

Aggregation in SQL

QUESTION 1

Count how many cities are there in each country?

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- college
- company_db
- company_md
- db_name
- employee
- mitesh
- orders
- pw_skills
- pwskills
- sakila
- sys
- world
 - Tables
 - city
 - country
 - countrylanguage
 - Views
 - Stored Procedures
 - Functions
- xyz

Administration Schemas

Information

No object selected

SQL File 15*

```
1 use world ;
2 select * from country;
3 select name from country;
4 select sum(population)/1000000000 as pop_bn from country;
5 select count(name) as no_of_countries from country;
6 select count(distinct continent) as no_of_countries from country;
7 USE world;
8
9 SELECT CountryCode, COUNT(*) AS total_cities
10 FROM city
11 GROUP BY CountryCode;
```

Result Grid

CountryCode	total_cities
ABW	1
AFG	4
AGO	5
AIA	2
ALB	1
AND	1
ANT	1
ARE	5
ARG	57

Result 15 x

Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 16	13:47:57	select count(name) as no_of_countries from country	1 row(s) returned	0.000 sec / 0.000 sec
✓ 17	13:47:57	select count(distinct continent) as no_of_countries from country	1 row(s) returned	0.000 sec / 0.000 sec
✓ 18	18:55:54	SELECT CountryCode, COUNT(*) AS total_cities FROM city GROUP BY CountryCode	232 row(s) returned	0.032 sec / 0.000 sec

Object Info Session

QUESTION 2

Display all continents having more than 30 countries.

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

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Administration Schemas

Information

No object selected

SQL File 15* x

```
3 • select name from country;
4 • select sum(population)/1000000000 as pop_bn from country;
5 • select count(name) as no_of_countries from country;
6 • select count(distinct continent) as no_of_countries from country;
7 • USE world;
8
9 • SELECT CountryCode, COUNT(*) AS total_cities
10 FROM city
11 GROUP BY CountryCode;
12
13 ## QUESTION 2
14
15 • USE world;
16
17 • SELECT Continent, COUNT(*) AS total_countries
18 FROM country;
```

Result Grid

Continent	total_countries
North America	37
Asia	51
Africa	58
Europe	46

Result 16 x

Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 17	13:47:57	select count(distinct continent) as no_of_countries from country	1 row(s) returned	0.000 sec / 0.000 sec
✓ 18	18:55:54	SELECT CountryCode, COUNT(*) AS total_cities FROM city GROUP BY CountryCode	232 row(s) returned	0.032 sec / 0.000 sec
✓ 19	19:02:26	SELECT Continent, COUNT(*) AS total_countries FROM country GROUP BY Continent HAVING COUNT(*) ...	4 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

QUESTION 3

List regions whose total population exceeds 200 million

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

File Edit View Query Database Server Tools Scripting Help

Navigator

SQL File 15*

Don't Limit

```
17 • SELECT Continent, COUNT(*) AS total_countries
18 FROM country
19 GROUP BY Continent
20 HAVING COUNT(*) > 30;
21
22 ## QUESTION 3
23
24 • USE world;
25
26 • SELECT Region, SUM(Population) AS total_population
27 FROM country
28 GROUP BY Region
29 HAVING SUM(Population) > 200000000;
30
31
```

Result Grid

Region	total_population
Southern and Central Asia	1490776000
South America	345780000
Eastern Africa	246999000
Western Africa	221672000
Eastern Europe	307026000
North America	309632000
Southeast Asia	518541000
Eastern Asia	1507328000

Output

Action Output

#	Time	Action	Message	Duration / Fetch
18	18:55:54	SELECT CountryCode, COUNT(*) AS total_cities FROM city GROUP BY CountryCode	232 row(s) returned	0.032 sec / 0.000 sec
19	19:02:26	SELECT Continent, COUNT(*) AS total_countries FROM country GROUP BY Continent HAVING COUNT(*) ...	4 row(s) returned	0.016 sec / 0.000 sec
20	19:03:58	SELECT Region, SUM(Population) AS total_population FROM country GROUP BY Region HAVING SUM(P...	8 row(s) returned	0.000 sec / 0.000 sec

QUESTION 4

Find the top 5 continents by average GNP per country

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

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Administration Schemas

Information

No object selected

SQL File 15*

25

```
26 • SELECT Region, SUM(Population) AS total_population
27 FROM country
28 GROUP BY Region
29 HAVING SUM(Population) > 200000000;
30
31
32 ## QUESTION 4
33 • USE world;
34
35 • SELECT Continent, AVG(GNP) AS avg_gnp
36 FROM country
37 GROUP BY Continent
38 ORDER BY avg_gnp DESC
39 LIMIT 5;
40
```

Result Grid

Continent	avg_gnp
North America	261854.789189
Europe	206497.065217
Asia	150105.725490
South America	107991.000000
Oceania	14991.953571

Export recordset to an external file

Result 18 x

Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 19	19:02:26	SELECT Continent, COUNT(*) AS total_countries FROM country GROUP BY Continent HAVING COUNT(*) ...	4 row(s) returned	0.016 sec / 0.000 sec
✓ 20	19:03:58	SELECT Region, SUM(Population) AS total_population FROM country GROUP BY Region HAVING SUM(P...	8 row(s) returned	0.000 sec / 0.000 sec
✓ 21	19:06:15	SELECT Continent, AVG(GNP) AS avg_gnp FROM country GROUP BY Continent ORDER BY avg_gnp DE...	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

QUESTION 5

Find the total number of official languages spoken in each continent.

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

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Navigator

SCHEMAS

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Administration Schemas

Information

No object selected

SQL File 15*

```

37 GROUP BY Continent
38 ORDER BY avg_gnp DESC
39 LIMIT 5;
40
41 ## QUESTION 5
42
43 • USE world;
44
45 • SELECT c.Continent,
46        COUNT(DISTINCT cl.Language) AS total_official_languages
47 FROM country c
48 JOIN countrylanguage cl
49   ON c.Code = cl.CountryCode
50 WHERE cl.IsOfficial = 'T'
51 GROUP BY c.Continent;
52

```

Result Grid

Continent	total_official_languages
Asia	38
Europe	36
North America	7
Africa	20
Oceania	13
South America	6

Result 19 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
20	19:03:58	SELECT Region, SUM(Population) AS total_population FROM country GROUP BY Region HAVING SUM(P...	8 row(s) returned	0.000 sec / 0.000 sec
21	19:06:15	SELECT Continent, AVG(GNP) AS avg_gnp FROM country GROUP BY Continent ORDER BY avg_gnp DE...	5 row(s) returned	0.000 sec / 0.000 sec
22	19:08:26	SELECT c.Continent, COUNT(DISTINCT cl.Language) AS total_official_languages FROM country c JO...	6 row(s) returned	0.031 sec / 0.000 sec

Object Info Session

QUESTION 6

Find the maximum and minimum GNP for each continent

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

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Navigator

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Administration Schemas

Information

No object selected

Object Info Session

SQL File 15*

```

46      COUNT(DISTINCT c1.Language) AS total_official_languages
47  FROM country c
48  JOIN countrylanguage c1
49    ON c.Code = c1.CountryCode
50  WHERE c1.IsOfficial = 'T'
51  GROUP BY c.Continent;
52
53  ## QUESTION 6
54  • USE world;
55
56  • SELECT Continent,
57      MAX(GNP) AS max_gnp,
58      MIN(GNP) AS min_gnp
59  FROM country
60  GROUP BY Continent;
61

```

Result Grid

Continent	max_gnp	min_gnp
North America	8510700.00	0.00
Asia	3787042.00	0.00
Africa	116729.00	0.00
Europe	2133367.00	0.00
South America	776739.00	0.00
Oceania	351182.00	0.00
Antarctica	0.00	0.00

Result 20 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
21	19:06:15	SELECT Continent, AVG(GNP) AS avg_gnp FROM country GROUP BY Continent ORDER BY avg_gnp DE...	5 row(s) returned	0.000 sec / 0.000 sec
22	19:08:26	SELECT c.Continent, COUNT(DISTINCT cl.Language) AS total_official_languages FROM country c JO...	6 row(s) returned	0.031 sec / 0.000 sec
23	19:09:51	SELECT Continent, MAX(GNP) AS max_gnp, MIN(GNP) AS min_gnp FROM country GROUP BY C...	7 row(s) returned	0.016 sec / 0.000 sec

QUESTION 7

Find the country with the highest average city population.

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

File Edit View Query Database Server Tools Scripting Help

SQL File 15*

61

62 ## QUESTION 7

63 • USE world;

64

65 • SELECT c.Name AS country_name,

66 AVG(ci.Population) AS avg_city_population

67 FROM country c

68 JOIN city ci

69 ON c.Code = ci.CountryCode

70 GROUP BY c.Name

71 ORDER BY avg_city_population DESC

72 LIMIT 1;

73

74

75

76

Result Grid

	country_name	avg_city_population
▶	Singapore	4017733.0000

Administration Schemas

Information

No object selected

Object Info Session

Output

Action Output

#	Time	Action	Message	Duration / Fetch
22	19:08:26	SELECT c.Continent, COUNT(DISTINCT ci.Language) AS total_official_languages FROM country c JO...	6 row(s) returned	0.031 sec / 0.000 sec
23	19:09:51	SELECT Continent, MAX(GNP) AS max_gnp, MIN(GNP) AS min_gnp FROM country GROUP BY C...	7 row(s) returned	0.016 sec / 0.000 sec
24	19:11:26	SELECT c.Name AS country_name, AVG(ci.Population) AS avg_city_population FROM country c JOIN...	1 row(s) returned	0.031 sec / 0.000 sec

QUESTION 8

List continents where the average city population is greater than 200,000

ANSWER

MySQL Workbench

pw_skills_OA_Batch x

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Administration Schemas

Information: No object selected

SQL File 15*

```
69 ON c.Code = ci.CountryCode
70 GROUP BY c.Name
71 ORDER BY avg_city_population DESC
72 LIMIT 1;
73
74 ## QUESTION 8
75 • USE world;
76
77 • SELECT c.Continent,
78       AVG(ci.Population) AS avg_city_population
79 FROM country c
80 JOIN city ci
81     ON c.Code = ci.CountryCode
82 GROUP BY c.Continent
83 HAVING AVG(ci.Population) > 200000;
84
```

Result Grid

Continent	avg_city_population
North America	289587.5749
Asia	395019.3109
Africa	371143.6585
Europe	287684.6766
South America	366037.9979
Oceania	252475.4364

Result 22 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
23	19:09:51	SELECT Continent, MAX(GNP) AS max_gnp, MIN(GNP) AS min_gnp FROM country GROUP BY C...	7 row(s) returned	0.016 sec / 0.000 sec
24	19:11:26	SELECT c.Name AS country_name, AVG(ci.Population) AS avg_city_population FROM country c JOIN...	1 row(s) returned	0.031 sec / 0.000 sec
25	19:13:35	SELECT c.Continent, AVG(ci.Population) AS avg_city_population FROM country c JOIN city ci ON c...	6 row(s) returned	0.031 sec / 0.000 sec

Object Info Session

QUESTION 9

: Find the total population and average life expectancy for each continent, ordered by average life expectancy descending.

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

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Navigator

Filter objects

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- mitesh
- orders
- pw_skills
- pwskills
- sakila
- sys
- world
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 - city
 - country
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 - Views
 - Stored Procedures
 - Functions
- xyz

Administration Schemas

Information

No object selected

SQL File 15*

```

79 FROM country c
80 JOIN city ci
81 ON c.Code = ci.CountryCode
82 GROUP BY c.Continent
83 HAVING AVG(ci.Population) > 200000;
84
85 ## QUESTION 9
86 • USE world;
87
88 • SELECT Continent,
89       SUM(Population) AS total_population,
90       AVG(LifeExpectancy) AS avg_life_expectancy
91 FROM country
92 GROUP BY Continent
93 ORDER BY avg_life_expectancy DESC;
94

```

Result Grid

Continent	total_population	avg_life_expectancy
Europe	730074600	75.14773
North America	482993000	72.99189
South America	345780000	70.94615
Oceania	30401150	69.71500
Asia	3705025700	67.44118
Africa	784475000	52.57193
Antarctica	0	NULL

Result 23 x

Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
24	19:11:26	SELECT c.Name AS country_name, AVG(ci.Population) AS avg_city_population FROM country c JOIN ci	1 row(s) returned	0.031 sec / 0.000 sec
25	19:13:35	SELECT c.Continent, AVG(ci.Population) AS avg_city_population FROM country c JOIN city ci ON c...	6 row(s) returned	0.031 sec / 0.000 sec
26	19:15:47	SELECT Continent, SUM(Population) AS total_population, AVG(LifeExpectancy) AS avg_life_expe...	7 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

QUESTION 10

Find the top 3 continents with the highest average life expectancy, but only include those where the total population is over 200 million

ANSWER

MySQL Workbench

pw_skills_DA_Batch x

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Navigator

SQL File 15*

91 FROM country
92 GROUP BY Continent
93 ORDER BY avg_life_expectancy DESC;
94
95 ## QUESTION 10
96 • USE world;
97
98 • SELECT Continent,
99 SUM(Population) AS total_population,
100 AVG(LifeExpectancy) AS avg_life_expectancy
101 FROM country
102 GROUP BY Continent
103 HAVING SUM(Population) > 200000000
104 ORDER BY avg_life_expectancy DESC
105 LIMIT 3;
106

Result Grid

Continent	total_population	avg_life_expectancy
Europe	730074600	75.14773
North America	482993000	72.99189
South America	345780000	70.94615

Administration Schemas

Information

No object selected

Result 24 x

Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
25	19:13:35	SELECT c.Continent, AVG(c.Population) AS avg_city_population FROM country c JOIN city ci ON c...	6 row(s) returned	0.031 sec / 0.000 sec
26	19:15:47	SELECT Continent, SUM(Population) AS total_population, AVG(LifeExpectancy) AS avg_life_expe...	7 row(s) returned	0.000 sec / 0.000 sec
27	19:17:11	SELECT Continent, SUM(Population) AS total_population, AVG(LifeExpectancy) AS avg_life_expe...	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session