



# DATABASE CONCEPTS ASSIGNMENT-3

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## Part D: Data Retrieval and Visualisation

### Task D.1:

#### Query:

```
WITH Month1 AS (  
    SELECT v.iso_code,  
           l.location AS [Country Name (CN)],  
           SUM(v.daily_vaccinations) AS [Administered Vaccine on OM1 (VOM1)]  
    FROM vaccinations v  
    JOIN  
        location l ON v.iso_code = l.iso_code  
    WHERE v.date LIKE '%04-2022'  
    GROUP BY v.iso_code,  
             l.location  
)  
Month2 AS (  
    SELECT v.iso_code,  
           l.location AS [Country Name (CN)],  
           SUM(v.daily_vaccinations) AS [Administered Vaccine on OM2 (VOM2)]  
    FROM vaccinations v  
    JOIN  
        location l ON v.iso_code = l.iso_code  
    WHERE v.date LIKE '%05-2022'  
    GROUP BY v.iso_code,  
             l.location  
)  
SELECT 'April 2022' AS [Observation Months 1 (OM1)],  
       m1.[Country Name (CN)],  
       m1.[Administered Vaccine on OM1 (VOM1)],  
       'May 2022' AS [Observation Months 2 (OM2)],
```

COALESCE(m2.[Administered Vaccine on OM2 (VOM2)], 0) AS [Administered Vaccine on OM2 (VOM2)],

(m1.[Administered Vaccine on OM1 (VOM1)] - COALESCE(m2.[Administered Vaccine on OM2 (VOM2)], 0) ) AS [Difference of totals (VOM1 - VOM2)]

FROM Month1 m1

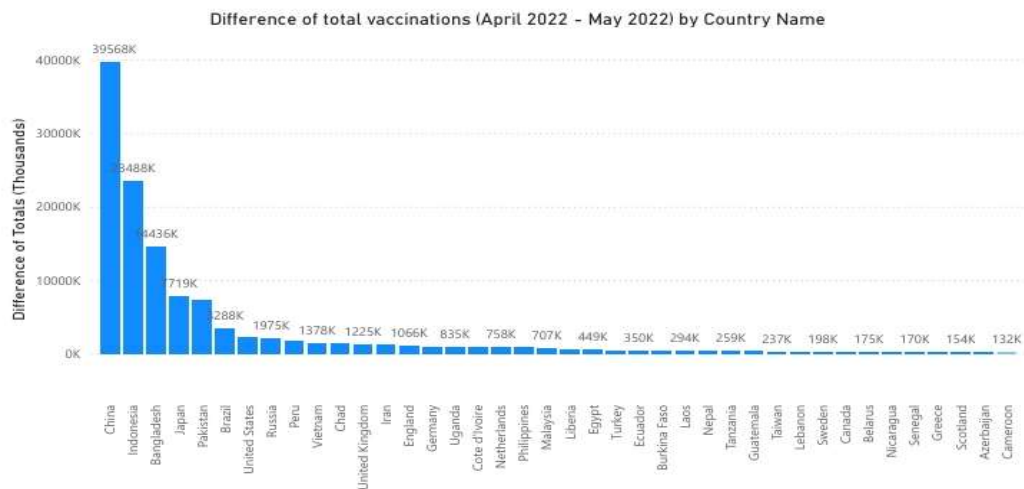
LEFT JOIN

Month2 m2 ON m1.iso\_code = m2.iso\_code;

## Output:

Grid view Form view						
Total rows loaded: 215						
	Observatio	Country Name (CN)	Administered Va	Observatio	Administered Vacc	Difference
1	April 2022	Aruba	1106	May 2022	831	275
2	April 2022	Afghanistan	180616	May 2022	160268	20348
3	April 2022	Angola	351920	May 2022	960580	-608660
4	April 2022	Anguilla	456	May 2022	303	153
5	April 2022	Albania	55529	May 2022	56029	-500
6	April 2022	Andorra	374	May 2022	495	-121
7	April 2022	United Arab Emirates	208963	May 2022	193587	15376
8	April 2022	Argentina	2030892	May 2022	4026194	-1995302
9	April 2022	Armenia	22219	May 2022	966	21253
10	April 2022	Antigua and Barbuda	172	May 2022	156	16
11	April 2022	Australia	1328429	May 2022	1558952	-230523
12	April 2022	Austria	95515	May 2022	108943	-13428

## Data visualisation:



## Task D.2:

### Query:

```
WITH MonthlyCumulative AS (  
    SELECT  
        v.iso_code,  
        l.location AS "Country Name",  
        strftime('%m/%Y', substr(v.date, 7, 4) || '-' || substr(v.date, 4, 2) || '-' || substr(v.date, 1, 2)) AS  
"Month",  
        SUM(v.daily_vaccinations) AS "Cumulative Doses"  
    FROM  
        vaccinations v  
    JOIN  
        location l ON v.iso_code = l.iso_code  
    GROUP BY  
        v.iso_code, l.location, strftime('%m/%Y', substr(v.date, 7, 4) || '-' || substr(v.date, 4, 2) || '-' ||  
substr(v.date, 1, 2))  
)  
  
MonthlyAverage AS (  
    SELECT  
        "Month",  
        AVG("Cumulative Doses") AS "Average Doses"  
    FROM  
        MonthlyCumulative  
    GROUP BY  
        "Month"  
)  
  
SELECT  
    mc."Country Name",  
    mc."Month",  
    mc."Cumulative Doses"
```

```

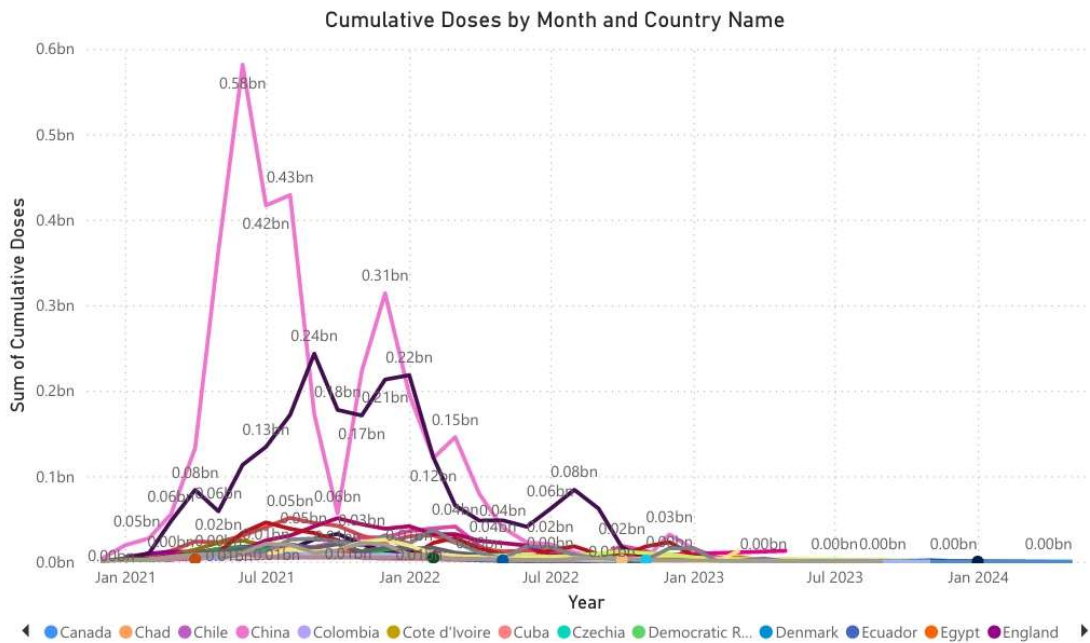
FROM
    MonthlyCumulative mc
JOIN
    MonthlyAverage ma ON mc."Month" = ma."Month"
WHERE
    mc."Cumulative Doses" > ma."Average Doses"
ORDER BY
    mc."Country Name", mc."Month";

```

### Output:

Grid view		Form view	
		Total rows loaded: 989	
	Country Name	Month	Cumulative Dose
1	Afghanistan	02/2023	1765786
2	Afghanistan	03/2023	2062705
3	Afghanistan	04/2023	356961
4	Afghanistan	05/2023	1462173
5	Afghanistan	06/2023	2061050
6	Afghanistan	07/2022	1852225
7	Afghanistan	07/2023	311682
8	Afghanistan	08/2022	3241851
9	Afghanistan	08/2023	448318
10	Afghanistan	09/2023	558875
11	Afghanistan	10/2023	378210
12	Afghanistan	11/2023	526835

## Data visualisation:



## Task D.3:

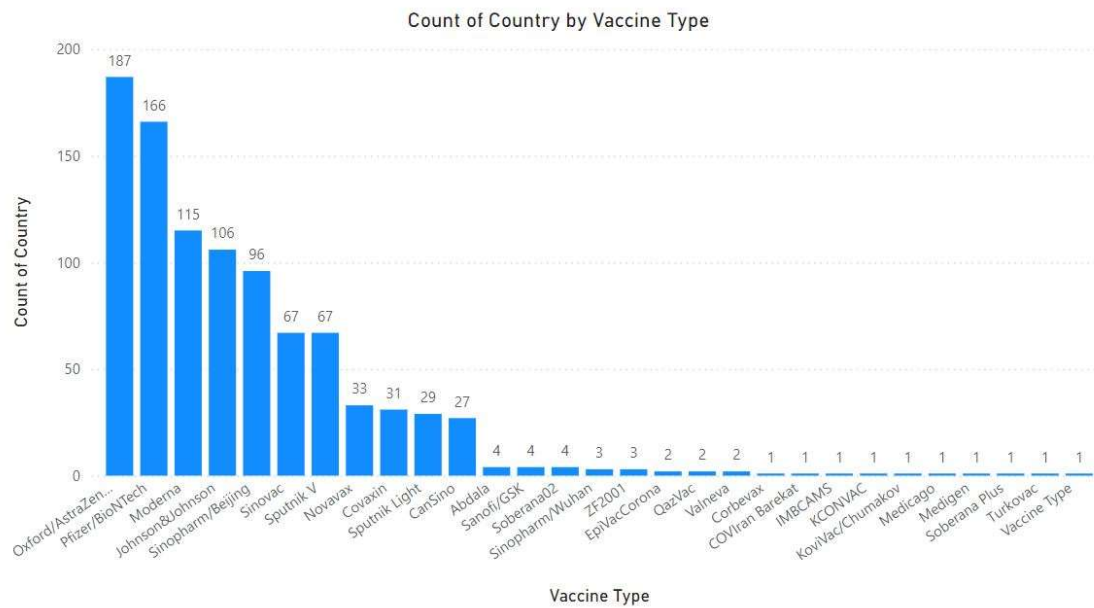
### Query:

```
SELECT v.vaccineName AS [Vaccine Type],  
  
       l.location AS Country  
  
FROM location_vaccine lv  
  
JOIN  
  
vaccine v ON lv.vaccineID = v.vaccineID  
  
JOIN  
  
location l ON lv.iso_code = l.iso_code;
```

## Output:

Grid view    Form view		
<div> <span>1</span> </div> <div>Total rows loaded: 957</div>		
	Vaccine Type	Country
1	CanSino	Afghanistan
2	Covaxin	Afghanistan
3	Johnson&Johnson	Afghanistan
4	Moderna	Afghanistan
5	Oxford/AstraZeneca	Afghanistan
6	Pfizer/BioNTech	Afghanistan
7	Sinopharm/Beijing	Afghanistan
8	Sinovac	Afghanistan
9	Sputnik Light	Afghanistan
10	Sputnik V	Afghanistan
11	Oxford/AstraZeneca	Albania
12	Pfizer/BioNTech	Albania

## Data visualisation:











#### Task D.4:

#### Query:

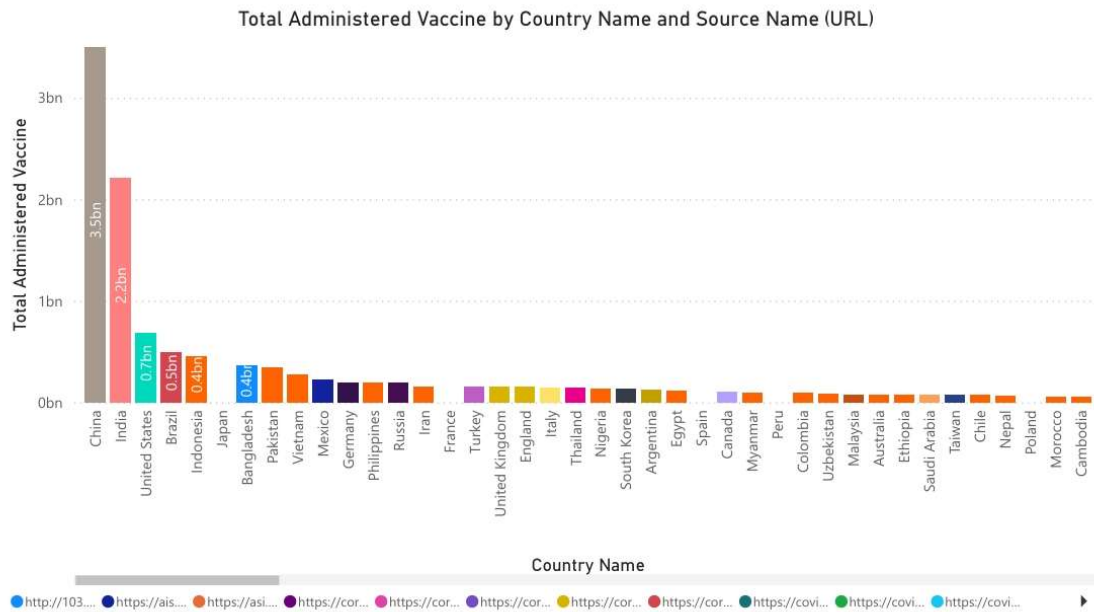
```
SELECT l.location AS [Country Name],
       s.source_website AS [Source Name (URL)],
       max(v.total_vaccinations) AS [Total Administered Vaccine]
FROM location l
      INNER JOIN
      Vaccinations v ON l.iso_code = v.iso_code
      INNER JOIN
      Source s ON l.sourceID = s.sourceID
GROUP BY l.iso_code,s.source_website;
```

#### Output:

Grid view   Form view			
       			
	Country Name	Source Name (URL)	Total Administered Vaccine
1	Aruba	<a href="https://www.government.aw">https://www.government.aw</a>	174914
2	Afghanistan	<a href="https://data.who.int/dashboards/covid19/">https://data.who.int/dashboards/covid19/</a>	22964750
3	Angola	<a href="https://data.who.int/dashboards/covid19/">https://data.who.int/dashboards/covid19/</a>	27819132
4	Anguilla	<a href="https://ais.paho.org/imm/IM_DosisAdmin-Vacunacion.asp">https://ais.paho.org/imm/IM_DosisAdmin-Vacunacion.asp</a>	24604
5	Albania	<a href="https://data.who.int/dashboards/covid19/">https://data.who.int/dashboards/covid19/</a>	3088966
6	Andorra	<a href="https://data.who.int/dashboards/covid19/">https://data.who.int/dashboards/covid19/</a>	157072
7	United Arab Emirates	<a href="https://covid19.who.int/">https://covid19.who.int/</a>	24922054
8	Argentina	<a href="https://covidstats.com.ar/">https://covidstats.com.ar/</a>	116978521
9	Armenia	<a href="https://data.who.int/dashboards/covid19/">https://data.who.int/dashboards/covid19/</a>	2256919
10	Antigua and Barbuda	<a href="https://covid19.who.int/">https://covid19.who.int/</a>	136512
11	Australia	<a href="https://data.who.int/dashboards/covid19/">https://data.who.int/dashboards/covid19/</a>	69686752
12	Austria	<a href="https://www.ecdc.europa.eu/en/publications-data/data-covid-19-vaccination-eu-eea">https://www.ecdc.europa.eu/en/publications-data/data-covid-19-vaccination-eu-eea</a>	20468731



## Data visualisation:



## Task D.5:

### Query:

```

SELECT t1.[Date Range (Months)],
       COALESCE(t1.total_fully_vaccinated, 0) AS United States,
       COALESCE(t2.total_fully_vaccinated, 0) AS Wales,
       COALESCE(t3.total_fully_vaccinated, 0) AS Canada,
       COALESCE(t4.total_fully_vaccinated, 0) AS Denmark
FROM (
    SELECT SUBSTR(v.date, 7, 4) || '-' || SUBSTR(v.date, 4, 2) AS [Date Range (Months)],
           MAX(v.people_fully_vaccinated) AS total_fully_vaccinated
    FROM vaccinations v
    JOIN
        location l ON v.iso_code = l.iso_code
    WHERE SUBSTR(v.date, 7, 4) IN ('2022', '2023') AND
           l.location = 'United States'

```

```

        GROUP BY "Date Range (Months)"
    )
t1
LEFT JOIN
(
    SELECT SUBSTR(v.date, 7, 4) || '-' || SUBSTR(v.date, 4, 2) AS [Date Range (Months)],
           MAX(v.people_fully_vaccinated) AS total_fully_vaccinated
    FROM vaccinations v
    JOIN
        location l ON v.iso_code = l.iso_code
    WHERE SUBSTR(v.date, 7, 4) IN ('2022', '2023') AND
           l.location = 'Wales'
    GROUP BY "Date Range (Months)"
)
t2 ON t1.[Date Range (Months)] = t2.[Date Range (Months)]
LEFT JOIN
(
    SELECT SUBSTR(v.date, 7, 4) || '-' || SUBSTR(v.date, 4, 2) AS [Date Range (Months)],
           MAX(v.people_fully_vaccinated) AS total_fully_vaccinated
    FROM vaccinations v
    JOIN
        location l ON v.iso_code = l.iso_code
    WHERE SUBSTR(v.date, 7, 4) IN ('2022', '2023') AND
           l.location = 'Canada'
    GROUP BY "Date Range (Months)"
)
t3 ON t1.[Date Range (Months)] = t3.[Date Range (Months)]
LEFT JOIN
(
    SELECT SUBSTR(v.date, 7, 4) || '-' || SUBSTR(v.date, 4, 2) AS [Date Range (Months)],
           MAX(v.people_fully_vaccinated) AS total_fully_vaccinated

```

```

FROM vaccinations v
JOIN
location l ON v.iso_code = l.iso_code
WHERE SUBSTR(v.date, 7, 4) IN ('2022', '2023') AND
l.location = 'Denmark'
GROUP BY "Date Range (Months)"
)
t4 ON t1.[Date Range (Months)] = t4.[Date Range (Months)]
ORDER BY t1.[Date Range (Months)];

```

### Output:

Grid view		Form view			
		Total rows loaded: 17			
	Date Range (Months)	United States	Wales	Canada	Denmark
1	2022-01	215215443	2368368	30164340	4673405
2	2022-02	218330536	2386176	30912775	4692757
3	2022-03	219898973	2400924	31188970	4698067
4	2022-04	221433810	2413707	31311704	4701256
5	2022-05	222623670	2420705	31396929	4703557
6	2022-06	223512235	2428741	31450822	4706060
7	2022-07	224439379	2443572	31496027	4707607
8	2022-08	225287976	2455467	31542116	4708414
9	2022-09	226506045	2459171	31581862	4709156
10	2022-10	227924209	2465484	31639845	4709901
11	2022-11	228900198	2470338	31690477	4710449
12	2022-12	229580638	2471750	31731097	4710877

Data visualisation:

