is456-hop05-thomasthaddeus

is456-hop05-thomasthaddeus created by GitHub Classroom

01 Aggregate Data

World-1

```
SELECT COUNT(*)
  FROM Country
;
```

COUNT(*)
239

World-2

```
SELECT
    Region,
    COUNT(*)
  FROM Country
  GROUP BY Region
;
```

Region	COUNT(*)
Antarctica	5
Australia and New Zealand	5
Baltic Countries	3
British Islands	2
Caribbean	24
Central Africa	9
Central America	8
Eastern Africa	20
Eastern Asia	8
Eastern Europe	10
Melanesia	5

Region	COUNT(*)
Micronesia	7
Micronesia/Caribbean	1
Middle East	18
Nordic Countries	7
North America	5
Northern Africa	7
Polynesia	10
South America	14
Southeast Asia	11
Southern Africa	5
Southern Europe	15
Southern and Central Asia	14
Western Africa	17
Western Europe	9

World-3

```sql
SELECT
    Region,
    COUNT(*) AS Count
  FROM Country
  GROUP BY Region
  ORDER BY
        Count DESC,
        Region
  ;
```

Region	Count
Caribbean	24
Eastern Africa	20
Middle East	18
Western Africa	17
Southern Europe	15
South America	14

Region	Count
Southern and Central Asia	14
Southeast Asia	11
Eastern Europe	10
Polynesia	10
Central Africa	9
Western Europe	9
Central America	8
Eastern Asia	8
Micronesia	7
Nordic Countries	7
Northern Africa	7
Antarctica	5
Australia and New Zealand	5
Melanesia	5
North America	5
Southern Africa	5
Baltic Countries	3
British Islands	2
Micronesia/Caribbean	1

Album-4

```sql
SELECT
    a.title AS Album,
    COUNT(t.track_number) AS Tracks
  FROM track AS t
  JOIN album AS a
    ON a.id = t.album_id
  GROUP BY a.id
  ORDER BY
        Tracks DESC,
        Album
 ;
```

Album	Tracks

Album	Tracks
Rubber Soul	14
Birds of Fire	10
Two Men with the Blues	10
Apostrophe	9
Hendrix in the West	9
Live And	6
Kind of Blue	5

Album-5

```
SELECT
    a.title AS Album,
    COUNT(t.track_number) AS Tracks
  FROM track AS t
  JOIN album AS a
    ON a.id = t.album_id
  GROUP BY a.id
  HAVING Tracks >= 10
  ORDER BY
        Tracks DESC,
        Album
  ;
```

Album	Tracks
Rubber Soul	14
Birds of Fire	10
Two Men with the Blues	10

Album-6

```
SELECT a.title AS Album, COUNT(t.track_number) as Tracks
  FROM track AS t
  JOIN album AS a
    ON a.id = t.album_id
  WHERE a.artist = 'The Beatles'
  GROUP BY a.id
  HAVING Tracks >= 10
  ORDER BY
        Tracks DESC,
        Album
  ;
```

Album	Tracks
Rubber Soul	14
Birds of Fire	10
Two Men with the Blues	10
Apostrophe	9
Hendrix in the West	9
Live And	6
Kind of Blue	5

02 Aggregate functions

World 2-1

```
SELECT COUNT(*)
  FROM Country
  ;
```

COUNT(*)
239

World 2-2

```
SELECT COUNT(Population)
  FROM Country
  ;
```

COUNT(Population)
232

World 2-3

```
SELECT AVG(Population)
  FROM Country
  ;
```

AVG(Population)

26201506.25

World 2-4

```
SELECT
    Region,
    AVG(Population)
  FROM Country
  GROUP BY Region
  ;
```

Region	AVG(Population)
Antarctica	
Australia and New Zealand	4550620.0
Baltic Countries	2520633.33333333
British Islands	31699250.0
Caribbean	1589166.66666667
Central Africa	10628000.0
Central America	16902625.0
Eastern Africa	12999947.3684211
Eastern Asia	188416000.0
Eastern Europe	30702600.0
Melanesia	1294400.0
Micronesia	77571.4285714286
Micronesia/Caribbean	
Middle East	10465594.4444444
Nordic Countries	3452342.85714286
North America	61926400.0
Northern Africa	24752285.7142857
Polynesia	63305.0
South America	24698571.4285714
Southeast Asia	47140090.9090909
Southern Africa	9377200.0

Region	AVG(Population)
Southern Europe	9644946.66666667
Southern and Central Asia	106484000.0
Western Africa	13039529.4117647
Western Europe	20360844.4444444

World 2-5

```
SELECT
    Region,
    MIN(Population),
    MAX(Population)
  FROM Country
  GROUP BY Region
  ;
```

Region	MIN(Population)	MAX(Population)
Antarctica		
Australia and New Zealand	600	18886000
Baltic Countries	1439200	3698500
British Islands	3775100	59623400
Caribbean	8000	11201000
Central Africa	147000	51654000
Central America	241000	98881000
Eastern Africa	77000	62565000
Eastern Asia	473000	1277558000
Eastern Europe	4380000	146934000
Melanesia	190000	4807000
Micronesia	12000	168000
Micronesia/Caribbean		
Middle East	599000	66591000
Nordic Countries	3200	8861400
North America	7000	278357000
Northern Africa	293000	68470000

Region	MIN(Population)	MAX(Population)
Polynesia	50	235000
South America	2000	170115000
Southeast Asia	328000	212107000
Southern Africa	1008000	40377000
Southern Europe	1000	57680000
Southern and Central Asia	286000	1013662000
Western Africa	6000	111506000
Western Europe	32300	82164700

World 2-6

```
SELECT
    Region,
    SUM(Population)
FROM Country
GROUP BY Region
;
```

Region	SUM(Population)
Antarctica	
Australia and New Zealand	22753100
Baltic Countries	7561900
British Islands	63398500
Caribbean	38140000
Central Africa	95652000
Central America	135221000
Eastern Africa	246999000
Eastern Asia	1507328000
Eastern Europe	307026000
Melanesia	6472000
Micronesia	543000
Micronesia/Caribbean	
Middle East	188380700

Region	SUM(Population)
Nordic Countries	24166400
North America	309632000
Northern Africa	173266000
Polynesia	633050
South America	345780000
Southeast Asia	518541000
Southern Africa	46886000
Southern Europe	144674200
Southern and Central Asia	1490776000
Western Africa	221672000
Western Europe	183247600

03 DISTINCT Aggregates

World 3-1

```
SELECT COUNT(HeadOfState)
  FROM Country
  ;
```

COUNT(HeadOfState)

238

World 3-2

```
SELECT HeadOfState
  FROM Country
  ORDER BY HeadOfState
  ;
```

HeadOfState
Abdelaziz Bouteflika
Abdiqassim Salad Hassan
Abdoulaye Wade

HeadOfState

Abdullah II

Abdurrahman Wahid

Adolf Ogi

Ahmed Tejan Kabbah

Ahmet Necdet Sezer

Akihito

Albert II

Aleksander Kwasniewski

Alfonso Portillo Cabrera

Ali Abdallah Salih

Ali Mohammad Khatami-Ardakani

Aljaksandr Luka□enka

Alpha Oumar Konaré

Andrés Pastrana Arango

Ange-Félix Patassé

Ante Jelavic

António Mascarenhas Monteiro

Arnoldo Alemán Lacayo

Arthur N. R. Robinson

Askar Akajev

Azali Assoumani

Bakili Muluzi

Bashar al-Assad

Beatrix

Beatrix

Beatrix

Benjamin William Mkapa

Bernard Dowiyogo

Bharrat Jagdeo

Bhumibol Adulyadej

HeadOfState

Blaise Compaoré

Boris Trajkovski

Carl XVI Gustaf

Carlo Azeglio Ciampi

Carlos Roberto Flores Facussé

Cassam Uteem

Chandrika Kumaratunga

Charles Taylor

Chen Shui-bian

Daniel arap Moi

Denis Sassou-Nguesso

Didier Ratsiraka

Eduard □evardnadze

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

Elisabeth II

HeadOfState
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Elisabeth II
Emomali Rahmonov
Fahd ibn Abdul-Aziz al-Sa´ud
Ferenc Mádl
Fernando Henrique Cardoso
Fernando de la Rúa
Festus G. Mogae
Fidel Castro Ruz
France-Albert René
Francisco Guillermo Flores Pérez
Frederick Chiluba
George W. Bush
George W. Bush

HeadOfState

George W. Bush

George W. Bush

George W. Bush

George W. Bush

George W. Bush

Glafkos Klerides

Gloria Macapagal-Arroyo

Gnassingbé Eyadéma

Guido de Marco

Gustavo Noboa Bejarano

Gyanendra Bir Bikram

Haji Hassan al-Bolkiah

Hamad ibn Isa al-Khalifa

Hamad ibn Khalifa al-Thani

Hans-Adam II

Harald V

Harald V

Harald V

Henri

Heydär Äliyev

Hipólito Mejía Domínguez

Hosni Mubarak

Hugo Bánzer Suárez

Hugo Chávez Frías

Idriss Déby

Ion Iliescu

Isayas Afewerki [Isaias Afwerki]

Islam Karimov

Ismail Omar Guelleh

Jabir al-Ahmad al-Jabir al-Sabah

HeadOfState

Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jacques Chirac
Jean-Bertrand Aristide
Jiang Zemin
Jiang Zemin
Jiang Zemin
Jigme Singye Wangchuk
Joaquím A. Chissano
Johannes Paavali II
Johannes Rau
John Bani
John Kufuor
Jorge Batlle Ibáñez
Jorge Sampãio
Josefa Iloilo
Joseph Kabila
José Alexandre Gusmão
José Eduardo dos Santos
Juan Carlos I
Kessai Note
Khamtay Siphandone

HeadOfState

Kim Dae-jung
Kim Jong-il
Kocheril Raman Narayanan
Kostis Stefanopoulos
Kumba Ialá
Kuniwo Nakamura
Lansana Conté
Laurent Gbagbo
Lennart Meri
Leo A. Falcam
Leonid Kut☐ma
Letsie III
Luis Ángel González Macchi
Maaouiya Ould Sid´Ahmad Taya
Malietoa Tanumafili II
Mamadou Tandja
Margrethe II
Margrethe II
Margrethe II
Mary McAleese
Mathieu Kérékou
Maumoon Abdul Gayoom
Miguel Trovoada
Miguel Ángel Rodríguez Echeverría
Milan Kucan
Mireya Elisa Moscoso Rodríguez
Mohammad Omar
Mohammad Rafiq Tarar
Mohammed Abdel Aziz
Mohammed VI

HeadOfState

Moshe Katzav
Mswati III
Muammar al-Qadhafi
Natsagiin Bagabandi
Negasso Gidada
Norodom Sihanouk
Nursultan Nazarbajev
Olusegun Obasanjo
Omar Bongo
Omar Hassan Ahmad al-Bashir
Paul Biya
Paul Kagame
Petar Stojanov
Pierre Buyoya
Qabus ibn Sa´id
Rainier III
Rexhep Mejdani
Ricardo Lagos Escobar
Robert G. Mugabe
Robert Kot□arjan
Ronald Venetiaan
Rudolf Schuster
Saddam Hussein al-Takriti
Salahuddin Abdul Aziz Shah Alhaj
Sam Nujoma
Saparmurad Nijazov
Sellapan Rama Nathan
Shahabuddin Ahmad
Tarja Halonen
Taufa´ahau Tupou IV

HeadOfState
Teburoro Tito
Teodoro Obiang Nguema Mbasogo
Thabo Mbeki
Thomas Klestil
Trân Duc Luong
Vaira Vike-Freiberga
Valdas Adamkus
Valentin Paniagua Corazao
Vernon Shaw
Vicente Fox Quesada
Vladimir Putin
Vladimir Voronin
Vojislav Ko□tunica
Václav Havel
Yahya Jammeh
Yasser (Yasir) Arafat
Yoweri Museveni
Zayid bin Sultan al-Nahayan
Zine al-Abidine Ben Ali
kenraali Than Shwe
□tipe Mesic
Émile Lahoud
Ólafur Ragnar Grímsson

World 3-3

```
SELECT COUNT(DISTINCT HeadOfState)
  FROM Country
  ;
```

COUNT(DISTINCT HeadOfState)

COUNT(DISTINCT HeadOfState)

179

--Provide at least 3 screenshots as part of HOP submission.

```
PS D:\School\_4_Summer_2022\IS456\S_DB\db> sqlite3 world.db
SQLite version 3.39.1 2022-07-13 19:41:41
Enter ".help" for usage hints.
sqlite> .output 'HOP05_World_2_1.txt'
sqlite> .headers ON
sqlite> SELECT COUNT(*) FROM Country;
sqlite> .output 'HOP05_World_2_2.txt'
sqlite> .headers ON
sqlite> SELECT COUNT(Population) FROM Country;
sqlite> .output 'HOP05_World_2_3.txt'
sqlite> .headers ON
sqlite> SELECT AVG(Population) FROM Country;
sqlite> .output 'HOP05_World_2_4.txt'
sqlite> .headers ON
sqlite> SELECT Region, AVG(Population) FROM Country GROUP BY Region;
sqlite> .output 'HOP05_World_2_5.txt'
sqlite> .headers ON
sqlite> SELECT Region, MIN(Population), MAX(Population) FROM Country GROUP BY Region;
sqlite> .output 'HOP05_World_2_6.txt'
sqlite> .headers ON
sqlite> SELECT Region, SUM(Population) FROM Country GROUP BY Region;
sqlite> -- 03 DISTINCT Aggregates
sqlite> -- world.db
sqlite> .output 'HOP05_World_3_1.txt'
sqlite> .headers ON
sqlite> SELECT COUNT(HeadOfState) FROM Country;
sqlite> .output 'HOP05_World_3_2.txt'
sqlite> .headers ON
sqlite> SELECT HeadOfState FROM Country ORDER BY HeadOfState;
sqlite> .output 'HOP05_World_3_3.txt'
sqlite> .headers ON
sqlite> SELECT COUNT(DISTINCT HeadOfState) FROM Country;
sqlite>
```

--Write a 150-word summary to explain your understandings and findings from this lab assignment.

What I learned from this week's hands on practice was that adding SQLite to path and configuring a JSON file with the locations of my databases I can run queries from anywhere on my computer. I already knew how to do aggregation and functions within functions. I was really hoping this class would have taught me more about how connect databases from SQL to other programs for more of a full stack type development. Alas that seems like a wish that will never happen. So, I'll have to figure it out myself.