

[1] Create a database, like the Access database, with the following criteria:

- a. There must be at least six teams

```
mysql> SELECT * FROM Teams;
```

teamID	team_name	coach_name
3	Church of Scientology	L'Ron Hubbard
4	N.W.A	Jerry Heller
1	People's Republic of China	Xi Jinping
0	Scott's Tots	Michael Scott
2	Team Vorkuta	Victor Reznov
5	The Red Team	William Smith

6 rows in set (0.00 sec)

- b. Each team must have at least five players

As the tables can be our design, and the query outputs were approved by Dr. VanHilst when presented by Daniel Pietz on Friday September 27th, 2019, the player name is one key and is not separated into two separate keys for first and last name. This design feature is supported by the assignment questions not requesting a specific query or table creation that uses specifically only the first or last name of a player.

```
mysql> SELECT * FROM Players;
```

playerID	player_name	team_name
1	Dwight K Schrute	Scott's Tots
2	James Halpert	Scott's Tots
3	Pamela Beasley Halpert	Scott's Tots
4	Ryan Howard	Scott's Tots
5	Stanley Hudson	Scott's Tots
6	Alex Mason	Team Vorkuta
7	John Fredrick Kennedy	Team Vorkuta
8	Frank Woods	Team Vorkuta
9	Freidrich Steiner	Team Vorkuta
10	Edward Richtofen	Team Vorkuta
11	Mao Zedong	People's Republic of China
12	Bruce Lee	People's Republic of China
13	Jackie Chan	People's Republic of China
14	Li Zongren	People's Republic of China
15	Wang Mang	People's Republic of China
16	Tom Cruise	Church of Scientology
17	John Travolta	Church of Scientology
18	Beck	Church of Scientology
19	Jennifer Aspen	Church of Scientology
20	Doug Fresh	Church of Scientology
21	Ice Cube	N.W.A
22	Easy-E	N.W.A
23	Dr. Dre	N.W.A
24	MC Ren	N.W.A
25	DJ Yella	N.W.A
26	Jaden Smith	The Red Team
27	Willow Smith	The Red Team
28	Jade Smith	The Red Team
29	Trey Smith	The Red Team
30	Ryan Sheckler	The Red Team

30 rows in set (0.00 sec)

- c. There must be games and a game schedule such that each team plays each other team exactly once

The games to be played along with their scheduled date and time are all elements of the Games table. This table also contains an area for logging who won the game once it has been played (which will be in #5).

```
mysql> select * from Games;
```

gameID	homeTeam	awayTeam	gameTime	homeWin	awayWin
0	The Red Team	People's Republic of China	2019-09-07 08:00:00	NULL	NULL
1	The Red Team	N.W.A	2019-09-07 09:00:00	NULL	NULL
2	The Red Team	Church of Scientology	2019-09-07 10:00:00	NULL	NULL
3	Team Vorkuta	The Red Team	2019-09-07 11:00:00	NULL	NULL
4	Scott's Tots	The Red Team	2019-09-07 12:00:00	NULL	NULL
5	N.W.A	People's Republic of China	2019-09-07 10:00:00	NULL	NULL
6	People's Republic of China	Church of Scientology	2019-09-07 09:00:00	NULL	NULL
7	People's Republic of China	Team Vorkuta	2019-09-07 12:00:00	NULL	NULL
8	Scott's Tots	People's Republic of China	2019-09-07 11:00:00	NULL	NULL
9	Church of Scientology	N.W.A	2019-09-07 08:00:00	NULL	NULL
10	Team Vorkuta	N.W.A	2019-09-14 13:00:00	NULL	NULL
11	N.W.A	Scott's Tots	2019-09-14 14:00:00	NULL	NULL
12	Church of Scientology	Team Vorkuta	2019-09-14 14:00:00	NULL	NULL
13	Church of Scientology	Scott's Tots	2019-09-14 13:00:00	NULL	NULL
14	Scott's Tots	Team Vorkuta	2019-09-14 08:00:00	NULL	NULL

15 rows in set (0.00 sec)

- d. The schedule must associate two teams with each game and designate one of the two as the host and therefore responsible for bringing the after-game snacks

The host is identified in the query above under the column entitled: homeTeam

- e. Assignment as the host must be evenly distributed to the teams such that the difference between host games of team with most games as host and host games of team with fewest games as host is not bigger than two, but ideally being one.

	Times as the Host	Times as the Visitor
The Red Team	3	2
Team Vorkuta	2	3
Scott's Tots	3	2
N.W.A.	2	3
People's Republic of China	2	3
Church of Scientology	3	2

As can be seen from the table above, the three teams that have the most games spent as host are The Red Team, Scott's Tots, and the Church of Scientology with three games as host each. The subsequent teams with the least amount of games served as host are Team Vorkuta, N.W.A., and the People's Republic of China each hosting only two games each. The maximum number of games hosted is three while the minimum is two which leaves the difference in the limits the ideal value of one.

- f. Tables must not replicate data unnecessarily, which is to say that any data that appears in more than one table that must be a primary or candidate key in at least one table and represent a foreign key in any other table where it appears.

The Teams table includes the keys of teamID, team_name, and coach_name; the teamID is the primary key and the team_name links the Teams table to the other tables. The Players table includes the keys playerID, player_name, and team_name; the playerID is the primary key and the team_name links the Players table to the other two tables. The Games table includes the keys gameID, homeTeam, awayTeam, gameTime, homeWin, and awayWin; the gameID is the primary key and, like the other two tables, has the team's unique names, listed as the team_name key, under the homeTeam and the awayTeam linking this table to the other two. No other data is duplicated other than the necessary team_name key for all tables.

- [2] *Submit complete sql code in the form of a file with a .sql suffix, that will create and populate all of your soccer league tables*

The .sql file is attached along with this document under the file name: GrayPietz_HW3_Q2_CS317.sql

- [3] *Submit complete sql code in the form of a file with a .sql suffix that will remove all of your soccer league tables*

The .sql file is attached along with this document under the file name: GrayPietz_HW2_Q3_CS317.sql

- [4] *Put the following queries in a third .sql file and show output*

- a. *A query generating a table with player name, team name, and team coach name*

Since the question is vague on whether it wants a table for all players or a specific player, both are included in the third .sql file (named: GrayPietz_HW3_Q4_CS317.sql) and within the outputs below. The first output is for all players and the second is for a specific player, which in this case was chosen as Willow Smith.

```
mysql> SELECT Players.player_name, Teams.team_name, coach_name FROM
-> Players INNER JOIN Teams ON Players.team_name = Teams.team_name;
```

player_name	team_name	coach_name
Tom Cruise	Church of Scientology	L'Ron Hubbard
John Travolta	Church of Scientology	L'Ron Hubbard
Beck	Church of Scientology	L'Ron Hubbard
Jennifer Aspen	Church of Scientology	L'Ron Hubbard
Doug Fresh	Church of Scientology	L'Ron Hubbard
Ice Cube	N.W.A	Jerry Heller
Easy-E	N.W.A	Jerry Heller
Dr. Dre	N.W.A	Jerry Heller
MC Ren	N.W.A	Jerry Heller
DJ Yella	N.W.A	Jerry Heller
Mao Zedong	People's Republic of China	Xi Jinping
Bruce Lee	People's Republic of China	Xi Jinping
Jackie Chan	People's Republic of China	Xi Jinping
Li Zongren	People's Republic of China	Xi Jinping
Wang Mang	People's Republic of China	Xi Jinping
Dwight K Schrute	Scott's Tots	Michael Scott
James Halpert	Scott's Tots	Michael Scott
Pamela Beasley Halpert	Scott's Tots	Michael Scott
Ryan Howard	Scott's Tots	Michael Scott
Stanley Hudson	Scott's Tots	Michael Scott
Alex Mason	Team Vorkuta	Victor Reznov
John Fredrick Kennedy	Team Vorkuta	Victor Reznov
Frank Woods	Team Vorkuta	Victor Reznov
Freidrich Steiner	Team Vorkuta	Victor Reznov
Edward Richtofen	Team Vorkuta	Victor Reznov
Jaden Smith	The Red Team	William Smith
Willow Smith	The Red Team	William Smith
Jade Smith	The Red Team	William Smith
Trey Smith	The Red Team	William Smith
Ryan Scheckler	The Red Team	William Smith

```
30 rows in set (0.00 sec)
```

```
mysql> SELECT Players.player_name, Teams.team_name, coach_name FROM
-> Players INNER JOIN Teams ON Players.team_name = Teams.team_name WHERE
-> Players.player_name = 'Willow Smith';
```

player_name	team_name	coach_name
Willow Smith	The Red Team	William Smith

```
1 row in set (0.00 sec)
```


b. *Queries capable of generating the tables shown on the assignment expectations document*

The queries for the regeneration of the tables shown are shown in the attached file (named: GrayPietz_HW3_Q4_CS317.sql) with their respective outputs shown below.

```
mysql> SELECT * FROM (SELECT player_name, gameTime, 1 AS snack FROM
-> (Games INNER JOIN Players ON Games.homeTeam = Players.team_name)
-> WHERE homeTeam IN (SELECT team_name FROM Players) UNION SELECT
-> player_name, gameTime, 0 AS snack FROM (Games INNER JOIN Players ON
-> Games.awayTeam = Players.team_name) WHERE awayTeam IN (SELECT
-> team_name FROM Players)) AS table1 WHERE player_name = 'Willow Smith'
-> ORDER BY gameTime;
```

player_name	gameTime	snack
Willow Smith	2019-09-07 08:00:00	1
Willow Smith	2019-09-07 09:00:00	1
Willow Smith	2019-09-07 10:00:00	1
Willow Smith	2019-09-07 11:00:00	0
Willow Smith	2019-09-07 12:00:00	0

5 rows in set (0.00 sec)

```
mysql> SELECT * FROM (SELECT player_name, awayTeam AS against, gameTime AS
-> be_there, 1 AS snack FROM (Games INNER JOIN Players ON Games.homeTeam =
-> Players.team_name) WHERE homeTeam IN (SELECT team_name FROM Players)
-> UNION SELECT player_name, homeTeam AS against, gameTime, 0 AS snack
-> FROM (Games INNER JOIN Players ON Games.awayTeam = Players.team_name)
-> WHERE awayTeam IN (SELECT team_name FROM Players)) AS table1 WHERE
-> player_name = 'Willow Smith' ORDER BY be_there;
```

player_name	against	be_there	snack
Willow Smith	People's Republic of China	2019-09-07 08:00:00	1
Willow Smith	N.W.A	2019-09-07 09:00:00	1
Willow Smith	Church of Scientology	2019-09-07 10:00:00	1
Willow Smith	Team Vorkuta	2019-09-07 11:00:00	0
Willow Smith	Scott's Tots	2019-09-07 12:00:00	0

5 rows in set (0.00 sec)

```
mysql> SELECT player_name, against, gameTime AS be_there, snack, coach_name
-> AS lead_by FROM (SELECT Players.player_name, against, gameTime, snack,
-> team_name FROM (SELECT * FROM (SELECT player_name, awayTeam AS
-> against, gameTime, 1 AS snack FROM (Games INNER JOIN Players ON
-> Games.homeTeam = Players.team_name) WHERE homeTeam IN (SELECT team_name
-> FROM Players) UNION SELECT player_name, homeTeam AS against, gameTime,
-> 0 AS snack FROM (Games INNER JOIN Players ON Games.awayTeam =
-> Players.team_name) WHERE awayTeam IN (SELECT team_name FROM Players)) AS
-> table1 WHERE player_name = 'Willow Smith' ORDER BY gameTime) AS table2
-> INNER JOIN Players ON table2.player_name = Players.player_name) AS
-> table3 INNER JOIN Teams ON table3.team_name = Teams.team_name;
```

player_name	against	be_there	snack	lead_by
Willow Smith	People's Republic of China	2019-09-07 08:00:00	1	William Smith
Willow Smith	N.W.A	2019-09-07 09:00:00	1	William Smith
Willow Smith	Church of Scientology	2019-09-07 10:00:00	1	William Smith
Willow Smith	Team Vorkuta	2019-09-07 11:00:00	0	William Smith
Willow Smith	Scott's Tots	2019-09-07 12:00:00	0	William Smith

5 rows in set (0.12 sec)

- [5] *Extra credit if you can create a table that shows the win, tie, and loss record of each team in a single query (no stored partial results) on your original tables (Hint: you may want to use the UNION operator and sub-queries for this one.)*

Will be submitted at a later time. Almost finished!