Module 3 - Demonstrate and Apply - Ty Davis

1. Complete the following table with the name of each entity, the entity's primary key attribute(s), and all foreign keys in the entity if there are any.

Entity	Primary Key Attribute Name(s)	Foreign Key(s)
Achievements	AchievementID	GameID, PlayerID
Games	GameID	GameTypeID
GameTypes	GameTypeID	
Players	PlayerID	
Scores	ScoreID	PlayerID, GameID

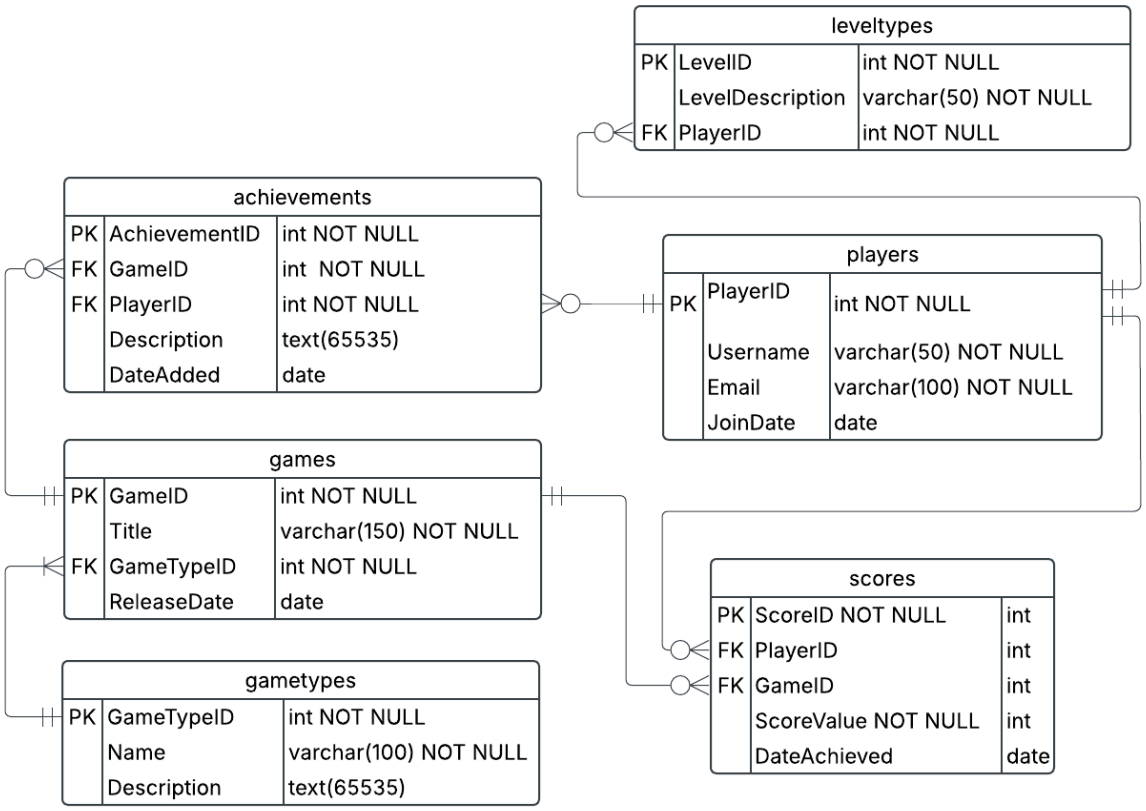
2. Describe the relationship between Players and Scores.Write two sentences, reading the relationship in both directions. Make sure to use the format indicated in the Learning Activity. (10 points possible)
   Players can have many scores.
   Scores can only belong to one player.

3. Describe the relationship between Games and GameTypes.Write two sentences, reading the relationship in both directions. Make sure to use the format indicated in the Learning Activity. (10 points possible)
   GameTypes can belong to more than one Game.
   Games can only have one GameType.

4. Describe the relationship between Games and Scores.Write two sentences, reading the relationship in both directions. Make sure to use the format indicated in the Learning Activity. (10 points possible)
   A game can be tied to multiple scores.
   A score can only be attached to one game.

5. What attribute is not required in the game table? Why would it not be required? (10 points possible)
   ReleaseDate. It is useful but not required information for the function of the system.

6. The gaming platform has decided they would like to track the levels of each player.
   Each player will be assigned exactly one level type. A level type can be assigned from zero to many players.
   Add the following entity to your copy of the Video Game ERD. (5 points possible)
   CHART
   a. The entity should be named LevelTypes.
   b. levelID will be the primary key with a data type of int.
   c. Additional attributes to include are:
      i. LevelDescription varchar(50) NOT NULL
   d. Add the relationship line between LevelTypes and Players. Make sure to include crow's foot notation on both ends of the line. (5 points possible)
      CHART
   e. Add the foreign key to the correct table. You decide if the foreign key is to be placed in the LevelTypes table or the Players table based on the relationship description. (3 points possible)
      CHART
   Insert a picture of the updated ERD. You can download your diagram as a picture and use Insert→ Image to put a copy of it in this document.



7. Write a CREATE TABLE statement for the Achievements table. Include all primary, and foreign keys and constraints. Add a CHECK constraint on the DateAdded to make sure it is greater than 1/1/2010. (10 points possible)

```
CREATE TABLE Achievements (
    AchievementID INT NOT NULL AUTO_INCREMENT,
    GameID INT NOT NULL,
    PlayerID INT NOT NULL,
    Description TEXT,
    DateAdded DATE CHECK (DateAdded >= '2010-01-01'),
    PRIMARY KEY (AchievementID),
    FOREIGN KEY (GameID) REFERENCES Games(GameID),
    FOREIGN KEY (PlayerID) REFERENCES Players(PlayerID)
);
```

8. Write a CREATE TABLE statement for the Players table. Include all primary, and foreign keys, and constraints. Include a UNIQUE constraint on the username and email.(10 points possible)

```
CREATE TABLE Achievements (
    PlayerID INT NOT NULL AUTO_INCREMENT,
    Username VARCHAR(50) NOT NULL UNIQUE,
    Email VARCHAR(100) NOT NULL UNIQUE,
    JoinDate DATE,
    PRIMARY KEY (PlayerID)
);
```