4 SELECT within SELECT

1. **List each country name where the population is larger than that of 'Russia'.**

**SELECT name FROM world**

**WHERE population >**

**(SELECT population FROM world**

**WHERE name='Russia')**

1. **Show the countries in Europe with a per capita GDP greater than 'United Kingdom'.**

**SELECT name FROM world**

**WHERE continent = 'Europe' AND gdp/population >**

**(SELECT gdp/population FROM world**

**WHERE name='United Kingdom')**

1. **List the name and continent of countries in the continents containing either Argentina or Australia. Order by name of the country.**

**SELECT name, continent FROM world**

**WHERE continent =**

**(SELECT continent FROM world**

**WHERE name='Argentina') OR**

**continent =**

**(SELECT continent FROM world**

**WHERE name='Australia')**

1. **Which country has a population that is more than Canada but less than Poland? Show the name and the population.**

**SELECT name, population FROM world**

**WHERE population >**

**(SELECT population FROM world**

**WHERE name='Canada') AND**

**population <**

**(SELECT population FROM world**

**WHERE name='Poland')**

1. Germany (population 80 million) has the largest population of the countries in Europe. Austria (population 8.5 million) has 11% of the population of Germany.

**Show the name and the population of each country in Europe. Show the population as a percentage of the population of Germany.**

**SELECT name, CONCAT(CAST(ROUND(100\*population/(SELECT population**

**FROM world**

**WHERE name='Germany'),0) as INT),'%')**

**FROM world**

**WHERE continent='Europe'**

1. **Which countries have a GDP greater than every country in Europe? [Give the name only.] (Some countries may have NULL gdp values)**

**SELECT name**

**FROM world**

**WHERE gdp >**

**ALL(SELECT gdp**

**FROM world**

**where continent='Europe' AND gdp>0)**

1. **Find the largest country (by area) in each continent, show the continent, the name and the area:**

**SELECT continent, name, area**

**FROM world x**

**WHERE area >= ALL**

**(SELECT area FROM world y**

**WHERE y.continent=x.continent**

**AND area>0)**

1. **List each continent and the name of the country that comes first alphabetically.**

**SELECT continent, name**

**FROM world x**

**WHERE name LIKE**

**(SELECT TOP 1 name FROM world y**

**WHERE y.continent=x.continent**

**ORDER BY name)**

1. **Find the continents where all countries have a population <= 25000000. Then find the names of the countries associated with these continents. Show name, continent and population.**

**SELECT name, continent, population**

**FROM world x**

**WHERE 25000000 >=**

**ALL(SELECT population FROM world y**

**WHERE y.continent=x.continent AND population>0)**

1. **Some countries have populations more than three times that of any of their neighbours (in the same continent). Give the countries and continents.**

**SELECT name, continent, population**

**FROM world x**

**WHERE population/3 >=**

**ALL(SELECT population FROM world y**

**WHERE y.continent=x.continent AND y.name<>x.name AND population>0)**

**5 SUM and COUNT**

1. Top of Form
2. Show the total **population** of the world.

SELECT SUM(population)

FROM world

1. List all the continents - just once each.

SELECT continent

FROM world

GROUP BY continent

1. Give the total GDP of Africa

SELECT SUM(gdp)

FROM world

WHERE continent='Africa'

1. How many countries have an **area** of at least 1000000

SELECT COUNT(name)

FROM world

WHERE area>=1000000

1. What is the total **population** of ('Estonia', 'Latvia', 'Lithuania')

SELECT SUM(population)

FROM world

WHERE name LIKE 'Estonia' OR name LIKE 'Latvia' OR name LIKE 'Lithuania'

1. For each **continent** show the **continent** and number of countries.

SELECT continent, COUNT(name)

FROM world

GROUP BY continent

1. For each **continent** show the **continent** and number of countries with populations of at least 10 million.

SELECT continent, COUNT(name)

FROM world

WHERE population>=10000000

GROUP BY continent

1. List the continents that **have** a total population of at least 100 million.

SELECT continent

FROM world

GROUP BY continent

HAVING SUM(population)>=100000000

6 JOIN

1. The first example shows the goal scored by a player with the last name 'Bender'. The \* says to list all the columns in the table - a shorter way of saying matchid, teamid, player, gtime

Modify it to show the matchid and player name for all goals scored by Germany. To identify German players, check for: teamid = 'GER'

SELECT matchid, player FROM goal

WHERE teamid='GER'

2. From the previous query you can see that Lars Bender's scored a goal in game 1012. Now we want to know what teams were playing in that match.

Notice in the that the column matchid in the goal table corresponds to the id column in the game table. We can look up information about game 1012 by finding that row in the **game** table.

**Show id, stadium, team1, team2 for just game 1012**

SELECT id,stadium,team1,team2

FROM game

WHERE id=1012

3. The **FROM** clause says to merge data from the goal table with that from the game table. The **ON** says how to figure out which rows in **game** go with which rows in **goal** - the **matchid** from **goal** must match **id** from **game**. (If we wanted to be more clear/specific we could say  
ON (game.id=goal.matchid)

The code below shows the player (from the goal) and stadium name (from the game table) for every goal scored.

**Modify it to show the player, teamid, stadium and mdate for every German goal.**

SELECT player,teamid,stadium,mdate

FROM game JOIN goal ON (id=matchid)

WHERE teamid='GER'

4. Show the team1, team2 and player for every goal scored by a player called Mario player LIKE 'Mario%'

SELECT team1, team2, player

FROM game JOIN goal ON (id=matchid)

WHERE player LIKE 'Mario%'

5. The table eteam gives details of every national team including the coach. You can JOIN goal to eteam using the phrase goal JOIN eteam on teamid=id

Show player, teamid, coach, gtime for all goals scored in the first 10 minutes gtime<=10

SELECT player, teamid, coach, gtime

FROM goal JOIN eteam on (teamid=id)

WHERE gtime<=10

6. To JOIN game with eteam you could use either

game JOIN eteam ON (team1=eteam.id) or game JOIN eteam ON (team2=eteam.id)

Notice that because id is a column name in both game and eteam you must specify eteam.id instead of just id

List the dates of the matches and the name of the team in which 'Fernando Santos' was the team1 coach.

SELECT mdate, teamname

FROM game JOIN eteam on (team1=eteam.id)

WHERE coach='Fernando Santos'

7. List the player for every goal scored in a game where the stadium was 'National Stadium, Warsaw'

SELECT player

FROM game JOIN goal on (id=matchid)

WHERE stadium ='National Stadium, Warsaw'

8. The example query shows all goals scored in the Germany-Greece quarterfinal.

Instead show the name of all players who scored a goal against Germany.

SELECT player

FROM game JOIN goal ON (id = matchid)

WHERE (team1='GER' OR team2='GER') AND teamid<>'GER'

GROUP BY player

1. Show teamname and the total number of goals scored.

SELECT teamname, COUNT(matchid)

FROM eteam JOIN goal ON (id=teamid)

GROUP BY teamname

1. Show the stadium and the number of goals scored in each stadium.

SELECT stadium, COUNT(matchid)

FROM game JOIN goal ON (matchid=id)

GROUP BY stadium

1. For every match involving 'POL', show the matchid, date and the number of goals scored.

SELECT matchid, mdate, COUNT(matchid)

FROM game JOIN goal ON (matchid = id)

WHERE (team1 = 'POL' OR team2 = 'POL')

GROUP BY matchid, mdate

1. For every match where 'GER' scored, show matchid, match date and the number of goals scored by 'GER'

SELECT matchid, mdate, COUNT(matchid)

FROM game JOIN goal ON (matchid = id)

WHERE teamid='GER'

GROUP BY matchid, mdate

1. **List every match with the goals scored by each team as shown. This will use "**[**CASE WHEN**](https://sqlzoo.net/wiki/CASE)**" which has not been explained in any previous exercises.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **mdate** | **team1** | **score1** | **team2** | **score2** |
| 1 July 2012 | ESP | 4 | ITA | 0 |
| 10 June 2012 | ESP | 1 | ITA | 1 |
| 10 June 2012 | IRL | 1 | CRO | 3 |
| ... | | | | |

Notice in the query given every goal is listed. If it was a team1 goal then a 1 appears in score1, otherwise there is a 0. You could SUM this column to get a count of the goals scored by team1. **Sort your result by mdate, matchid, team1 and team2.**

SELECT mdate,

team1,

SUM(CASE WHEN teamid=team1 THEN 1 ELSE 0 END) score1,

team2,

SUM(CASE WHEN teamid=team2 THEN 1 ELSE 0 END) score2

FROM game JOIN goal ON (matchid = id)

GROUP BY mdate, matchid, team1, team2

a.Using the worldtable, show the region that contains the country which has the minimum population from all the existing countries.

SELECT continent, name

FROM world

WHERE population <=

ALL(SELECT population FROM world

WHERE population>0)

b. b.Using the worldtable, for each region, show the country that has the maximum population

SELECT continent, name

FROM world x

WHERE population >=

ALL(SELECT population FROM world y

WHERE y.continent=x.continent AND population>0)

ORDER BY continent