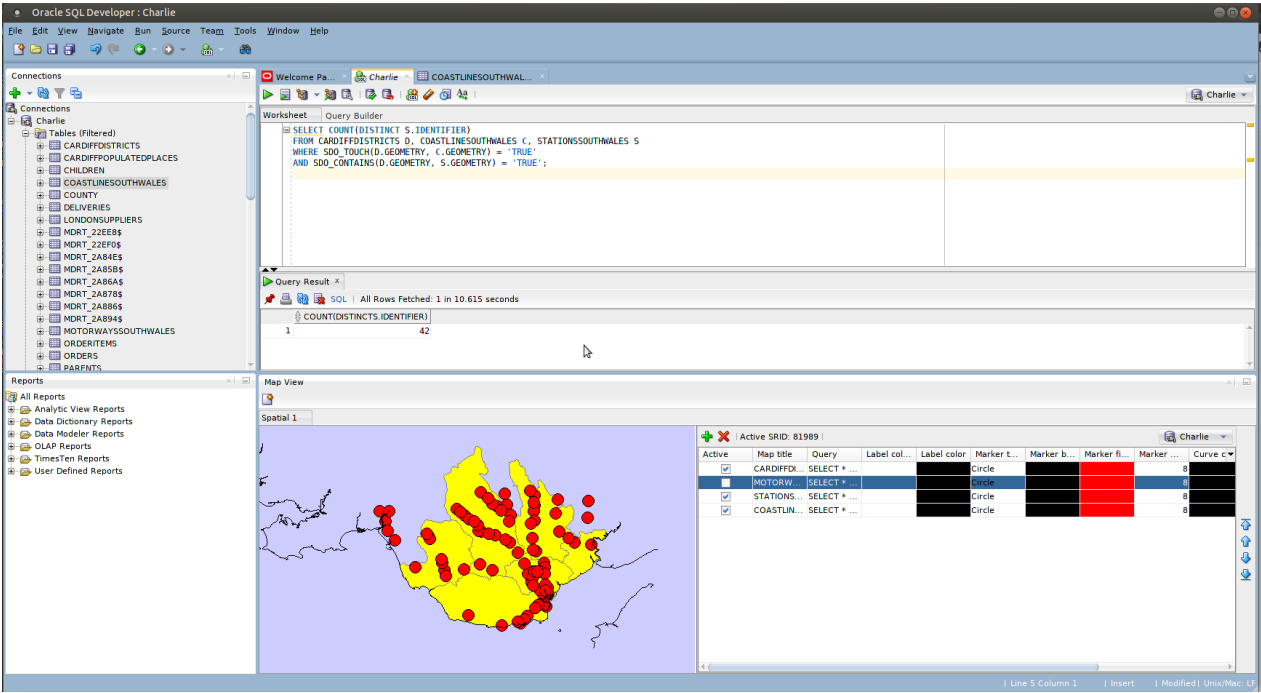
```
WHERE SDO_TOUCH(D.GEOMETRY, C.GEOMETRY) = 'TRUE'
```

```
AND SDO_CONTAINS(D.GEOMETRY, S.GEOMETRY) = 'TRUE';
```

### Output:

	COUNT(DISTINCT S.IDENTIFIER)
1	42

Screenshot:



Question 3:

Input:

SELECT DISTINCT P.DISTNAME

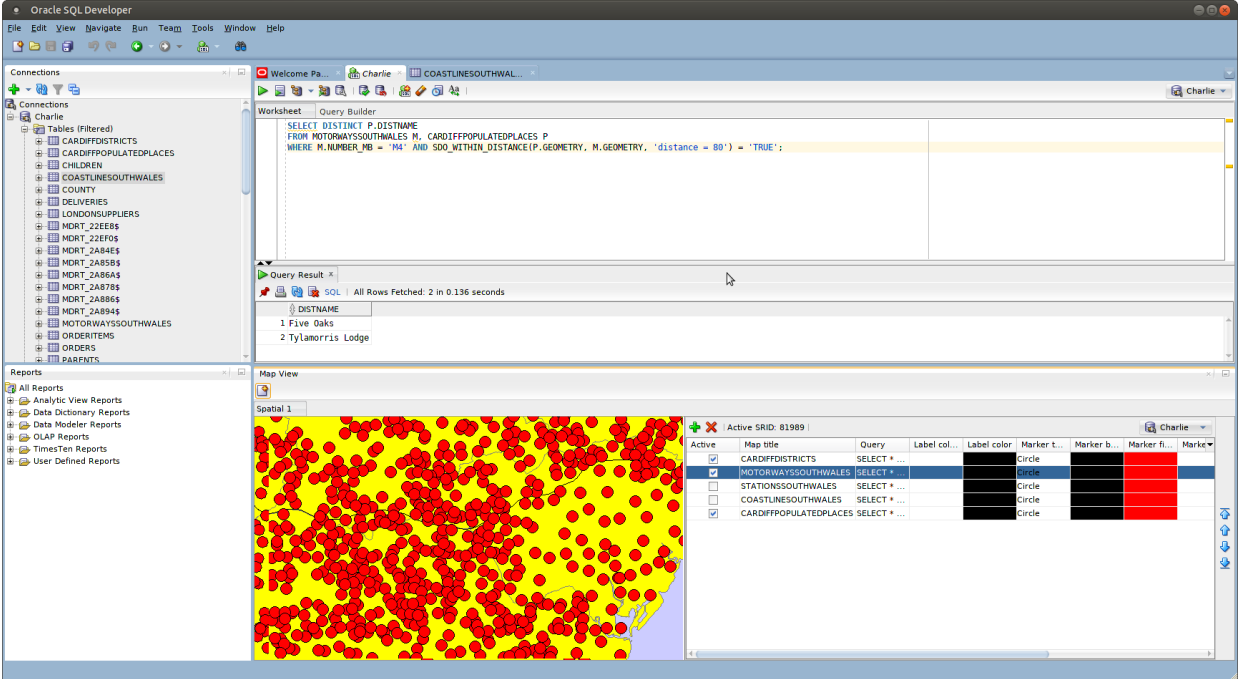
FROM MOTORWAYSSOUTHWALES M, CARDIFFPOPULATEDPLACES P

WHERE M.NUMBER\_MB = 'M4' AND SDO\_WITHIN\_DISTANCE(P.GEOMETRY, M.GEOMETRY, 'distance = 80') = 'TRUE';

Output:

	DISTNAME
1	Five Oaks
2	Tylamorris Lodge

Screenshot:



## Question 4:

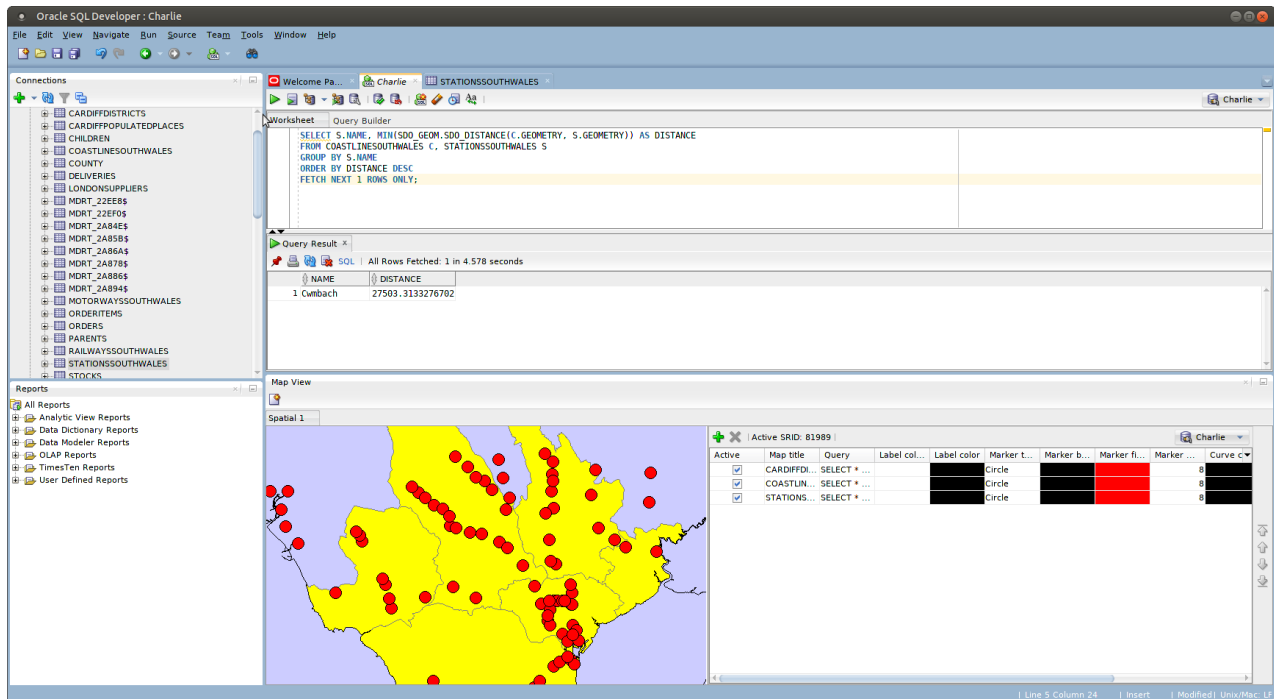
### Input:

```
SELECT S.NAME, MIN(SDO_GEOM.SDO_DISTANCE(C.GEOMETRY, S.GEOMETRY)) AS DISTANCE
FROM COASTLINESOUTHWALES C, STATIONSSOUTHWALES S
GROUP BY S.NAME
ORDER BY DISTANCE DESC
FETCH NEXT 1 ROWS ONLY;
```

### Output:

	NAME	DISTANCE
1	Cwmbach	27503.3133276702

### Screenshot:



## Question 5:

### Input:

```
SELECT * FROM
(SELECT D.NAME,
SUM(SDO_GEOM.SDO_LENGTH(SDO_GEOM.SDO_INTERSECTION(D.GEOMETRY, M.GEOMETRY)))
AS LENGTH
FROM MOTORWAYSSOUTHWALES M, CARDIFFDISTRICTS D
WHERE M.NUMBER_MB = 'M4'
GROUP BY D.NAME
ORDER BY LENGTH DESC)
WHERE LENGTH IS NOT NULL
FETCH NEXT 1 ROWS ONLY;
```

## Output:

	NAME	LENGTH
1	PEN-Y-BONT AR OGWR - BRIDGEND	18459.166897191724

## Screenshot:

The screenshot displays the Oracle SQL Developer interface with the following components:

- Connections:** A tree view on the left showing database connections, including COASTLINESOUTHWALES, COUNTY, DELIVERIES, LONDONSUPPLIERS, MDRT\_22E8B, MDRT\_22E09, MDRT\_2A84E, MDRT\_2A85B, MDRT\_2A86A, MDRT\_2A87B, MDRT\_2A88B, MDRT\_2A89A, MOTORWAYSSOUTHWALES, ORDERITEMS, ORDERS, PARENTS, RAILWAYSSOUTHWALES, STATIONSSOUTHWALES, STOCKS, STORES, SUPPLIERS, and SUPPLIITEMS.
- Worksheet:** The main area for writing SQL queries. The query is:

```
SELECT * FROM
(SELECT D.NAME, SUM(SDO_GEOM.SDO_LENGTH(SDO_GEOM.SDO_INTERSECTION(D.GEOMETRY, M.GEOMETRY))) AS LENGTH
FROM MOTORWAYSSOUTHWALES M, CARDIFFDISTRICTS D
WHERE M.NUMBER_HB = 'W4'
GROUP BY D.NAME
ORDER BY LENGTH DESC)
WHERE LENGTH IS NOT NULL
FETCH NEXT 1 ROWS ONLY;
```
- Query Result:** A table showing the results of the query. It has two columns: NAME and LENGTH. The first row is: 1 PEN-Y-BONT AR OGWR - BRIDGEND 18459.166897191724.
- Map View:** A map showing the location of the selected feature. The map is titled 'Spatial 4' and shows a yellow area representing the selected feature.
- Active SRID: 81989:** A table showing the active SRID and its properties. The table has columns: Active, Map title, Query, Label col..., Label color, Marker t..., Marker b..., Marker f..., Marker..., and Curve c... The first row is: ☒ CARDIFFDI... SELECT \* ... Circle ... ... 8.