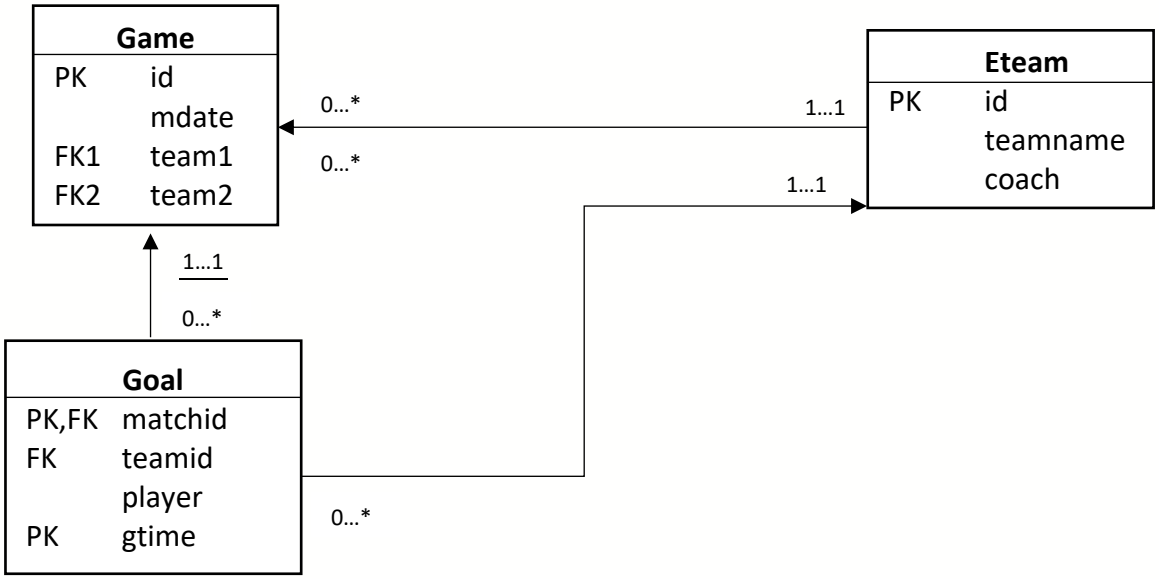
1st ERD diagram: Football



1. Show the matchid and player name for all goals scored by Germany.

```
SELECT matchid, player
  FROM goal
 WHERE teamid = 'GER'
```

2. Show id, stadium, team1, team2 for just game 1012.

```
SELECT id, stadium, team1, team2
  FROM game
 WHERE id = 1012
```

3. Show the player, teamid, stadium and mdate for every German goal.

```
SELECT player, teamid, stadium, mdate
  FROM game g
  JOIN goal gl ON gl.matchid = g.id
 WHERE gl.teamid = 'GER'
```

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

```
SELECT g.team1, g.team2, gl.player
  FROM game g JOIN goal gl ON gl.matchid = g.id
 WHERE gl.player LIKE 'Mario%'
```

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

```
SELECT g.player, g.teamid, e.coach, g.gtime
  FROM goal g
  JOIN eteam e ON e.id = g.teamid
 WHERE g.gtime <= 10
```

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

```
SELECT g.mdate, e.teamname
  FROM game g
  JOIN eteam e ON e.id = g.team1
 WHERE e.coach = 'Fernando Santos'
```

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

```
SELECT gl.player
FROM game g
JOIN goal gl ON gl.matchid = g.id
WHERE g.stadium = 'National Stadium, Warsaw'
```

8.Show the name of all players who scored a goal against Germany.

```
SELECT DISTINCT(player)
  FROM game
  JOIN goal ON goal.matchid = game.id
 WHERE (teamid <> 'GER' AND team1 = 'GER')
    OR (teamid <> 'GER' AND team2 = 'GER')
```

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

```
SELECT teamname, COUNT(player)
  FROM goal
  JOIN eteam ON eteam.id = goal.teamid
 GROUP BY teamname;
```

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

```
SELECT stadium, count(player)
  FROM game
  JOIN goal ON goal.matchid = game.id
 GROUP BY stadium;
```

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

```
SELECT matchid, mdate, count(player) As Score
  FROM game
  JOIN goal ON goal.matchid = game.id
 WHERE team1 = 'POL' OR team2 = 'POL'
 GROUP BY matchid, mdate
```

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

```
SELECT gl.matchid, g.mdate, COUNT(gl.player)
  FROM game g
  JOIN goal gl ON gl.mathchid = g.id
 WHERE team1 = 'GER' OR team2 = 'GER'
 GROUP BY gl.matchid, g.mdate
```

13. List every match with the goals scored by each team as shown. This will use "CASE WHEN" which has not been explained in any previous exercises.

```
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
  LEFT JOIN goal ON game.id = goal.matchid
 GROUP BY id, team1, team2, mdate
 ORDER BY mdate, team1, team2, id
```

14. Write the code which shows players, their team and the amount of goals they scored against Greece(GRE).

```
SELECT player, teamid, COUNT(*)
  FROM game JOIN goal WITH matchid = id
 WHERE (team1 = "GRE" OR team2 = "GRE")
   AND teamid != 'GRE'
 GROUP BY player, teamid
```

15. Write the code which would show the player and their team for those who have scored against Poland(POL) in National Stadium, Warsaw.

```
 SELECT DISTINCT player, teamid
   FROM game JOIN goal ON matchid = id
  WHERE stadium = 'National Stadium, Warsaw'
    AND (team1 = 'POL' OR team2 = 'POL')
    AND teamid != 'POL'
```

16. Select the code which shows the player, their team and the time they scored, for players who have played in Stadion Miejski (Wroclaw) but not against Italy(ITA).

```
SELECT DISTINCT player, teamid, gtime
  FROM game JOIN goal ON matchid = id
 WHERE stadium = 'Stadion Miejski (Wroclaw)'
   AND (( teamid = team2 AND team1 != 'ITA') OR ( teamid = team1 AND team2 != 'ITA'));
```

2nd Table Working: Teacher

Yr	Subject	Winner
1960	Chemistry	Willard F. Libby
1960	Literature	Saint-John Perse
1960	Medicine	Sir Frank Macfarlane Burnet
1960	Medicine	Peter Madawar
…	…	…

1. Shows the name of department which employs Cutflower.

```
SELECT dept.name
  FROM teacher
  JOIN dept ON (dept.id = teacher.dept)
 WHERE teacher.name = 'Cutflower'
```

2. Show a list of all the departments and number of employed teachers.

```
SELECT dept.name, COUNT(teacher.name)
  FROM teacher
 RIGHT JOIN dept ON dept.id = teacher.dept
 GROUP BY dept.name
```

3. Show name, a new column called Category, if dept are 1 , 2 then 'Sci', and 'art' if dept is 3, else 'Other'.

```
SELECT name,
     CASE
      WHEN dept IN (1,2) THEN 'Computing'
      WHEN dept = 3 THEN 'Art'
      ELSE 'Other'
     END AS Category
  FROM teacher
```

4. List the teachers who have NULL for their department.

```
SELECT name
  FROM teacher
 WHERE dept IS NULL
```

5. Use a different JOIN so that all teachers are listed.

```
SELECT teacher.name, dept.name AS department
  FROM teacher
  LEFT JOIN dept ON dept.id = teacher.dept
```

6. Use COALESCE to print the mobile number. Use the number '07986 444 2266' if there is no number given. Show teacher name and mobile number or '07986 444 2266'.

```
SELECT name, COALESCE(mobile,'07986 444 2266')
FROM teacher
```

7. Use the COALESCE function and a LEFT JOIN to print the teacher name and department name. Use the string 'None' where there is no department.

```
SELECT t.name, COALESCE(d.name, 'None')
  FROM teacher t
  LEFT JOIN dept d ON d.id = t.dept
```

8. Use COUNT to show the number of teachers and the number of mobile phones.

```
SELECT COUNT(name) AS teacher_num, COUNT(mobile) AS mobile_num
FROM teacher
```

9. Use COUNT and GROUP BY dept.name to show each department and the number of staff. Use a RIGHT JOIN to ensure that the Engineering department is listed.

```
SELECT d.name, COUNT(t.name)
  FROM teacher t
 RIGHT JOIN dept d ON d.id = t.dept
 GROUP BY d.name
```

10. Use CASE to show the name of each teacher followed by 'Sci' if the teacher is in dept 1 or 2 and 'Art' otherwise.

```
SELECT name,
       CASE WHEN dept IN (1,2) THEN 'Sci'
            ELSE 'Art' END AS Dept_descript
FROM teacher
```

11. Use CASE to show the name of each teacher followed by 'Sci' if the teacher is in dept 1 or 2, show 'Art' if the teacher's dept is 3 and 'None' otherwise.

```
SELECT name,
       CASE WHEN dept IN (1,2) THEN 'Sci'
            WHEN dept = 3 THEN 'Art'
            ELSE 'None'
            END AS Dept_descript
FROM teacher
```