

From the world table, answer the following questions. Include a screenshot of your results that includes your SQL code, your output table, and the number of rows returned.

1. From the country table how many records do not have a listed life expectancy?
That is, how many records have a life expectancy of null?

The screenshot shows the MySQL Workbench interface. The 'Navigator' pane on the left displays the 'world' database schema, including tables like 'city', 'country', and 'countrylanguage'. The 'Query Editor' pane shows the following SQL query:

```
1 SELECT COUNT(*) AS num_records_with_null_life_expectancy
2 FROM world.country
3 WHERE lifeExpectancy IS NULL;
```

The 'Result Grid' pane shows the output of the query:

num_records_with_null_life_expectancy
17

The 'Output' pane at the bottom shows the execution message:

#	Time	Action	Message
1	21:50:45	SELECT COUNT(*) AS num_records_with_null_life_expectancy FROM wor...	1 row(s) returned

2. Give me a list of all the countries that do not have a head of country listed (give me all the columns)

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- sakila
- sys
- world
 - Tables
 - city
 - country
 - countrylanguage
 - Views
 - Stored Procedures
 - Functions

Query 1 x

```
1 SELECT *
2 FROM world.country
3 WHERE headOfState IS NULL;
```

Result Grid

	Code	Name	Continent	Region	SurfaceArea	IndepYear	Population	LifeExpectancy	GDP
▶	SMR	San Marino	Europe	Southern Europe	61.00	885	27000	81.1	510.0
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

country 2 x

Apply

Administration Schemas

Information

Table: city

Columns:

ID	int AI
Name	PK
CountryCode	char(35)
District	char(3)
Population	char(20)
	int

Object Info Session

Output

Action Output

#	Time	Action	Message
1	21:51:35	SELECT * FROM world.country WHERE headOfState IS NULL LIMIT 0, 1...	1 row(s) returned

3. Give me a list of all the countries whose GNP has shrunk (that is, where GNP is less than GNPOld)

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Schemas

Filter objects

- sakila
- sys
- world
 - Tables
 - city
 - country
 - countrylanguage
 - Views
 - Stored Procedures
 - Functions

Query 1 x

```
1 SELECT *
2 FROM world.country
3 WHERE GNP < GNPOld;
```

Limit to 1000 rows

Result Grid

	Code	Name	Continent	Region	SurfaceArea	IndepYear	Population	LifeExpe
▶	AGO	Angola	Africa	Central Africa	1246700.00	1975	12878000	38.3
	AUS	Australia	Oceania	Australia and New Zealand	7741220.00	1901	18886000	79.8
	BDI	Burundi	Africa	Eastern Africa	27834.00	1962	6695000	46.2
	BRA	Brazil	South America	South America	8547403.00	1822	170115000	62.9
	BRN	Brunei	Asia	Southeast Asia	5765.00	1984	328000	73.6
	BTN	Bhutan	Asia	Southern and Central Asia	47000.00	1910	2124000	52.4
	BWA	Botswana	Africa	Southern Africa	581730.00	1966	1622000	39.3
	CAN	Canada	North America	North America	9970610.00	1867	31147000	79.4
	CHL	Chile	South America	South America	756626.00	1810	15211000	75.7

country 4 x

Apply

Administration Schemas

Information

Table: city

Columns:

- ID int AI PK
- Name char(35)
- CountryCode char(3)
- District char(20)
- Population int

Object Info Session

Output

Action Output

#	Time	Action	Message
✓ 1	21:52:37	SELECT * FROM world.country WHERE GNP < GNPOld LIMIT 0, 1000	63 row(s) returned

4. Give me the name, continent, and government form of every country that lists some kind of republic as its government form (HINT, use LIKE or REGEXP)

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- sakila
- sys
- world
 - Tables
 - city
 - country
 - countrylanguage
 - Views
 - Stored Procedures
 - Functions

Query 1 x

```
1 • SELECT name, continent, governmentForm
2 FROM world.country
3 WHERE governmentForm LIKE '%Republic%';
```

Limit to 1000 rows

Result Grid

name	continent	governmentForm
Angola	Africa	Republic
Albania	Europe	Republic
Argentina	South America	Federal Republic
Armenia	Asia	Republic
Austria	Europe	Federal Republic
Azerbaijan	Asia	Republic
Burundi	Africa	Republic
Benin	Africa	Republic
Burkina Faso	Africa	Republic
Bangladesh	Asia	Republic

country 5 x

Read Only

Administration Schemas

Information

Table: city

Columns:

- ID int AI PK
- Name char(35)
- CountryCode char(3)
- District char(20)
- Population int

Object Info Session

Output

Action Output

#	Time	Action	Message
1	21:53:30	SELECT name, continent, governmentForm FROM world.country WHERE ...	143 row(s) returned

5. How many countries speak English (as either an official language or not)?

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- Tables
 - city
 - country
 - Columns
 - Code
 - Name
 - Continent
 - Region
 - SurfaceArea
 - IndepYear
 - Population
 - LifeExpectancy
 - GNP
 - GNPOld
 - LocalName
 - GovernmentF
 - HeadOfState
 - Capital
 - Code2
 - Indexes
 - Foreign Keys
 - Triggers
 - countrylanguage
 - Columns
 - Indexes

Query 1 x

```
1 • SELECT COUNT(*) AS num_english_speaking_countries
2 FROM world.countrylanguage
3 WHERE language LIKE '%English%';
```

Limit to 1000 rows

Result Grid

num_english_speaking_countries
77

Export: | Wrap Cell Content: |

Result 6 x

Read Only

Output

Action Output

#	Time	Action	Message
✓ 1	21:55:06	SELECT COUNT(*) AS num_english_speaking_countries FROM world.cou...	1 row(s) returned

Table: country

Columns:

Code	char(3)
Name	char(5)
Continent	enum(
Region	Americ
SurfaceArea	Americ
IndepYear	char(2)
Population	decima
LifeExpectancy	smallint
GNP	int
GNPOld	decima

Object Info Session

6. How many countries speak English as an official language when English counts for less than 25 percent of the population?

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- ▶ sakila
- ▶ sys
- ▶ world
 - ▶ Tables
 - ▶ city
 - ▶ country
 - ▶ countrylanguage
 - ▶ Columns
 - CountryCode
 - Language
 - IsOfficial
 - Percentage
 - ▶ Indexes
 - ▶ Foreign Keys
 - ▶ Triggers
 - ▶ Views
 - ▶ Stored Procedures
 - ▶ Functions

Query 1 x

```
1 • SELECT COUNT(*) AS num_english_official_language_less_than_25_percent
2 FROM world.countrylanguage
3 WHERE Language = 'English' AND Percentage > 0.25;
```

Result Grid

	num_english_official_language_less_than_25_percent
▶	33

Result 7 x

Read Only

Output

Action Output

#	Time	Action	Message
✓ 1	21:57:23	SELECT COUNT(*) AS num_english_official_language_less_than_25_perc...	1 row(s) returned

Table: country

Columns:

Code	char(3)
Name	char(5)
Continent	enum(Americ, Americ, Americ, Americ, Americ, Americ, Americ, Americ, Americ, Americ)
Region	char(2)
SurfaceArea	decima
IndepYear	smallint
Population	int
LifeExpectancy	decima
GDP	decima

Object Info Session

7. Give me a count of the number of unique regions from the country table (the output should be a single column and a single row with the value of 25). Save the name of the column as 'unique_regions'

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world
 Tables
 city
 country
 countrylanguage
 Views
 Stored Procedures
 Functions

Query 1 x

Limit to 1000 rows

```
1 • SELECT COUNT(DISTINCT Region) AS unique_regions
2 FROM world.country;
```

Result Grid

	unique_regions
▶	25

Result 9 x

Read Only

Administration Schemas

Information

Table: country

Columns:

Code	char(3)
Name	char(50)
Continent	enum(Americ, Asia, Europe, Africa, Oceania, Antarctica)
Region	char(20)
SurfaceArea	decimal(10, 2)
IndepYear	smallint
Population	int
LifeExpectancy	decimal(4, 1)
GDP	decimal(15, 2)

Object Info Session

Output

Action Output

#	Time	Action	Message
✓ 1	21:58:35	SELECT COUNT(DISTINCT Region) AS unique_regions FROM world.cou...	1 row(s) returned

8. Find the average life expectancy of every region (this should be 25 rows with one average per row (HINT, use group by))

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: SCHEMAS

Filter objects

- sakila
- sys
- world
 - Tables
 - city
 - country
 - countrylanguage
 - Views
 - Stored Procedures
 - Functions

Query 1

```
1 • SELECT region, AVG(lifeExpectancy) AS average_life_expectancy
2 FROM world.country
3 GROUP BY region;
```

Result Grid

region	average_life_expectancy
Caribbean	73.05833
Southern and Central Asia	61.35000
Central Africa	50.31111
Southern Europe	76.52857
Middle East	70.56667
South America	70.94615
Polynesia	70.73333
Antarctica	NUL
Australia and New Zealand	78.80000
Western Europe	78.25556

Result 10 x

Read Only

Administration Schemas

Information

Table: country

Columns:

- Code char(3)
- Name char(50)
- Continent enum(1,2,3,4,5,6,7)
- Region Americ
- SurfaceArea char(21)
- IndepYear decima
- Population smallint
- LifeExpectancy int
- LifeExpectancy decima

Object Info Session

Output

Action Output

#	Time	Action	Message
✓ 1	21:59:08	SELECT region, AVG(lifeExpectancy) AS average_life_expectancy FROM ...	25 row(s) returned

9. I am not sure if there is a relation between population density and life expectancy or if I know how to calculate that, but I want to find out. I want you to perform some calculations for me and I will see if the resulting numbers make sense. My goal is to see if there is a relation between population density and life expectancy. The formulas for this will be

a. $\text{density} = \text{population} / \text{surfaceArea}$

b. $\text{coefficientOfRelation} = \text{density} / \text{lifeExpectancy}$

c. Write an SQL statement that retrieves the data that I am asking for; I will interpret the data myself.

d. I want three columns of output: the name of each country, the density you calculated, and the coefficientOfRelation that you calculated. I also want this final column (the coefficientOfRelation) to be renamed to 'answer'.

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world
 Tables
 city
 country
 countrylanguage
 Views
 Stored Procedures
 Functions

Query 1 x

```
1 SELECT
2     name,
3     population / surfaceArea AS density,
4     (population / surfaceArea) / lifeExpectancy AS answer
5 FROM world.country;
```

Result Grid

name	density	answer
Aruba	533.6788	6.80712700
Afghanistan	34.8418	0.75908097
Angola	10.3297	0.26970419
Anguilla	83.3333	1.09505037
Albania	118.3108	1.65238602
Andorra	166.6667	1.99600798
Netherlands Antilles	271.2500	3.63119143
United Arab Emirates	29.1986	0.39404271
Argentina	13.3189	0.17734949
Armenia	118.1208	1.77892779

Result 21 x

Read Only

Administration Schemas

Information

Table: country

Columns:

Column	Data Type
Code	char(3)
Name	char(5)
Continent	enum(Americ, Americ, Americ, Americ, Americ, Americ, Americ, Americ, Americ, Americ)
Region	char(2)
SurfaceArea	decima
IndepYear	smallint
Population	int
LifeExpectancy	decima
GDP	decima

Object Info Session

Output

Action Output

#	Time	Action	Message
1	22:14:07	SELECT name, population / surfaceArea AS density, (population / ...	239 row(s) returned