Curtin University – Department of Computing

Assignment Cover Sheet / Declaration of Originality

Complete this form if/as directed by your unit coordinator, lecturer or the assignment specification.

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Unit name:	Database Systems	Unit ID:	ISYS2014
Lecturer / unit coordinator:	Ms Nimalika Fernando	Tutor:	Foad Motalebi
Date of submission:	25/10/2023	Which assignment?	

I declare that:

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- I have *not previously submitted* this work for any other unit, whether at Curtin University or elsewhere, or for prior attempts at this unit, except where clearly indicated otherwise.

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- It is my responsibility to ensure that my submission is complete, correct and not corrupted.

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(By submitting this form, you indicate that you agree with all the above text.)

Introduction

The scenario that I have chosen is scenario A which is to create a database system for the FIFA Women's World Cup. I have implemented many entities for this system to work efficiently to its fullest. The entity and tables created have a connection with each other with the use of the primary key and foreign key. Other than that, this allows users to get the information of the FIFA Women's World Cup from this database system where information is stored.

Design of the database

Tables

Entity Sets	Key	Other Attributes
FIFA	fifaNo	year, host
Location	locationNo	locationID, city, country
Stadium	stadiumName	seatingCapacity, stadiumType
Team	teamName	teamCountry
Player	playerName	playerPosition, playerNationality
Coaches	coachName	coachExperience
Winner	winNo	winningYear, levelOfVictory
ChampionshipRe-cord	recordNo	topGoalScorers,goalsScored, recordYear

Relationship Sets	Participating Entity Sets	Attributes
MatchSchedule-at	FIFA - Location	matchDates, matchVenues
In	Stadium - Location	
Plays - on	Team - Player	
Awarded-to	Winner - Team	
Created-by	ChampionshipRecord - Team	
Hire	Team - Coaches	

Relationship Sets	Cardinality Constraints	Participation / Other Constraints
MatchSchedule-at	One - Many	Location – Partial A Location can exist without FIFA FIFA – Total FIFA cannot exist without Location
In	One - Many	Stadium – Total A stadium cannot exist without a Location Location – Partial A Location can exist without a Stadium
Plays - on	One - Many	Player – Total A Player cannot exist without a Team Team – Partial A Team can exist without a Player
Awarded-to	One - Many	Winner – Total A Winner cannot exist without a Team Team – Partial A Team can exist without a Winner
Created-by	One - Many	ChampionshipRecord – Total A ChampionshipRecord cannot exist without a Team Team – Partial A Team can exist without a ChampionshipRecord

Hire	One - Many	Team – Partial A Team can exist without coaches Coaches – Total Coaches cannot exist without a Team

Relational schema

Location (<u>locationNo</u>, locationID, city, country)

Stadium (<u>stadiumName</u>, seatingCapacity, stadiumType, locationID)
      FK locationNo REF Location(locationNo)

FIFA (fifaNo, year, host, locationNo)
      FK locationNo REF Location(locationNo)

Team (<u>teamName</u>, teamCountry)

Player (<u>playerName</u>, playerPosition, playerNationality, teamName)
      FK teamName REF Team(teamName)

Coaches (<u>coachName</u>, coachExperience, teamName)
      FK teamName REF Team(teamName)

Winner (<u>winNo</u>, winningYear, levelOfVictory, teamName)
      FK teamName REF Team(teamName)

ChampionshipRecord (<u>recordNo</u>, topGoalScorers, goalsScored, teamName, recordYear)
      FK teamName REF Team(teamName)

Location

Attribute	Type	Size	Null	Primary Key	Description
locationNo	char	4	N	Y	Location number, unique
locationID	char	2	N	N	Location id
city	varchar	30	Y	N	City
country	varchar	35	N	N	Country

FIFA

Attribute	Type	Size	Null	Primary Key	Description
fifaNo	char	4	N	Y	FIFA number, unique
year	integer		N	N	FIFA year
host	varchar	50	N	N	Host name

Stadium

Attribute	Type	Size	Null	Primary Key	Description
stadiumName	varchar	35	N	Y	Stadium name
seatingCapacity	integer		N	N	Number of seats
stadiumType	varchar	30	Y	N	Stadium type

Team

Attribute	Type	Size	Null	Primary Key	Description
teamName	varchar	30	N	Y	Team name
teamCountry	varchar	30	Y	N	Country of the team

Player

Attribute	Type	Size	Null	Primary Key	Description
playerName	varchar	50	N	Y	Player name
playerPosition	varchar	30	Y	N	Player position
playerNationality	varchar	35	N	N	Player Nationality

Coaches

Attribute	Type	Size	Null	Primary Key	Description
coachName	varchar	50	N	Y	Coach name
coachExperience	integer		Y	N	Coaching experience

Winner

Attribute	Type	Size	Null	Primary Key	Description
winNo	char	4	N	Y	Unique number
winningYear	integer		N	N	Winning year
levelOfVictory	varchar	30	N	N	Level of Victory

ChampionshipRecord

Attribute	Type	Size	Null	Primary Key	Description
recordNo	char	4	N	Y	Unique Record No
topGoalScorers	varchar	50	N	N	Top Goal Scorers
goalsScored	integer		N	N	Number of Goals Scored
recordYear	integer		N	N	Year of record

ER Diagram
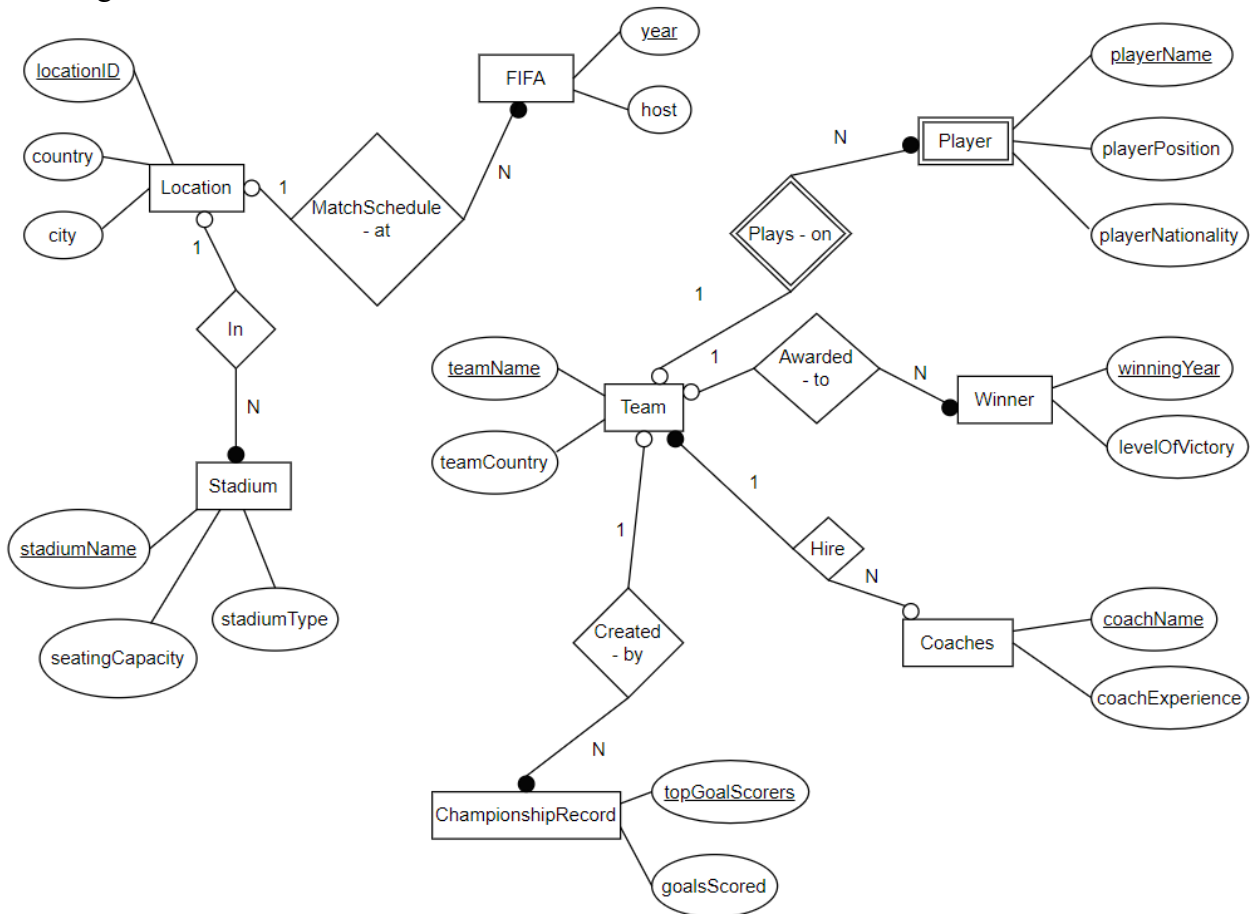
Implementation of the database and addition of sample data

Create a database named "Assessment_21690848" and use the database.

```
mysql> CREATE DATABASE Assessment_21690848;
Query OK, 1 row affected (0.01 sec)

mysql> SHOW databases;
+--------------------+
| Database           |
+--------------------+
| Assessment_21690848 |
| NewCompany         |
| Prac02             |
| Prac05             |
| PracTest02         |
| Student            |
| dswork             |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
11 rows in set (0.00 sec)

mysql> USE Assessment_21690848;
Database changed
mysql>
```

Create all the tables.

```
        -> FOREIGN KEY (teamName) REFERENCES Team(teamName)
        -> );
Query OK, 0 rows affected (0.04 sec)

mysql> CREATE TABLE ChampionshipRecord (
        -> recordNo int NOT NULL,
        -> topGoalScorers varchar(50) NOT NULL,
        -> goalsScored int NOT NULL,
        -> recordYear int NOT NULL,
        -> teamName varchar(30),
        -> PRIMARY KEY (topGoalScorers),
        -> FOREIGN KEY (teamName) REFERENCES Team(teamName)
        -> );
Query OK, 0 rows affected (0.03 sec)

mysql> SHOW tables;
+-----------------------------+
| Tables_in_Assessment_21690848 |
+-----------------------------+
| ChampionshipRecord          |
| Coaches                     |
| FIFA                        |
| Location                    |
| Player                      |
| Stadium                     |
| Team                        |
| Winner                      |
+-----------------------------+
8 rows in set (0.00 sec)

mysql>
```

Insert all sample data into the tables.

```
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Player (playerName, playerPosition, playerNationality, teamName)
    -> VALUES ('Rafaelle Souza', 'Defender', 'Brazilian', 'Brazil');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> INSERT INTO Coaches (coachName, coachExperience, teamName)
    -> VALUES ('Tony Gustavsson', 21, 'Australia');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Coaches (coachName, teamName)
    -> VALUES ('German Portanova', 'Argentina');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Coaches (coachName, coachExperience, teamName)
    -> VALUES ('Andries Jonker', 2, 'Netherlands');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Coaches (coachName, teamName)
    -> VALUES ('Nacho Quintana', 'Panama');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Coaches (coachName, teamName)
    -> VALUES ('Francisco Neto', 'Portugal');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Coaches (coachName, coachExperience, teamName)
    -> VALUES ('Desiree Ellis', 9, 'South Africa');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Coaches (coachName, coachExperience, teamName)
    -> VALUES ('Colin Bell', 6, 'Korea Republic');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W008', 2011, 'Runner up', 'USA');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W009', 2007, 'Champion', 'Germany');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W010', 2007, 'Runner up', 'Brazil');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W011', 2003, 'Champion', 'Germany');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W012', 2003, 'Runner up', 'Sweden');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W013', 1999, 'Champion', 'USA');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W014', 1999, 'Runner up', 'China PR');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W015', 1995, 'Champion', 'Norway');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Winner (winNo, winningYear, levelOfVictory, teamName)
    -> VALUES ('W016', 1995, 'Runner up', 'Germany');
Query OK, 1 row affected (0.00 sec)
```

Data Source

1. Quaile, Kieran. 2023. "Every Coach at the 2023 Women's World Cup." Diario AS, July 17, 2023. https://en.as.com/soccer/womens-world-cup-2023-who-are-the-coaches-of-each-national-team-n/
2. Savitsky, Tyler. 2019. "FIFA Women's World Cup 2019 Stadiums: Complete Guide to All Nine Venues in France - CBSSports.Com." CBSSports.Com. May 14, 2019. https://www.cbssports.com/soccer/news/fifa-womens-world-cup-2019-stadiums-complete-guide-to-all-nine-venues-in-france/
3. "Football - FIFA Women's World Cup, 1991 - 2023." 2023. Kaggle. August 20, 2023. https://www.kaggle.com/datasets/piterfm/football-fifa-womens-world-cup-1991-2023
4. Wikipedia contributors. 2023. "2015 FIFA Women's World Cup." Wikipedia. October 7, 2023. https://en.wikipedia.org/wiki/2015_FIFA_Women%27s_World_Cup

Use of the database

1. Show player name, position and team name if the player's position is a Defender
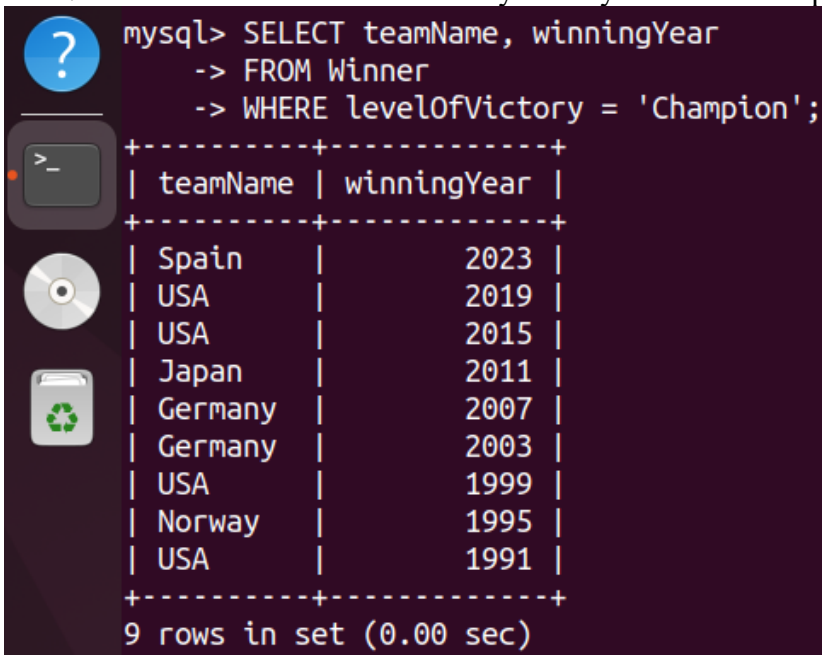
```
mysql> SELECT playerName, playerPosition, teamName
    -> FROM Player
    -> WHERE playerPosition = 'Defender';
+------------------+----------------+-----------+
| playerName       | playerPosition | teamName  |
+------------------+----------------+-----------+
| Babett Peter     | Defender       | Germany   |
| Debbie Rademacher | Defender      | USA       |
| Joy Fawcett      | Defender       | Germany   |
| Maren Mjelde     | Defender       | Norway    |
| Millie Bright    | Defender       | England   |
| Nia Kunzer       | Defender       | Germany   |
| Rafaelle Souza   | Defender       | Brazil    |
| Saki Kumagai     | Defender       | Japan     |
| Saskia Webber    | Defender       | USA       |
| Stephanie Catley | Defender       | Australia |
+------------------+----------------+-----------+
10 rows in set (0.00 sec)
```

2. Show the team's name and the year they won the Champion.

```
mysql> SELECT teamName, winningYear
    -> FROM Winner
    -> WHERE levelOfVictory = 'Champion';
+----------+-------------+
| teamName | winningYear |
+----------+-------------+
| Spain    |        2023 |
| USA      |        2019 |
| USA      |        2015 |
| Japan    |        2011 |
| Germany  |        2007 |
| Germany  |        2003 |
| USA      |        1999 |
| Norway   |        1995 |
| USA      |        1991 |
+----------+-------------+
9 rows in set (0.00 sec)
```

3. Show all from Team joint Player and arrange according to team name by alphabetical order

```
mysql> SELECT *
    -> FROM Team NATURAL JOIN Player
    -> ORDER BY teamName;
+-----------+-------------+-------------------+--------------+-----------------+
| teamName  | teamCountry | playerName        | playerPosition | playerNationality |
+-----------+-------------+-------------------+--------------+-----------------+
| Australia | AUS         | Stephanie Catley  | Defender     | Australian      |
| Australia | AUS         | Sam Kerr          | Foward       | Australian      |
| Brazil    | BRA         | Rafaelle Souza    | Defender     | Brazilian       |
| Colombia  | COL         | Cataline Usme     | Foward       | Colombian       |
| England   | ENG         | Millie Bright     | Defender     | English         |
| Germany   | GER         | Alexandra Popp    | Striker      | German          |
| Germany   | GER         | Babett Peter      | Defender     | German          |
| Germany   | GER         | Simone Laudehr    | Midfielder   | German          |
| Germany   | GER         | Joy Fawcett       | Defender     | German          |
| Germany   | GER         | Nia Kunzer        | Defender     | German          |
| Japan     | JPN         | Asuna Tanaka      | Foward       | Japanese        |
| Japan     | JPN         | Ayumi Kaihori     | Goal Keeper  | Japanese        |
| Japan     | JPN         | Saki Kumagai      | Defender     | Japanese        |
| Japan     | JPN         | Rumi Utsugi       | Midfielder   | Japanese        |
| Norway    | NOR         | Tone Haugen       | Midfielder   | Norwegian       |
| Norway    | NOR         | Reidun Seth       | Goal Keeper  | Norwegian       |
| Norway    | NOR         | Maren Mjelde      | Defender     | Norwegian       |
| Norway    | NOR         | Hege Riise        | Midfielder   | Norwegian       |
| Spain     | ESP         | Olga Carmona      | Left Back    | Spanish         |
| Spain     | ESP         | Irene Guerrero    | Foward       | Spanish         |
| Spain     | ESP         | Esther Gonzalez   | Striker      | Spanish         |
| Spain     | ESP         | Enith Salon       | Goal Keeper  | Spanish         |
| Spain     | ESP         | Aitana Bonmati    | Left Back    | Spanish         |
| Sweden    | SWE         | Kosovare Asllani  | Striker      | Swedish         |
| USA       | USA         | Hope Solo         | Goal Keeper  | American        |
| USA       | USA         | Saskia Webber     | Defender     | American        |
| USA       | USA         | Debbie Rademacher | Defender     | American        |
+-----------+-------------+-------------------+--------------+-----------------+
27 rows in set (0.00 sec)
```

4. Show stadium name, seating capacity stadium type, country and city by using joints with condition stadium is outdoor and seating capacity is 30000 and above.

```
mysql> SELECT S.stadiumName, S.seatingCapacity, S.stadiumType, L.country, L.city
    -> FROM Stadium S INNER JOIN Location L
    -> ON S.locationNo = L.locationNo
    -> WHERE S.stadiumType = 'Outdoor' AND S.seatingCapacity >= 30000;
+---------------------+----------------+-------------+-------------+-------------+
| stadiumName         | seatingCapacity | stadiumType | country     | city        |
+---------------------+----------------+-------------+-------------+-------------+
| Accor Stadium       |          69314 | Outdoor     | Australia   | Sydney      |
| Allianz Stadium     |          38841 | Outdoor     | Australia   | Sydney      |
| Commomwealth Stadium |         56302 | Outdoor     | Canada      | Edmonton    |
| Eden Park           |          40536 | Outdoor     | New Zealand | Kingsland   |
| Investors Group Field |        33422 | Outdoor     | Canada      | Winnipeg    |
| Parc des Princes    |          47929 | Outdoor     | France      | Paris       |
| Sky Stadium         |          31089 | Outdoor     | New Zealand | Wellington  |
| Stade de la Mosson  |          32939 | Outdoor     | France      | Montpellier |
| Stade de Lyon       |          59186 | Outdoor     | France      | Lyon        |
| Stade de Nice       |          35100 | Outdoor     | France      | Nice        |
| State du Hainaut    |          44043 | Outdoor     | France      | Valenciennes |
| Suncorp Stadium     |          56851 | Outdoor     | Australia   | Brisbane    |
+---------------------+----------------+-------------+-------------+-------------+
12 rows in set (0.00 sec)
```

5. Show the stadium name, seating capacity and stadium type where name has the word Park in it.

```
mysql> SELECT stadiumName, seatingCapacity, stadiumType
    -> FROM Stadium
    -> WHERE stadiumName LIKE '%Park%';
+--------------+-----------------+-------------+
| stadiumName  | seatingCapacity | stadiumType |
+--------------+-----------------+-------------+
| AAMI Park    |           28870 | Outdoor     |
| Eden Park    |           40536 | Outdoor     |
| HBF Park     |           13932 | Outdoor     |
| Roazhon Park |           29778 | Outdoor     |
+--------------+-----------------+-------------+
4 rows in set (0.00 sec)
```

6. Show coach name and coaching experience where coach of teams Australia and Netherlands

```
mysql> SELECT C.coachName, C.coachExperience
    -> FROM Coaches C
    -> WHERE C.teamName IN (SELECT T.teamName
    ->
Display all 764 possibilities? (y or n)
    ->
Display all 764 possibilities? (y or n)
    ->      FROM Team T
    ->
Display all 764 possibilities? (y or n)
    ->
Display all 764 possibilities? (y or n)
    ->      WHERE T.teamName IN ('Australia', 'Netherlands')
    -> );
+-----------------+-----------------+
| coachName       | coachExperience |
+-----------------+-----------------+
| Tony Gustavsson |              21 |
| Andries Jonker  |               2 |
+-----------------+-----------------+
2 rows in set (0.00 sec)
```

7. Show the stadium type and sum of the seating capacity for different stadium type.

```
mysql> SELECT stadiumType, SUM(seatingCapacity) as totalCapacity
    -> FROM Stadium
    -> GROUP BY stadiumType;
+-------------+---------------+
| stadiumType | totalCapacity |
+-------------+---------------+
| Outdoor     |        763281 |
| Indoor      |        134883 |
+-------------+---------------+
2 rows in set (0.01 sec)
```

8. Show team country and count the number of championships won and group by team country.

```
mysql> SELECT T.teamCountry, COUNT(*) as numChampionships
    -> FROM Winner W INNER JOIN Team T
    -> ON W.teamName = T.teamName
    -> GROUP BY T.teamCountry;
+-------------+------------------+
| teamCountry | numChampionships |
+-------------+------------------+
| BRA         |                1 |
| CHN         |                1 |
| ENG         |                1 |
| GER         |                3 |
| JPN         |                2 |
| NED         |                1 |
| NOR         |                2 |
| ESP         |                1 |
| SWE         |                1 |
| USA         |                5 |
+-------------+------------------+
10 rows in set (0.00 sec)
```

Stored procedure to insert new player.

```
mysql> CREATE PROCEDURE InsNewPlayer(
    -> n varchar(50),
    -> p varchar(30),
    -> c varchar(35),
    -> t varchar(30)
    -> )
    -> COMMENT 'Insert new player into the table Player. '
    -> INSERT INTO Player(playerName, playerPosition, playerNationality, teamName)
    -> VALUES(n, p, c, t);
Query OK, 0 rows affected (0.01 sec)

mysql> CALL InsNewPlayer('Darren Tan', 'Striker', 'Swedish', 'Sweden');
Query OK, 1 row affected (0.61 sec)

mysql> CALL InsNewPlayer('Foad Handsome', 'Defender', 'Brazilian', 'Brazil');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Player;
+-------------------+--------------+-------------------+-----------+
| playerName        | playerPosition | playerNationality | teamName  |
+-------------------+--------------+-------------------+-----------+
| Aitana Bonmati    | Left Back    | Spanish           | Spain     |
| Alexandra Popp    | Striker      | German            | Germany   |
| Asuna Tanaka      | Foward       | Japanese          | Japan     |
| Ayumi Kaihori     | Goal Keeper  | Japanese          | Japan     |
| Babett Peter      | Defender     | German            | Germany   |
| Cataline Usme     | Foward       | Colombian         | Colombia  |
| Darren Tan        | Striker      | Swedish           | Sweden    |
| Debbie Rademacher | Defender     | American          | USA       |
| Enith Salon       | Goal Keeper  | Spanish           | Spain     |
| Esther Gonzalez   | Striker      | Spanish           | Spain     |
| Foad Handsome     | Defender     | Brazilian         | Brazil    |
| Hege Riise        | Midfielder   | Norwegian         | Norway    |
| Hope Solo         | Goal Keeper  | American          | USA       |
| Irene Guerrero    | Foward       | Spanish           | Spain     |
| Joy Fawcett       | Defender     | German            | Germany   |
| Kosovare Asllani  | Striker      | Swedish           | Sweden    |
| Maren Mjelde      | Defender     | Norwegian         | Norway    |
| Millie Bright     | Defender     | English           | England   |
| Nia Kunzer        | Defender     | German            | Germany   |
| Olga Carmona      | Left Back    | Spanish           | Spain     |
| Rafaelle Souza    | Defender     | Brazilian         | Brazil    |
| Reidun Seth       | Goal Keeper  | Norwegian         | Norway    |
| Rumi Utsugi       | Midfielder   | Japanese          | Japan     |
| Saki Kumagai      | Defender     | Japanese          | Japan     |
| Sam Kerr          | Foward       | Australian        | Australia |
| Saskia Webber     | Defender     | American          | USA       |
| Simone Laudehr    | Midfielder   | German            | Germany   |
| Stephanie Catley  | Defender     | Australian        | Australia |
| Tone Haugen       | Midfielder   | Norwegian         | Norway    |
+-------------------+--------------+-------------------+-----------+
29 rows in set (0.00 sec)
```

Stored procedure to delete player

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE DeletePlayer(
    ->     IN playerNameToDelete VARCHAR(50)
    -> )
    -> COMMENT 'Delete a player from the Player table.'
    -> BEGIN
    ->
Display all 764 possibilities? (y or n)
    ->     DELETE FROM Player
    ->
Display all 764 possibilities? (y or n)
    ->     WHERE playerName = playerNameToDelete;
    -> END //
Query OK, 0 rows affected (0.66 sec)

mysql> DELIMITER ;
mysql> CALL DeletePlayer('Alexandra Popp');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Player;
+-------------------+--------------+-------------------+-----------+
| playerName        | playerPosition | playerNationality | teamName  |
+-------------------+--------------+-------------------+-----------+
| Aitana Bonmati    | Left Back    | Spanish           | Spain     |
| Asuna Tanaka      | Foward       | Japanese          | Japan     |
| Ayumi Kaihori     | Goal Keeper  | Japanese          | Japan     |
| Babett Peter      | Defender     | German            | Germany   |
| Cataline Usme     | Foward       | Colombian         | Colombia  |
| Darren Tan        | Striker      | Swedish           | Sweden    |
| Debbie Rademacher | Defender     | American          | USA       |
| Enith Salon       | Goal Keeper  | Spanish           | Spain     |
| Esther Gonzalez   | Striker      | Spanish           | Spain     |
| Foad Handsome     | Defender     | Brazilian         | Brazil    |
| Hege Riise        | Midfielder   | Norwegian         | Norway    |
| Hope Solo         | Goal Keeper  | American          | USA       |
| Irene Guerrero    | Foward       | Spanish           | Spain     |
| Joy Fawcett       | Defender     | German            | Germany   |
| Kosovare Asllani  | Striker      | Swedish           | Sweden    |
| Maren Mjelde      | Defender     | Norwegian         | Norway    |
| Millie Bright     | Defender     | English           | England   |
| Nia Kunzer        | Defender     | German            | Germany   |
| Olga Carmona      | Left Back    | Spanish           | Spain     |
| Rafaelle Souza    | Defender     | Brazilian         | Brazil    |
| Reidun Seth       | Goal Keeper  | Norwegian         | Norway    |
| Rumi Utsugi       | Midfielder   | Japanese          | Japan     |
| Saki Kumagai      | Defender     | Japanese          | Japan     |
| Sam Kerr          | Foward       | Australian        | Australia |
| Saskia Webber     | Defender     | American          | USA       |
| Simone Laudehr    | Midfielder   | German            | Germany   |
| Stephanie Catley  | Defender     | Australian        | Australia |
| Tone Haugen       | Midfielder   | Norwegian         | Norway    |
+-------------------+--------------+-------------------+-----------+
28 rows in set (0.00 sec)
```

Stored procedure to insert new Championship Record while adding the record number.

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE InsNewRecord(
    -> g varchar(50),
    -> s int,
    -> y int,
    -> t varchar(30)
    -> )
    -> COMMENT 'New Record has been added. '
    -> BEGIN
    -> DECLARE nextNo char(4);
    -> SELECT IFNULL(MAX(recordNo) + 1, 'R001') INTO nextNo FROM ChampionshipRecord;
    ->
Display all 764 possibilities? (y or n)
    ->    INSERT INTO ChampionshipRecord (recordNo, topGoalScorers, goalsScored, recordYear, teamName)
    ->
Display all 764 possibilities? (y or n)
    ->    VALUES (nextNo, g, s, y, t);
    -> END //
Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER ;
mysql> CALL InsNewRecord('Jackson Wang', 8, 2027, 'USA');
Query OK, 1 row affected (0.00 sec)

mysql> CALL InsNewRecord('Justin Bieber', 10, 2031, 'Vietnam');
Query OK, 1 row affected (0.09 sec)

mysql> SELECT * FROM ChampionshipRecord
    -> ORDER BY recordNo;
+----------+---------------------+-------------+------------+----------+
| recordNo | topGoalScorers      | goalsScored | recordYear | teamName |
+----------+---------------------+-------------+------------+----------+
|        1 | Hinata Miyazawa     |           5 |       2023 | Japan    |
|        2 | Alex Morgan         |           6 |       2019 | USA      |
|        3 | Megan Rapinoe       |           6 |       2019 | USA      |
|        4 | Carli Lloyd         |           6 |       2015 | USA      |
|        5 | Homare Sawa         |           5 |       2011 | Japan    |
|        7 | Birgit Prinz        |           7 |       2003 | Germany  |
|        8 | Sun Wen             |           7 |       1999 | China PR |
|        9 | Sissi               |           7 |       1999 | Brazil   |
|       10 | Ann Kristin Aarones |           6 |       1995 | Norway   |
|       11 | Michelle Akers      |          10 |       1991 | USA      |
|       12 | Jackson Wang        |           8 |       2027 | USA      |
|       13 | Justin Bieber       |          10 |       2031 | Vietnam  |
+----------+---------------------+-------------+------------+----------+
12 rows in set (0.00 sec)
```
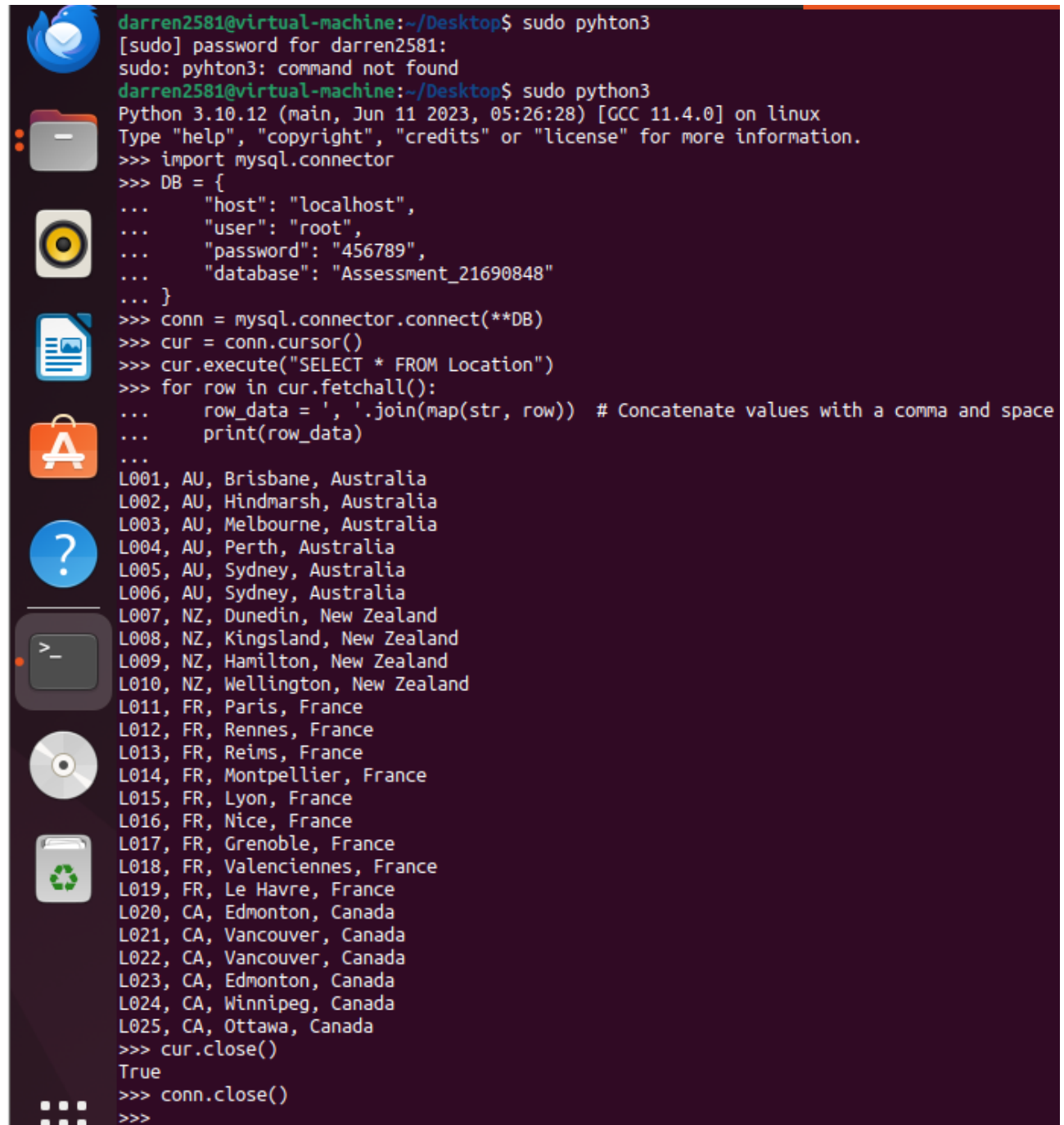
View for Players.

```
mysql> CREATE VIEW Record AS
    -> SELECT topGoalScorers AS Player, goalsScored AS Goals, recordYear AS Year, C.teamName AS Team
    -> FROM ChampionshipRecord C JOIN Team T
    -> ON C.teamName = T.teamName;
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT Player, Goals, Year, Team
    -> FROM Record WHERE Team = 'USA';
+----------------+-------+------+------+
| Player         | Goals | Year | Team |
+----------------+-------+------+------+
| Alex Morgan    |     6 | 2019 | USA  |
| Carli Lloyd    |     6 | 2015 | USA  |
| Jackson Wang   |     8 | 2027 | USA  |
| Megan Rapinoe  |     6 | 2019 | USA  |
| Michelle Akers |    10 | 1991 | USA  |
+----------------+-------+------+------+
5 rows in set (0.00 sec)
```

Python Implementation

Retrieve Location table from database

```
darren2581@virtual-machine:~/Desktop$ sudo pyhton3
[sudo] password for darren2581:
sudo: pyhton3: command not found
darren2581@virtual-machine:~/Desktop$ sudo python3
Python 3.10.12 (main, Jun 11 2023, 05:26:28) [GCC 11.4.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import mysql.connector
>>> DB = {
...     "host": "localhost",
...     "user": "root",
...     "password": "456789",
...     "database": "Assessment_21690848"
... }
>>> conn = mysql.connector.connect(**DB)
>>> cur = conn.cursor()
>>> cur.execute("SELECT * FROM Location")
>>> for row in cur.fetchall():
...     row_data = ', '.join(map(str, row))  # Concatenate values with a comma and space
...     print(row_data)
...
L001, AU, Brisbane, Australia
L002, AU, Hindmarsh, Australia
L003, AU, Melbourne, Australia
L004, AU, Perth, Australia
L005, AU, Sydney, Australia
L006, AU, Sydney, Australia
L007, NZ, Dunedin, New Zealand
L008, NZ, Kingsland, New Zealand
L009, NZ, Hamilton, New Zealand
L010, NZ, Wellington, New Zealand
L011, FR, Paris, France
L012, FR, Rennes, France
L013, FR, Reims, France
L014, FR, Montpellier, France
L015, FR, Lyon, France
L016, FR, Nice, France
L017, FR, Grenoble, France
L018, FR, Valenciennes, France
L019, FR, Le Havre, France
L020, CA, Edmonton, Canada
L021, CA, Vancouver, Canada
L022, CA, Vancouver, Canada
L023, CA, Edmonton, Canada
L024, CA, Winnipeg, Canada
L025, CA, Ottawa, Canada
>>> cur.close()
True
>>> conn.close()
>>>
```

Insert new data for ChampionshipRecord table

```
>>> import mysql.connector
>>> DB = {
...     "host": "localhost",
...     "user": "root",
...     "password": "456789",
...     "database": "Assessment_21690848"
... }
>>> conn = mysql.connector.connect(**DB)
>>> cur = conn.cursor()
>>> # Call the stored procedure
>>> cur.callproc("InsNewRecord", ('Michelle Lau', 15, 2035, 'Vietnam'))
('Michelle Lau', 15, 2035, 'Vietnam')
>>> # Commit the changes
>>> conn.commit()
>>>
>>> cur.close()
True
>>> conn.close()
>>>
```

The Prove that the data has been added into the table using python.

```
mysql> select * from ChampionshipRecord;
+----------+-------------------+-------------+------------+----------+
| recordNo | topGoalScorers    | goalsScored | recordYear | teamName |
+----------+-------------------+-------------+------------+----------+
|        2 | Alex Morgan       |           6 |       2019 | USA      |
|       10 | Ann Kristin Aarones |         6 |       1995 | Norway   |
|        7 | Birgit Prinz      |           7 |       2003 | Germany  |
|        4 | Carli Lloyd       |           6 |       2015 | USA      |
|       12 | Devon Wee         |           8 |       2027 | USA      |
|        1 | Hinata Miyazawa   |           5 |       2023 | Japan    |
|        5 | Homare Sawa       |           5 |       2011 | Japan    |
|        6 | Marta             |           7 |       2007 | Brazil   |
|        3 | Megan Rapinoe     |           6 |       2019 | USA      |
|       11 | Michelle Akers    |          10 |       1991 | USA      |
|       14 | Michelle Lau      |          15 |       2035 | Vietnam  |
|       13 | Serena Gomez      |          10 |       2031 | Vietnam  |
|        9 | Sissi             |           7 |       1999 | Brazil   |
|        8 | Sun Wen           |           7 |       1999 | China PR |
+----------+-------------------+-------------+------------+----------+
14 rows in set (0.00 sec)

mysql>
```

Deleting player

```
>>> import mysql.connector
>>>
>>> DB = {
...      "host": "localhost",
...      "user": "root",
...      "password": "456789",
...      "database": "Assessment_21690848"
... }
>>> conn = mysql.connector.connect(**DB)
>>> cur = conn.cursor()
>>> # Call the stored procedure with an argument as a tuple
>>> cur.callproc("DeletePlayer", ('Sam Kerr',))
('Sam Kerr',)
>>> # Commit the changes
>>> conn.commit()
>>>
>>> cur.close()
True
>>> conn.close()
>>>
```
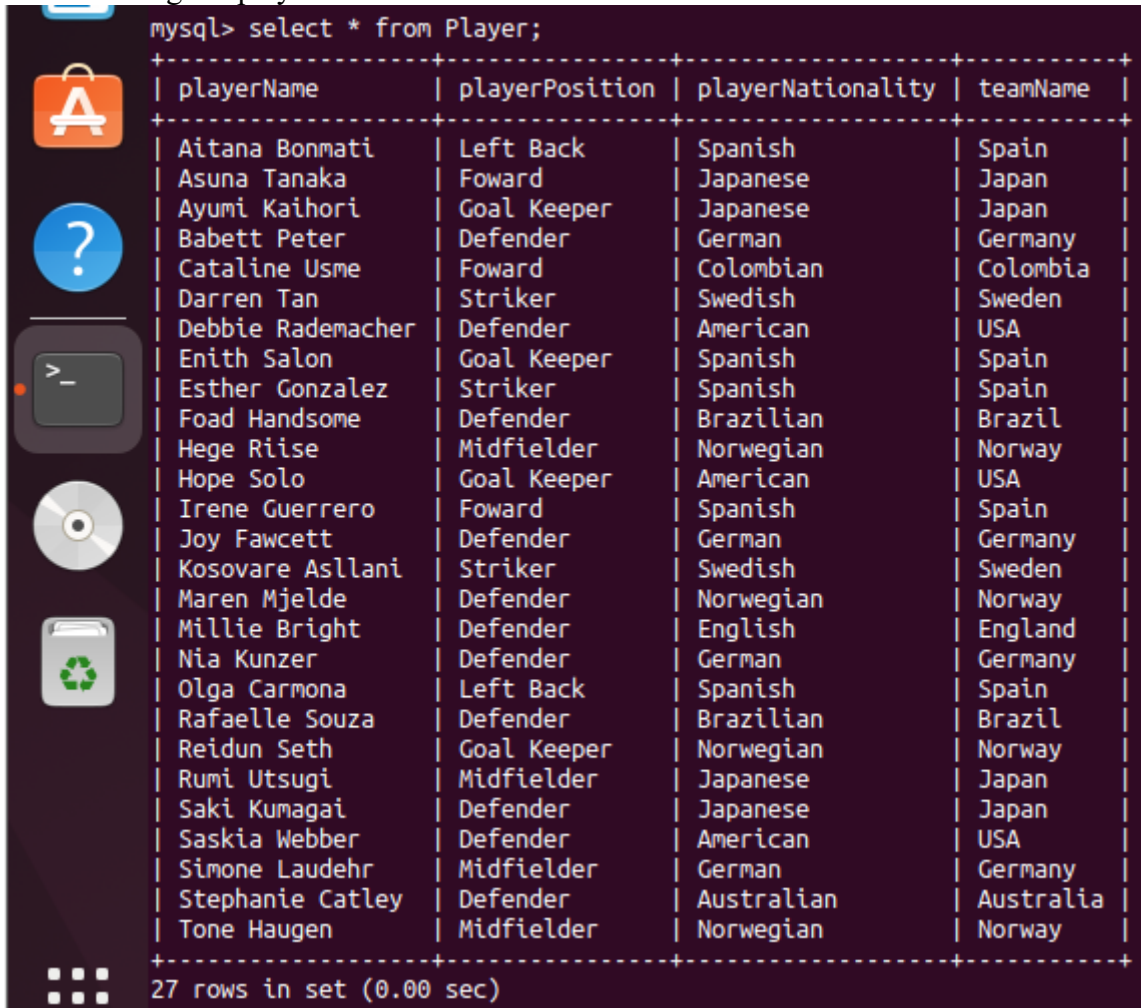
Before deleting the player.

```
mysql> select * from Player;
+-------------------+--------------+-------------------+-----------+
| playerName        | playerPosition | playerNationality | teamName  |
+-------------------+--------------+-------------------+-----------+
| Aitana Bonmati    | Left Back    | Spanish           | Spain     |
| Asuna Tanaka      | Foward       | Japanese          | Japan     |
| Ayumi Kaihori     | Goal Keeper  | Japanese          | Japan     |
| Babett Peter      | Defender     | German            | Germany   |
| Cataline Usme     | Foward       | Colombian         | Colombia  |
| Darren Tan        | Striker      | Swedish           | Sweden    |
| Debbie Rademacher | Defender     | American          | USA       |
| Enith Salon       | Goal Keeper  | Spanish           | Spain     |
| Esther Gonzalez   | Striker      | Spanish           | Spain     |
| Foad Handsome     | Defender     | Brazilian         | Brazil    |
| Hege Riise        | Midfielder   | Norwegian         | Norway    |
| Hope Solo         | Goal Keeper  | American          | USA       |
| Irene Guerrero    | Foward       | Spanish           | Spain     |
| Joy Fawcett       | Defender     | German            | Germany   |
| Kosovare Asllani  | Striker      | Swedish           | Sweden    |
| Maren Mjelde      | Defender     | Norwegian         | Norway    |
| Millie Bright     | Defender     | English           | England   |
| Nia Kunzer        | Defender     | German            | Germany   |
| Olga Carmona      | Left Back    | Spanish           | Spain     |
| Rafaelle Souza    | Defender     | Brazilian         | Brazil    |
| Reidun Seth       | Goal Keeper  | Norwegian         | Norway    |
| Rumi Utsugi       | Midfielder   | Japanese          | Japan     |
| Saki Kumagai      | Defender     | Japanese          | Japan     |
| Sam Kerr          | Foward       | Australian        | Australia |
| Saskia Webber     | Defender     | American          | USA       |
| Simone Laudehr    | Midfielder   | German            | Germany   |
| Stephanie Catley  | Defender     | Australian        | Australia |
| Tone Haugen       | Midfielder   | Norwegian         | Norway    |
+-------------------+--------------+-------------------+-----------+
28 rows in set (0.00 sec)
```

After deleting the player

```
mysql> select * from Player;
+-------------------+---------------+-------------------+-----------+
| playerName        | playerPosition | playerNationality | teamName  |
+-------------------+---------------+-------------------+-----------+
| Aitana Bonmati    | Left Back     | Spanish           | Spain     |
| Asuna Tanaka      | Foward        | Japanese          | Japan     |
| Ayumi Kaihori     | Goal Keeper   | Japanese          | Japan     |
| Babett Peter      | Defender      | German            | Germany   |
| Cataline Usme     | Foward        | Colombian         | Colombia  |
| Darren Tan        | Striker       | Swedish           | Sweden    |
| Debbie Rademacher | Defender      | American          | USA       |
| Enith Salon       | Goal Keeper   | Spanish           | Spain     |
| Esther Gonzalez   | Striker       | Spanish           | Spain     |
| Foad Handsome     | Defender      | Brazilian         | Brazil    |
| Hege Riise        | Midfielder    | Norwegian         | Norway    |
| Hope Solo         | Goal Keeper   | American          | USA       |
| Irene Guerrero    | Foward        | Spanish           | Spain     |
| Joy Fawcett       | Defender      | German            | Germany   |
| Kosovare Asllani  | Striker       | Swedish           | Sweden    |
| Maren Mjelde      | Defender      | Norwegian         | Norway    |
| Millie Bright     | Defender      | English           | England   |
| Nia Kunzer        | Defender      | German            | Germany   |
| Olga Carmona      | Left Back     | Spanish           | Spain     |
| Rafaelle Souza    | Defender      | Brazilian         | Brazil    |
| Reidun Seth       | Goal Keeper   | Norwegian         | Norway    |
| Rumi Utsugi       | Midfielder    | Japanese          | Japan     |
| Saki Kumagai      | Defender      | Japanese          | Japan     |
| Saskia Webber     | Defender      | American          | USA       |
| Simone Laudehr    | Midfielder    | German            | Germany   |
| Stephanie Catley  | Defender      | Australian        | Australia |
| Tone Haugen       | Midfielder    | Norwegian         | Norway    |
+-------------------+---------------+-------------------+-----------+
27 rows in set (0.00 sec)
```

Reflection

During the assignment, I was able to use most of the things I have learned from my database systems unit and implement them into my assignment. I was able to create tables with their respective attributes. The data that had to be inserted into my table was considered a lot, but I was able to get the data needed from related internet sources to complete my table. Other than that, I was able to connect Python to the database to retrieve data and call procedures. The challenge that I faced in this assignment was implementing triggers into my database. I did not know where to connect or when to use triggers for my database. In the future, I can improve by making use of triggers in my database to improve efficiency. Overall, the databases show information clearly and the attributes are declared properly while setting the primary key and foreign key.