

Use “World” Database to solve the following questions

(Hint : World Database is inbuilt in SQL Workbench so use code “use world;” to make use of the database)

Question 1 : Count how many cities are there in each country?

Ans:-

The screenshot shows the MySQL Workbench interface with the "Assignment-4 Data" tab selected. In the Navigator pane, the "world" schema is expanded, showing tables like city, country, and countrylanguage. The central query editor contains the following SQL code:

```
1 • Use world;
2
3 #####--Count how many cities are there in each country
4 • select co.Name as Country, count(ci.ID) AS TotalCities
5   from Country co
6   left join City ci
7   on co.code = ci.CountryCode
8   group by co.Name;
9
```

The Result Grid displays the following data:

Country	TotalCities
Aruba	1
Afghanistan	4
Angola	5
Anguilla	2
Albania	1
Andorra	1
Netherlands Antilles	1
United Arab Emirates	5
Argentina	57
Armenia	3
American Samoa	2
Antarctica	0
French Southern ter...	0

The Output pane shows two log entries:

#	Time	Action	Message	Duration / Fetch
12	17:13:49	SELECT co.Name AS Country, COUNT(ci.ID) AS TotalCities FROM Country co LEFT JOIN City ci ON co.C... 239 row(s) returned		0.000 sec / 0.000 sec
13	17:14:53	select co.Name as Country, count(ci.ID) AS TotalCities from Country co left join City ci on co.code = ci.Cou... 239 row(s) returned		0.015 sec / 0.000 sec

Question 2 : Display all continents having more than 30 countries.

Ans:-

The screenshot shows the MySQL Workbench interface with the "Assignment-4 Data" tab selected. In the Navigator pane, the "world" schema is expanded, showing tables like city, country, and countrylanguage. The central query editor contains the following SQL code:

```
10
11 #####--Continents having more than 30 countries
12 • select Continent, COUNT(*) as TotalCountries
13   from Country
14   group by Continent
15   having count(*) > 30;
16
```

The Result Grid displays the following data:

Continent	TotalCountries
North America	37
Asia	51
Africa	58
Europe	46

The Output pane shows two log entries:

#	Time	Action	Message	Duration / Fetch
13	17:14:53	select co.Name as Country, count(ci.ID) AS TotalCities from Country co left join City ci on co.Cou... 239 row(s) returned		0.015 sec / 0.000 sec
14	17:17:31	select Continent, COUNT(*) as TotalCountries from Country group by Continent having count(*) > 30 LIMIT ... 4 row(s) returned		0.000 sec / 0.000 sec

Question 3 : List regions whose total population exceeds 200 million.

Ans:-

The screenshot shows the MySQL Workbench interface with a query editor window titled "Assignment-4 Data". The code is:

```
18 ##### Regions whose total population exceeds 200 million
19 • select Region, sum(Population) as TotalPopulation
20   from Country
21   group by Region
22   having sum(Population) > 200000000;
23
24
```

The result grid shows the following data:

Region	TotalPopulation
Southern and Central Asia	149076000
South America	345780000
Eastern Africa	246999000
Western Africa	221672000
Eastern Europe	307026000
North America	309632000
Southeast Asia	518541000
Eastern Asia	1507328000

The output pane shows two log entries:

#	Time	Action	Message	Duration / Fetch
14	17:17:31	select Continent, COUNT(*) as TotalCountries from Country group by Continent having count(*) > 30 LIMIT ...	4 row(s) returned	0.000 sec / 0.000 sec
15	17:19:38	select Region, sum(Population) as TotalPopulation from Country group by Region having sum(Population) > ...	8 row(s) returned	0.000 sec / 0.000 sec

Question 4 : Find the top 5 continents by average GNP per country.

Ans:-

The screenshot shows the MySQL Workbench interface with a query editor window titled "Assignment-4 Data". The code is:

```
25 ##### Top 5 continents by average GNP per country
26 • select Continent, avg(GNP) as AvgGNP
27   from Country
28   group by Continent
29   order by AvgGNP desc
30   limit 5;
31
```

The result grid shows the following data:

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

The output pane shows two log entries:

#	Time	Action	Message	Duration / Fetch
15	17:19:38	select Region, sum(Population) as TotalPopulation from Country group by Region having sum(Population) > ...	8 row(s) returned	0.000 sec / 0.000 sec
16	17:21:42	select Continent, avg(GNP) as AvgGNP from Country group by Continent order by AvgGNP desc limit 5	5 row(s) returned	0.000 sec / 0.000 sec

Question 5 : Find the total number of official languages spoken in each continent

Ans:-

The screenshot shows the MySQL Workbench interface with a query editor window titled "Assignment-4 Data". The code is as follows:

```
33  #####-----Total number of official languages in each continent
34 • select co.Continent, count(cl.Language) as TotalOfficialLanguages
35   from Country co
36   join CountryLanguage cl
37   on co.Code = cl.CountryCode
38   where cl.Official = 'T'
39   group by co.Continent;
40
```

The result grid displays the following data:

Continent	TotalOfficialLanguages
North America	35
Asia	57
Europe	59
South America	16
Oceania	33
Africa	38

The "Result 13" pane shows the following log entries:

#	Time	Action	Message	Duration / Fetch
16	17:21:42	select Continent, avg(GNP) as AvgGNP from Country group by Continent order by AvgGNP desc limit 5	5 row(s) returned	0.000 sec / 0.000 sec
17	17:24:33	select co.Continent, count(cl.Language) as TotalOfficialLanguages from Country co join CountryLanguage ...	6 row(s) returned	0.000 sec / 0.000 sec

Question 6 : Find the maximum and minimum GNP for each continent.

Ans:-

The screenshot shows the MySQL Workbench interface with a query editor window titled "Assignment-4 Data". The code is as follows:

```
41
42  #####-----Maximum and minimum GNP for each continent
43 • select Continent,
44   max(GNP) as MaxGNP,
45   min(GNP) as MinGNP
46   from Country
47   group by Continent;
48
```

The result grid displays the following data:

Continent	MaxGNP	MinGNP
North America	8510700.00	0.00
Asia	378042.00	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

The "Result 14" pane shows the following log entries:

#	Time	Action	Message	Duration / Fetch
17	17:24:33	select co.Continent, count(cl.Language) as TotalOfficialLanguages from Country co join CountryLanguage ...	6 row(s) returned	0.000 sec / 0.000 sec
18	17:27:09	select Continent, max(GNP) as MaxGNP, min(GNP) as MinGNP from Country group by Continent LIMIT 0, 2...	7 row(s) returned	0.000 sec / 0.000 sec

Question 7 : Find the country with the highest average city population.

Ans:-

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Schemas (company_db, dummy_company_db, employee_db, employees, physcwallah, populate_sales, sakila, students_data, sys, world), Tables (city, country, countrylanguage), Views, Stored Procedures, Functions.
- Query Editor:** Assignment-4 Data tab, SQL code:

```
50  #####Country with the highest average city population
51  • select co.Name as Country, avg(ci.Population) as AvgCityPopulation
52  from Country co
53  join City ci
54  on co.Code = ci.CountryCode
55  group by co.Name
56  order by AvgCityPopulation desc
57  limit 1;
```
- Result Grid:** Shows the result for Singapore with an average city population of 4017733.0000.
- Action Output:** Log of actions:

#	Time	Action	Message	Duration / Fetch
18	17:27:09	select Continent, max(GNP) as MaxGNP, min(GNP) as MinGNP from Country group by Continent LIMIT 0, 2...	7 row(s) returned	0.000 sec / 0.000 sec
19	17:29:35	select co.Name as Country, avg(ci.Population) as AvgCityPopulation from Country co join City ci on co.Cod...	1 row(s) returned	0.015 sec / 0.000 sec

Question 8 : List continents where the average city population is greater than 200,000.

Ans:-

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Schemas (company_db, dummy_company_db, employee_db, employees, physcwallah, populate_sales, sakila, students_data, sys, world), Tables (city, country, countrylanguage), Views, Stored Procedures, Functions.
- Query Editor:** Assignment-4 Data tab, SQL code:

```
59
60  #####Continents where average city population > 200,000
61  • select co.Continent, avg(ci.Population) as AvgCityPopulation
62  from Country co
63  join City ci
64  on co.Code = ci.CountryCode
65  group by co.Continent
66  having avg(ci.Population) > 200000;
```
- Result Grid:** Shows the average city population for six continents: North America (289587.5749), Asia (395019.3109), Africa (371143.6585), Europe (287684.6766), South America (366037.9979), and Oceania (252475.4364).
- Action Output:** Log of actions:

#	Time	Action	Message	Duration / Fetch
19	17:29:35	select co.Name as Country, avg(ci.Population) as AvgCityPopulation from Country co join City ci on co.Cod...	1 row(s) returned	0.015 sec / 0.000 sec
20	17:31:43	select co.Continent, avg(ci.Population) as AvgCityPopulation from Country co join City ci on co.Code = ci.C...	6 row(s) returned	0.015 sec / 0.000 sec

Question 9 : Find the total population and average life expectancy for each continent, ordered by average life expectancy descending.

Ans:-

The screenshot shows the MySQL Workbench interface with a query editor window titled "Assignment-4 Data". The code is:

```
67
68  #####-----Total population & average life expectancy for each continent
69 • select Continent,
70   sum(Population) as TotalPopulation,
71   avg(LifeExpectancy) as AvgLifeExpectancy
72   from Country
73   group by Continent
74   order by AvgLifeExpectancy desc;
```

The result grid displays the following data:

Continent	TotalPopulation	AvgLifeExpectancy
Europe	730074600	75.14773
North America	482993000	72.99189
South America	345780000	70.94615
Oceania	30401150	69.7150
Asia	370525700	67.44118
Africa	784475000	52.57193
Antarctica	0	N/A

The output pane shows two log entries:

#	Time	Action	Message	Duration / Fetch
20	17:31:43	select co.Continent, avg(co.Population) as AvgCtyPopulation from Country co join City ci on co.Code = ci.C...	6 row(s) returned	0.015 sec / 0.000 sec
21	17:35:30	select Continent, sum(Population) as TotalPopulation, avg(LifeExpectancy) as AvgLifeExpectancy from Cou...	7 row(s) returned	0.000 sec / 0.000 sec

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.

Ans:-

The screenshot shows the MySQL Workbench interface with a query editor window titled "Assignment-4 Data". The code is:

```
76  #####-----Top 3 continents with highest avg life expectancy
77 • select Continent,
78   sum(Population) as TotalPopulation,
79   avg(LifeExpectancy) as AvgLifeExpectancy
80   from Country
81   group by Continent
82   having sum(Population) > 200000000
83   order by AvgLifeExpectancy desc
84   limit 3;
```

The result grid displays the following data:

Continent	TotalPopulation	AvgLifeExpectancy
Europe	730074600	75.14773
North America	482993000	72.99189
South America	345780000	70.94615

The output pane shows two log entries:

#	Time	Action	Message	Duration / Fetch
21	17:35:30	select Continent, sum(Population) as TotalPopulation, avg(LifeExpectancy) as AvgLifeExpectancy from Cou...	7 row(s) returned	0.000 sec / 0.000 sec
22	17:38:17	select Continent, sum(Population) as TotalPopulation, avg(LifeExpectancy) as AvgLifeExpectancy from Cou...	3 row(s) returned	0.000 sec / 0.000 sec