

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. The SQL editor contains the following query:

```
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 shows 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 the execution log:

#	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. The SQL editor contains the following query:

```
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 shows the following data:

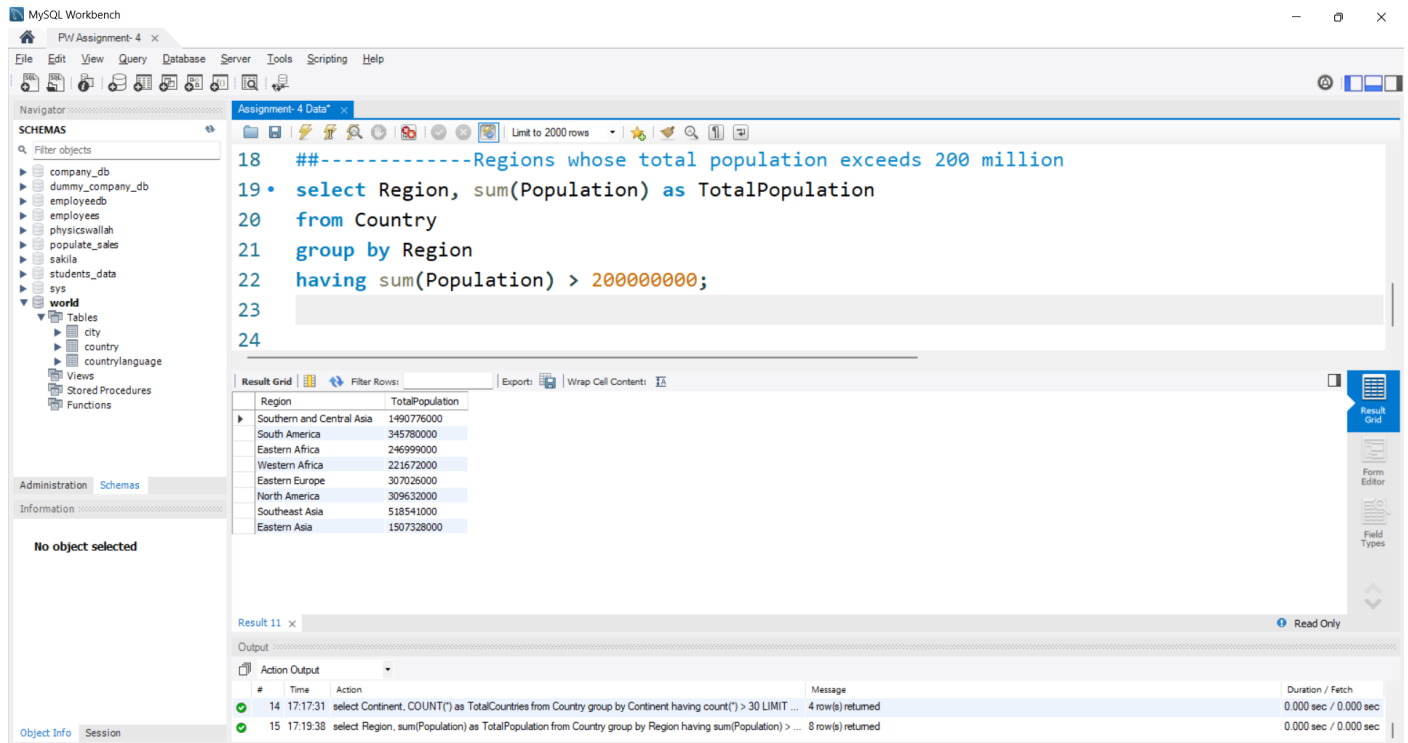
Continent	TotalCountries
North America	37
Asia	51
Africa	58
Europe	46

The Output pane shows the execution log:

#	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.code = ci.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:-



MySQL Workbench interface showing a query execution. The query 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:

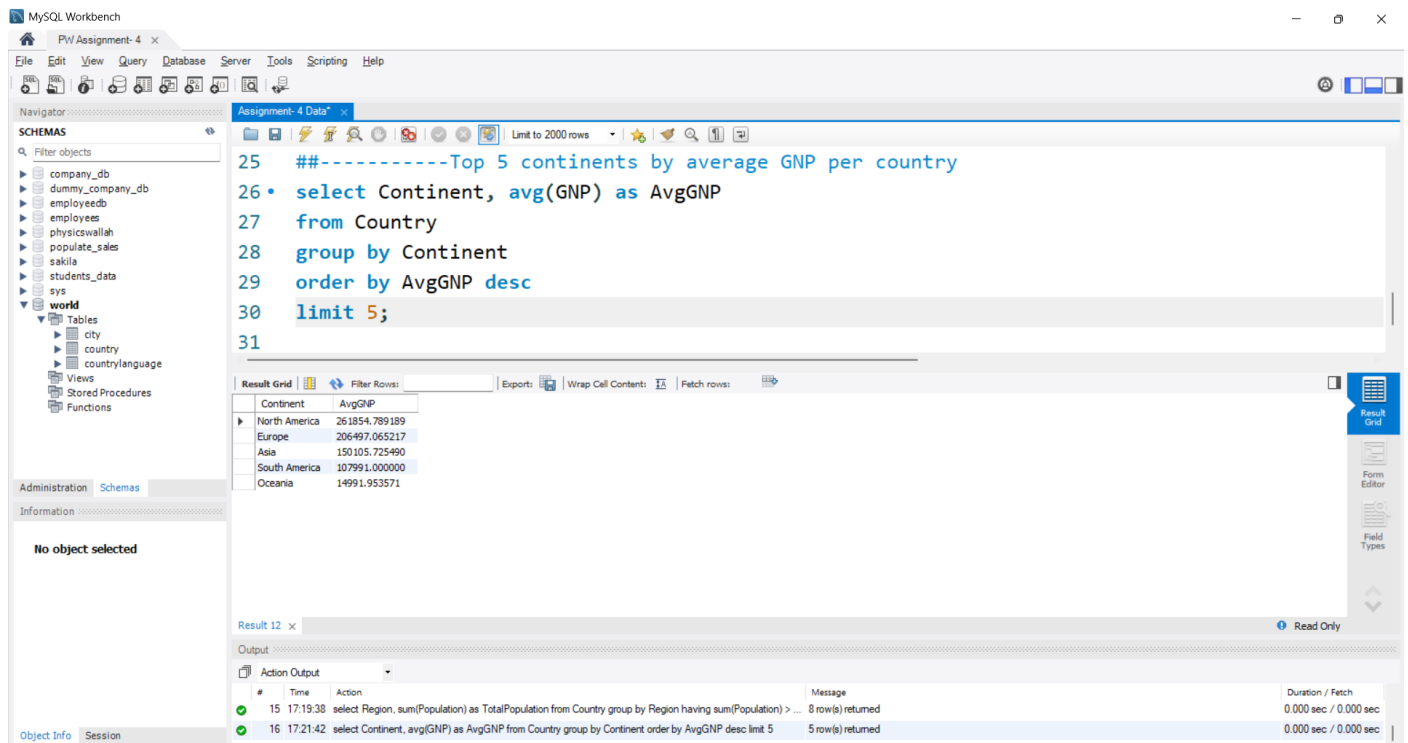
Region	TotalPopulation
Southern and Central Asia	1490776000
South America	345780000
Eastern Africa	246999000
Western Africa	221672000
Eastern Europe	307026000
North America	309632000
Southeast Asia	518541000
Eastern Asia	1507328000

The output pane shows the following messages:

#	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:-



MySQL Workbench interface showing a query execution. The query 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 the following messages:

#	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. The query editor contains the following SQL code:

```
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.IsOfficial = 'T'
39 group by co.Continent;
40
```

The Result Grid shows the following data:

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

The Output pane shows the execution log with two messages:

- 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. The query editor contains the following SQL code:

```
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 shows the following data:

Continent	MaxGNP	MinGNP
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

The Output pane shows the execution log with two messages:

- 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. The left sidebar displays the 'SCHEMAS' panel with a tree view of databases including 'company_db', 'dummy_company_db', 'employees', 'physicwallah', 'populate_sales', 'sakila', 'students_data', 'sys', and 'world'. The 'world' database is selected, showing tables like 'city', 'country', and 'countrylanguage'. The main editor window contains a SQL query:

```
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;
```

The 'Result Grid' at the bottom shows the output of the query:

Country	AvgCityPopulation
Singapore	4017733.0000

The 'Output' panel at the bottom shows the execution log with two entries:

#	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. The left sidebar displays the 'SCHEMAS' panel with a tree view of databases including 'company_db', 'dummy_company_db', 'employees', 'physicwallah', 'populate_sales', 'sakila', 'students_data', 'sys', and 'world'. The 'world' database is selected, showing tables like 'city', 'country', and 'countrylanguage'. The main editor window contains a SQL query:

```
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;
```

The 'Result Grid' at the bottom shows the output of the query:

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

The 'Output' panel at the bottom shows the execution log with two entries:

#	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. The SQL editor contains the following query:

```
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 Results Grid shows the following data:

Continent	TotalPopulation	AvgLifeExpectancy
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	0.00000

The Output pane shows the execution log with the following messages:

```
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
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. The SQL editor contains the following query:

```
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 Results Grid shows the following data:

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

The Output pane shows the execution log with the following messages:

```
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
```