Contents

MySQL Questions

Write only the exact MySQL command for each question into the appropriate file.

Question A (MySQLQA.txt)

Show the country *Name*, a column entitled *Official* that shows "No" if the language of the country is not official, or "Yes" if the language of the country is official, and a column entitled *Percentage* that shows the total percentage of speakers of non-official languages, or the total percentage of speakers of official languages as appropriate, only for countries in Europe.

The results should be sorted alphabetically by *Name* and within that alphabetically by *Official*.

```
+--------------------------------+----------+------------+
| Name                           | Official | Percentage |
+--------------------------------+----------+------------+
| Albania                        | No       |        1.9 |
| Albania                        | Yes      |       97.9 |
| Andorra                        | No       |       61.6 |
| Andorra                        | Yes      |       32.3 |
| Austria                        | No       |        5.1 |
| Austria                        | Yes      |       92.0 |
| Belarus                        | No       |        1.9 |
| Belarus                        | Yes      |       97.6 |
| Belgium                        | No       |        4.9 |
| Belgium                        | Yes      |       92.8 |
| Bosnia and Herzegovina         | Yes      |       99.2 |
| Bulgaria                       | No       |       15.7 |
| Bulgaria                       | Yes      |       83.2 |
| Croatia                        | No       |        0.0 |
| Croatia                        | Yes      |       95.9 |
| Czech Republic                 | No       |       18.0 |
| Czech Republic                 | Yes      |       81.2 |
| Denmark                        | No       |        2.9 |
| Denmark                        | Yes      |       93.5 |
| Estonia                        | No       |       32.7 |
| Estonia                        | Yes      |       65.3 |
| Faroe Islands                  | Yes      |      100.0 |
| Finland                        | No       |        0.6 |
| Finland                        | Yes      |       98.4 |
```

Figure 1 Example of output required for this question

Question B (MySQLQB.txt)

Show the *personID*, *personname* and *Name* of the country the person is from.

If the *personname* column doesn't contain a comma, then it can be printed as is.

If the *personname* column does contain a comma, then it is in the format:

- *Surname, Firstname*

and should be printed as:

- *Firstname Surname*

(without the comma)

The results should be sorted alphabetically by *personID*.

```
+----------+---------------------+----------------+
| personID | personname          | Name           |
+----------+---------------------+----------------+
|        1 | Mr. Tom Kelleher    | Ireland        |
|        2 | Alan Byrne          | United Kingdom |
|        3 | Dr. Sean Murphy     | United Kingdom |
|        4 | MS. Sara Gallagher  | Ireland        |
|        5 | Jane Smith          | Ireland        |
|        6 | Mr. Michael Mannion | Canada         |
+----------+---------------------+----------------+
6 rows in set (0.00 sec)
```

Figure 2 Example of output required for this question

Question C (MySQLQC.txt)

Show the *personID*, *personname* and a column entitled *City* that contains:

- *Small City* if the city the person is from has a population of between 0 and 49,999
- *Big City* if the city the person is from has a population of between 50,000 and 99,999
- *Large City* if the city the person is from has a population of between 100,000 and 199,999
- *Huge City* if the city the person is from has a population of between 200,000 and 499,999
- *Mega City* if the city the person is from has a population of over 500,000.

The results should be sorted by ascending *personID.*

```
+----------+----------------------+------------+
| personID | personname           | City       |
+----------+----------------------+------------+
|        1 | Mr. Tom Kelleher     | Huge City  |
|        2 | Byrne, Alan          | Mega City  |
|        3 | Dr. Sean Murphy      | Huge City  |
|        4 | MS. Sara Gallagher   | Huge City  |
|        5 | Smith, Jane          | Large City |
|        6 | Mannion, Mr. Michael | Mega City  |
+----------+----------------------+------------+
6 rows in set (0.00 sec)
```

Figure 3 Example of output required for this question

Question D (MySQLQD.txt)

Show the *Continent*, *Name*, and *GNP* of the countries with the highest GNP for each continent. GNPs of 0 should not be included.

The results should be sorted by descending *GNP*, within that alphabetically by *Continent*, and within that alphabetically by *Name*.

```
+---------------+---------------+------------+
| Continent     | Name          | GNP        |
+---------------+---------------+------------+
| North America | United States | 8510700.00 |
| Asia          | Japan         | 3787042.00 |
| Europe        | France        | 2133367.00 |
| Europe        | Germany       | 2133367.00 |
| South America | Brazil        |  776739.00 |
| Oceania       | Australia     |  351182.00 |
| Africa        | South Africa  |  116729.00 |
+---------------+---------------+------------+
7 rows in set (0.00 sec)
```

Figure 4 Example of output required for this question

Question E (MySQLQE.txt)

Show the *personID*, *personname* of each person as well as the *Name* of the city he/she visited, and a column entitled *VisitDuration* which contains:

- *< 1 Year* If the amount of time spent in the city was < 365 days
- *< 2 Years* If the amount of time spent in the city was >= 365 days and < 730 days
- *< 3 Years* If the amount of time spent in the city was >= 730 days and < 1825 days
- *> 3 Years* If the amount of time spent in the city was >= 1825 days

The results should be ordered alphabetically by *Name*, and within that by ascending *personID*.

```
+----------+----------------------+---------------------+---------------+
| personID | personname           | Name                | VisitDuration |
+----------+----------------------+---------------------+---------------+
|        2 | Byrne, Alan          | Arnhem              | < 1 Year      |
|        1 | Mr. Tom Kelleher     | Dordrecht           | < 1 Year      |
|        3 | Dr. Sean Murphy      | Dordrecht           | > 3 Years     |
|        6 | Mannion, Mr. Michael | Guaíba              | < 1 Year      |
|        4 | MS. Sara Gallagher   | Jaunpur             | < 1 Year      |
|        1 | Mr. Tom Kelleher     | Muntinlupa          | < 1 Year      |
|        6 | Mannion, Mr. Michael | Nagoya              | < 2 Years     |
|        2 | Byrne, Alan          | New York            | < 1 Year      |
|        3 | Dr. Sean Murphy      | New York            | < 1 Year      |
|        1 | Mr. Tom Kelleher     | Oranjestad          | < 1 Year      |
|        1 | Mr. Tom Kelleher     | Pouso Alegre        | < 2 Years     |
|        2 | Byrne, Alan          | Purulia             | < 1 Year      |
|        4 | MS. Sara Gallagher   | Saint Helier        | < 1 Year      |
|        6 | Mannion, Mr. Michael | Saint Helier        | < 1 Year      |
|        1 | Mr. Tom Kelleher     | São Lourenço da Mata | < 1 Year     |
|        3 | Dr. Sean Murphy      | Shangqiu            | < 3 Years     |
|        1 | Mr. Tom Kelleher     | Suzhou              | < 1 Year      |
|        2 | Byrne, Alan          | Suzhou              | < 1 Year      |
|        1 | Mr. Tom Kelleher     | Sydney              | < 1 Year      |
|        4 | MS. Sara Gallagher   | Sydney              | < 1 Year      |
|        2 | Byrne, Alan          | Tama                | < 1 Year      |
|        1 | Mr. Tom Kelleher     | Tanjung Pinang      | < 1 Year      |
|        4 | MS. Sara Gallagher   | Zürich              | < 1 Year      |
+----------+----------------------+---------------------+---------------+
23 rows in set (0.00 sec)
```

Figure 5 Example of output required for this question

Question F (MySQLQF.txt)

Show the *personID*, *personname*, and the *name* of any city they have visited, only if the population of that city is greater than the total population of the region of "Micronesia".

Results should be sorted by *personID*, and within that alphabetically by city *name*.

```
+----------+----------------------+----------+
| personID | personname           | name     |
+----------+----------------------+----------+
|        1 | Mr. Tom Kelleher     | Sydney   |
|        2 | Byrne, Alan          | New York |
|        3 | Dr. Sean Murphy      | New York |
|        4 | MS. Sara Gallagher   | Sydney   |
|        6 | Mannion, Mr. Michael | Nagoya   |
+----------+----------------------+----------+
5 rows in set (0.00 sec)
```

Figure 6 Example of output required for this question
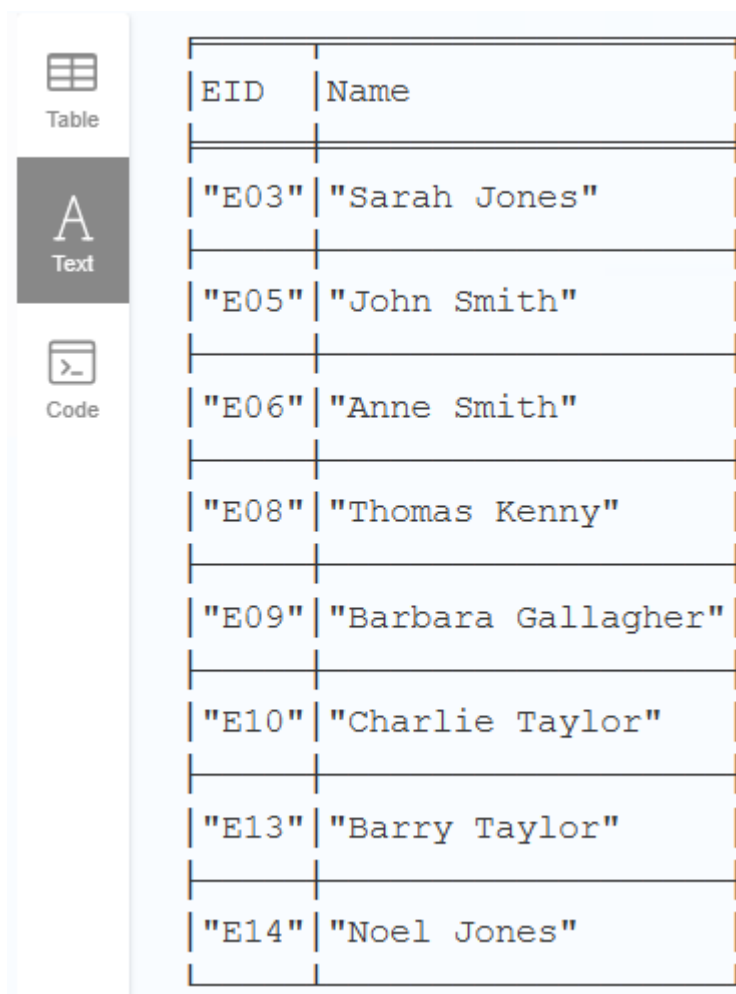
Neo4j Questions

Write only the exact Neo4j/Cypher command for each question into the appropriate file.

Question A (Neo4jQA.txt)

Show the eid (as *EID*) and the name (as *Name*) of all employees whose role is "Engineer", who are a MEMBER_OF a team that WORKS_ON projects that are overseen by "Matthew Quinn".

Results should be sorted alphabetically by *EID*.
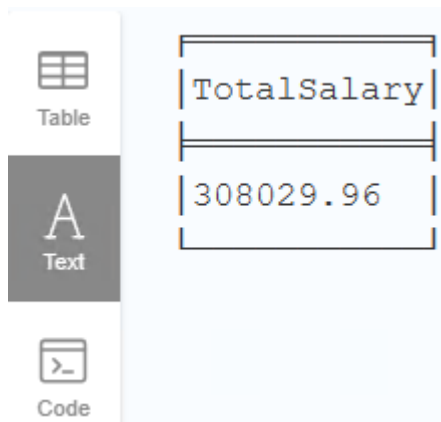
EID	Name
"E03"	"Sarah Jones"
"E05"	"John Smith"
"E06"	"Anne Smith"
"E08"	"Thomas Kenny"
"E09"	"Barbara Gallagher"
"E10"	"Charlie Taylor"
"E13"	"Barry Taylor"
"E14"	"Noel Jones"

Figure 7 Example of output required for this question.

Question B (Neo4jQB.txt)

Show a column entitled *TotalSalary* that contains the total salaries of Employees working on projects in the Department with the largest budget.
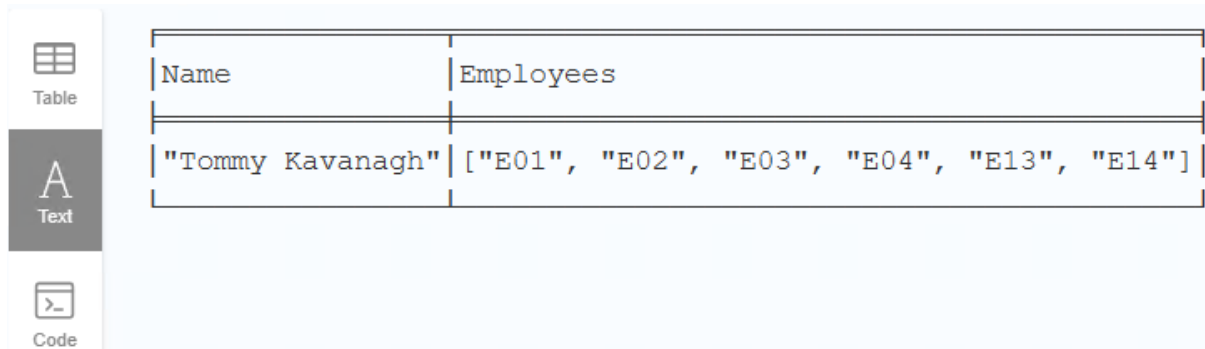
Table	TotalSalary
A Text	308029.96
Code	

Figure 8 Example of output required for this question.

Question C (Neo4jQC.txt)

Show a column entitled *Name* that contains name of the Employee with the eid = "E15", and a column entitled *Employees* that contains the eids of Employees working on projects managed by the Employee with the eid = "E15".

The eids in the *Employees* column should be sorted alphabetically.

Name	Employees
"Tommy Kavanagh"	["E01", "E02", "E03", "E04", "E13", "E14"]
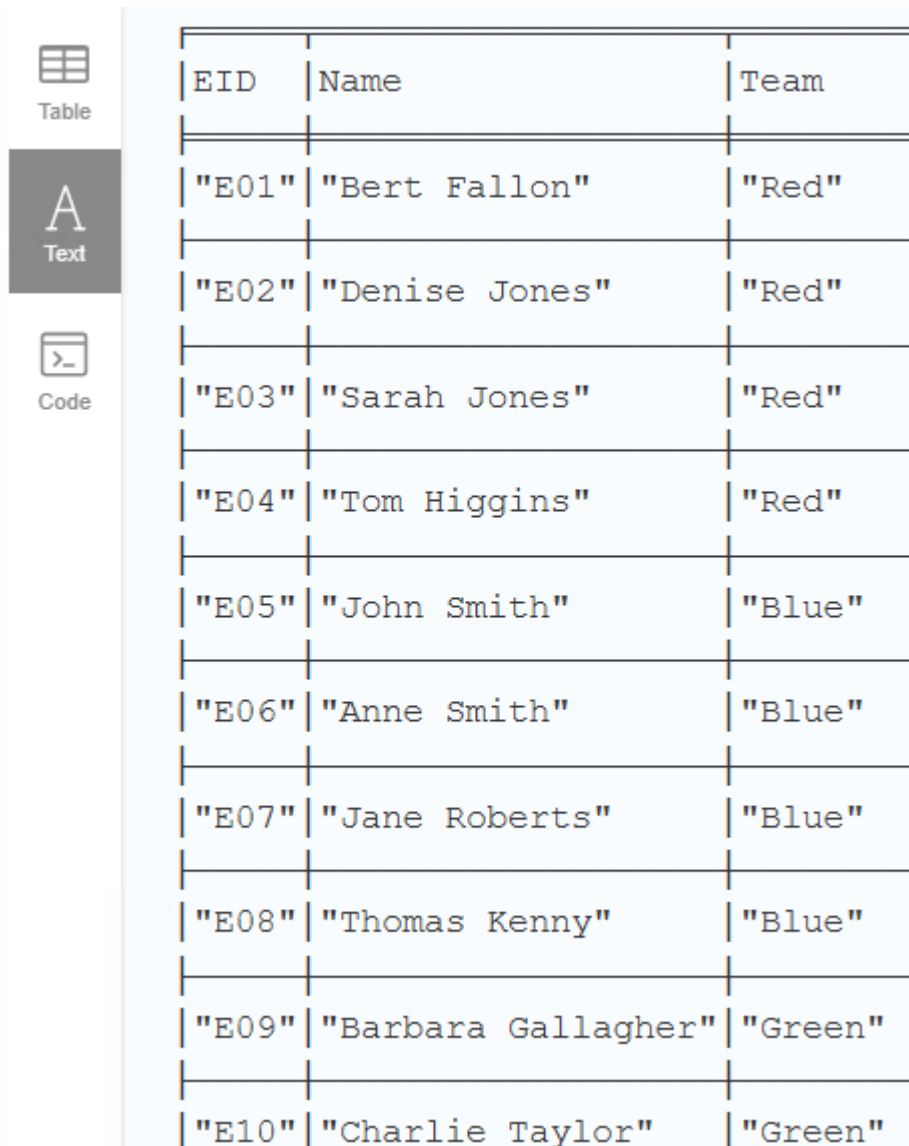
Figure 9 Example of output required for this question.

Question D (Neo4jQD.txt)

Show each Emloyees eid (as *EID*), name (as *Name*) and the name of the team they are a MEMBER_OF (as *Team*).

If the employee is not a MEMBER_OF any team, **null** should be shown for the *Team*.
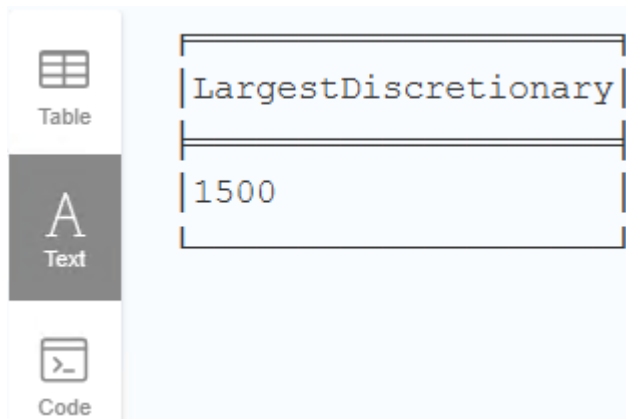
Results should be sorted alphabetically by *EID*.

EID	Name	Team
"E01"	"Bert Fallon"	"Red"
"E02"	"Denise Jones"	"Red"
"E03"	"Sarah Jones"	"Red"
"E04"	"Tom Higgins"	"Red"
"E05"	"John Smith"	"Blue"
"E06"	"Anne Smith"	"Blue"
"E07"	"Jane Roberts"	"Blue"
"E08"	"Thomas Kenny"	"Blue"
"E09"	"Barbara Gallagher"	"Green"
"E10"	"Charlie Taylor"	"Green"

Figure 10 Example of output required for this question.

Question E (Neo4jQE.txt)

Show a column entitled *LargestDiscretionary* that contains the value of the largest discretionary amount for teams working on projects managed by the Employee with the eid = "E18".
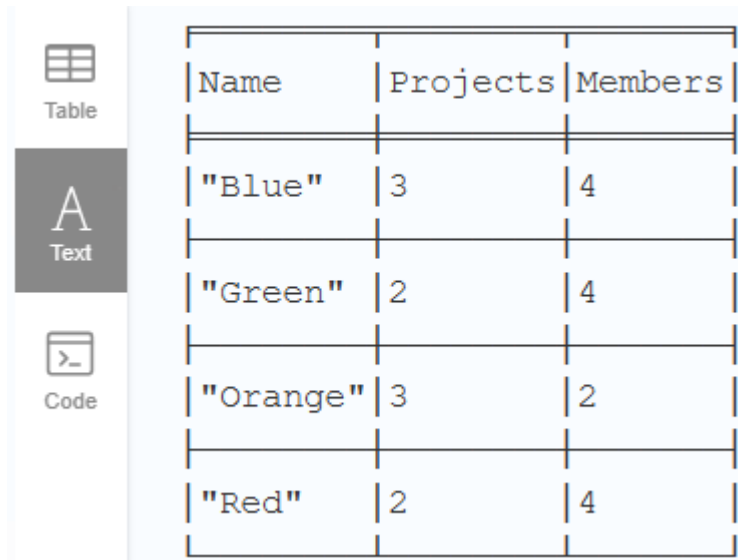

Figure 11 Example of output required for this question.

Question F (Neo4jQF.txt)

Return the name of each Team (as *Name*), a column entitled *Projects* that shows the number of projects the team WORKS_ON, and a column entitled *Members* that shows the number of Employees who are a MEMBER_OF the Team.

Results should be sorted alphabetically by *Name*.

Name	Projects	Members
"Blue"	3	4
"Green"	2	4
"Orange"	3	2
"Red"	2	4

Figure 12 Example of output required for this question.