1. Introduction

This project includes basic information about the NBA playoffs and seasons. Information such as player stats, rosters, and player information can be viewed. This site is meant for any fan of the NBA who is looking for information about NBA teams and players. This site is also for users who want to display who their favorite players and teams are.
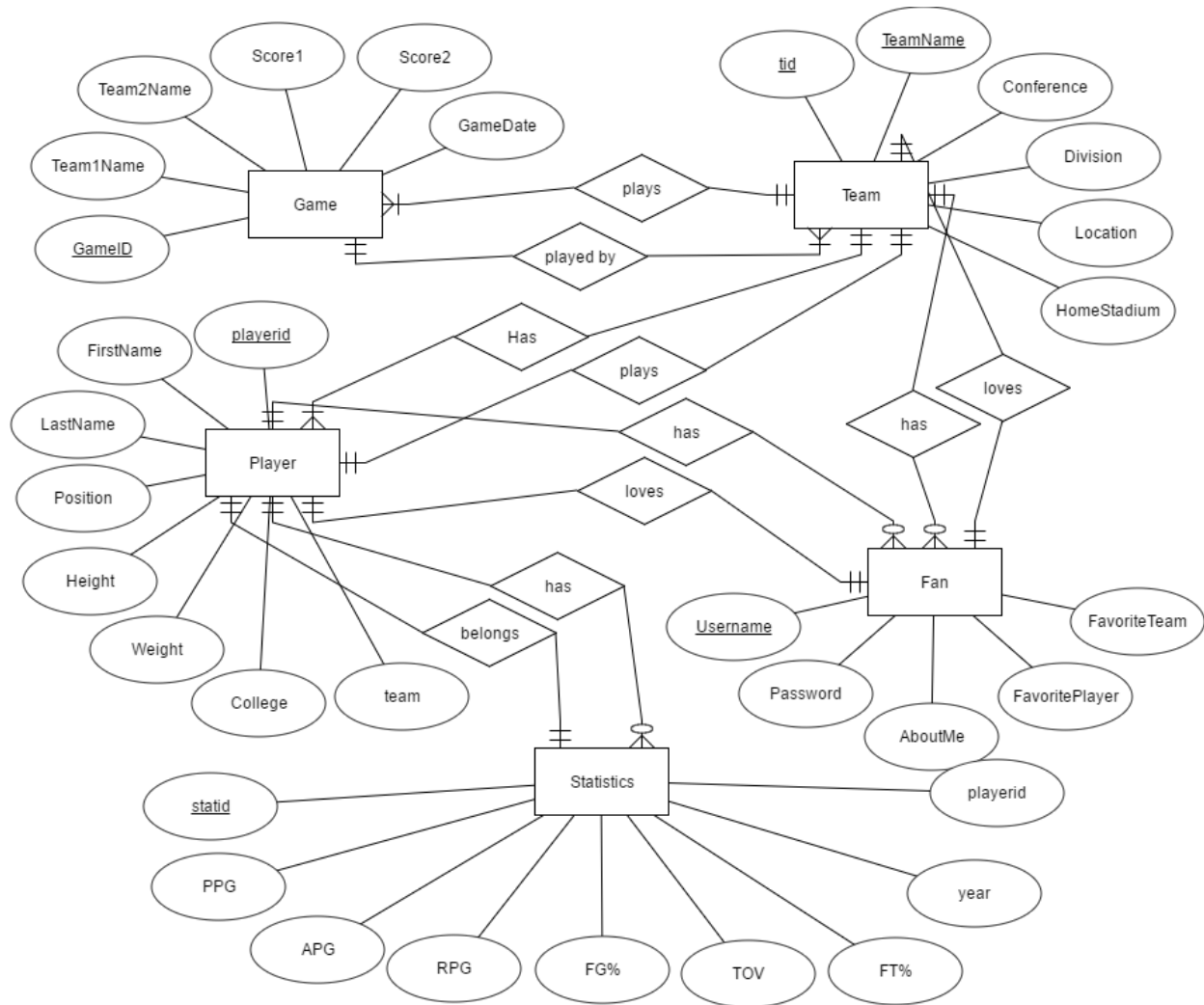
2. Detailed Functionality & Requirements

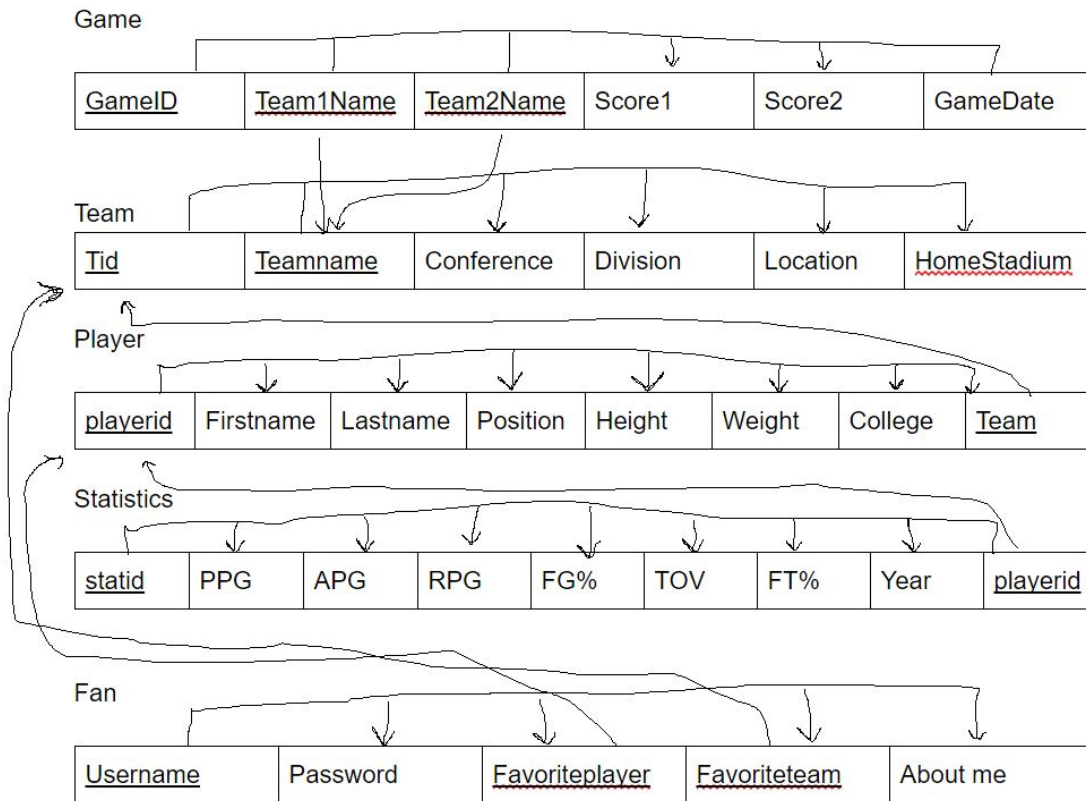This section describes the business rules and the requirements of the application in detail.

- Requirements for the operation/functionality
    a. User accounts and Login
    b. Player Lookup with Stats/Name
    c. Team Search
    d. User Favorite Team/Players
    e. Game Stats
    f. Users can view other fans

- Business rules
    g. Teams have players
    h. Players play in games
    i. Players have statistics
    j. Players have fans
    k. Fans follow favorite teams/players
    l. Fans can rate a game once
    m. Games have statistics
    n. Teams play
    o. Fans can have one favorite teams
    p. Fans can have one favorite players
    q. Users must register and sign in to become a "Fan"

Database Design – 10 points

ER Diagram & Relational Model

Game

GameID	Team1Name	Team2Name	Score1	Score2	GameDate

Team

Tid	Teamname	Conference	Division	Location	HomeStadium

Player

playerid	Firstname	Lastname	Position	Height	Weight	College	Team

Statistics

statid	PPG	APG	RPG	FG%	TOV	FT%	Year	playerid

Fan

| Username	Password	Favoriteplayer	Favoriteteam	About me

MySQL database tables, views, at least two trigger/procedure/function

Database Tables

Tables:

Team:

			tid	TeamName	Conference	Division	Location	HomeStadium
☐	🖉 Edit ᗡᴵᴱ Copy ⊖ Delete		12	Atlanta Hawks	Eastern	Southeast	Atlanta, GA	Philips Arena
☐	🖉 Edit ᗡᴵᴱ Copy ⊖ Delete		0	Boston Celtics	Eastern	Atlantic	Boston, MA	TD Garden

Player:

	playerid	FirstName	LastName	Position	Height	Weight	College	team
☐ Edit ⅔ Copy ⊖ Delete	5	LeBron	James	SG	6-8	250	St. Vincent-St. Mary HS	Cleveland Cavaliers
☐ Edit ⅔ Copy ⊖ Delete	6	James	Harden	SG	6-5	220	Arizona State	Houston Rockets
☐ Edit ⅔ Copy ⊖ Delete	7	Russell	Westbrook	PG	6-3	200	UCLA	Oklahoma City Thunder
☐ Edit ⅔ Copy ⊖ Delete	8	Rajon	Rondo	PG	6-1	186	Kentucky	Chicago Bulls
☐ Edit ⅔ Copy ⊖ Delete	9	Damian	Lillard	PG	6-3	195	Weber State	Portland Trail Blazers
☐ Edit ⅔ Copy ⊖ Delete	10	CJ	McCollum	SG	6-3	190	Lehigh	Portland Trail Blazers
☐ Edit ⅔ Copy ⊖ Delete	11	Al	Horford	C	6-10	245	Florida	Boston Celtics
☐ Edit ⅔ Copy ⊖ Delete	12	Isaiah	Thomas	G	5-9	185	Washington	Boston Celtics
☐ Edit ⅔ Copy ⊖ Delete	13	Giannis	Antetokounmpo	F-G	6-11	222	Greece	Milwaukee Bucks
☐ Edit ⅔ Copy ⊖ Delete	14	John	Wall	G	6-4	210	Kentucky	Washington Wizards
☐ Edit ⅔ Copy ⊖ Delete	15	Dennis	Schroder	PG	6-1	172	Germany	Atlanta Hawks
☐ Edit ⅔ Copy ⊖ Delete	17	Derrick	Favors	F-C	6-10	265	Georgia Tech	Utah Jazz
☐ Edit ⅔ Copy ⊖ Delete	18	Brook	Lopez	C	7-0	275	Stanford University	Brooklyn Nets
☐ Edit ⅔ Copy ⊖ Delete	19	Kyle	Lowry	G	6-0	205	Villanova	Toronto Raptors
☐ Edit ⅔ Copy ⊖ Delete	20	Kemba	Walker	PG	6-1	172	University of Connecticut	Charlotte Hornets
☐ Edit ⅔ Copy ⊖ Delete	21	Dirk	Nowitzki	PF	7-0	245	Germany	Dallas Mavericks
☐ Edit ⅔ Copy ⊖ Delete	22	LaMarcus	Aldridge	F	6-11	260	Texas	San Antonio Spurs
☐ Edit ⅔ Copy ⊖ Delete	23	Darren	Collison	G	6-0	175	UCLA	Sacramento Kings
☐ Edit ⅔ Copy ⊖ Delete	24	Kenneth	Faried	PF	6-8	228	Morehead State University	Denver Nuggets
☐ Edit ⅔ Copy ⊖ Delete	25	Andre	Drummond	C	6-11	279	University of Connecticut	Detroit Pistons
☐ Edit ⅔ Copy ⊖ Delete	26	Eric	Bledsoe	G	6-1	205	Kentucky	Phoenix Suns
☐ Edit ⅔ Copy ⊖ Delete	27	Robert	Covington	F	6-9	215	Tennessee State	Philadelphia 76ers
☐ Edit ⅔ Copy ⊖ Delete	28	Stephen	Curry	PG	6-3	190	Davidson College	Golden State Warriors
☐ Edit ⅔ Copy ⊖ Delete	29	Paul	George	SG	6-9	220	California State University	Indiana Pacers

Statistics:

	statid	PPG	APG	RPG	FG%	TOV	FT%	BPG	3P%	PER	TS%	GP	year	nba_player
☐ Edit ⅔ Copy ⊖ Delete	136	16.6	5.3	1.2	0.502	2.3	1.2	0.2	5.3	18.8	0.586	26	2014	41
☐ Edit ⅔ Copy ⊖ Delete	120	16.6	3.8	1.1	0.464	2.3	0.829	1.3	0.667	17.7	0.528	52	2015	38
☐ Edit ⅔ Copy ⊖ Delete	70	15.8	1.2	2.7	0.593	2.8	0.528	1.3	0.5	19.2	0.596	41	2014	43
☐ Edit ⅔ Copy ⊖ Delete	52	12.5	1.2	8.7	0.558	1.4	0.613	0.9	0.5	21	0.577	67	2015	24
☐ Edit ⅔ Copy ⊖ Delete	89	16.9	9.7	0.8	0.481	2.3	0.885	0.1	0.481	26.4	0.594	70	2012	31
☐ Edit ⅔ Copy ⊖ Delete	65	30.1	6.7	5.4	0.504	3.3	0.908	0.2	0.454	31.5	0.669	79	2015	28
☐ Edit ⅔ Copy ⊖ Delete	63	23.8	7.7	4.3	0.487	3.1	0.914	0.2	0.443	28	0.638	80	2014	28
☐ Edit ⅔ Copy ⊖ Delete	62	24	8.5	4.3	0.471	3.8	0.885	0.2	0.424	24.1	0.61	78	2013	28
☐ Edit ⅔ Copy ⊖ Delete	67	13.2	4.6	2.3	0.476	1.7	0.86	0.1	0.417	15.3	0.57	68	2016	23
☐ Edit ⅔ Copy ⊖ Delete	85	18.1	9.2	0.7	0.476	2.4	0.892	0.1	0.411	26.2	0.614	61	2016	31
☐ Edit ⅔ Copy ⊖ Delete	66	25.3	6.6	4.5	0.468	3	0.898	0.2	0.411	24.6	0.624	79	2016	28
☐ Edit ⅔ Copy ⊖ Delete	55	17.3	1.9	7.3	0.477	1.4	0.812	1.2	0.411	18.6	0.532	72	2016	22
☐ Edit ⅔ Copy ⊖ Delete	92	8.8	1	0.7	0.367	2	0.727	0.2	0.409	13	0.492	6	2014	29
☐ Edit ⅔ Copy ⊖ Delete	123	20.5	6.3	0.4	0.459	2.3	0.859	0.3	0.407	23.2	0.604	69	2016	39

Fan:

	Username	Password	AboutMe	FavoritePlayer	FavoriteTeam
Edit ⁍ Copy ⊖ Delete	jwest473	ajh92u83hpjklav92hashed	Stuff about the user goes here. Maximum of 250 wor...	40	Minnesota Timberwolves
Edit ⁍ Copy ⊖ Delete	lowry232	alsjf23oijf09sfhashed	About the user here.	25	Atlanta Hawks

Game:

	GameID	Team1Name	Team2Name	Score1	Score2	GameDate
Edit ⁍ Copy ⊖ Delete	1	Golden State Warriors	Toronto Raptors	97	92	2016-10-01
Edit ⁍ Copy ⊖ Delete	2	New Orleans Pelicans	Dallas Mavericks	116	102	2016-10-01

GameSchedule:

Team1Name	Team2Name	GameDate	Location	GameID
Golden State Warriors	Toronto Raptors	2016-10-01	San Fransisco, CA	1

Update Trigger:

CREATE TRIGGER on_update_team BEFORE UPDATE ON team FOR EACH ROW BEGIN UPDATE fan f SET f.FavoriteTeam =NEW.TeamName WHERE f.FavoriteTeam = OLD.TeamName; UPDATE player p SET p.team = NEW.TeamName WHERE p.team =OLD.TeamName; UPDATE GameSchedule SET Team1Name = NEW.TeamName WHERE OLD.TeamName = Team1Name; UPDATE GameScheduleSET Team2Name = NEW.TeamName WHERE OLD.TeamName = Team2Name; UPDATE Game SET Team1Name = NEW.TeamName WHEREOLD.TeamName = Team1Name; UPDATE Game SET Team2Name = NEW.TeamName WHERE OLD.TeamName = Team2Name; END

When a record in the team table is updated, we only care about the primary key TeamName. If this is updated, then all foreign keys that use this value need to also be updated that match.

Delete Trigger:

CREATE TRIGGER on_delete_player BEFORE DELETE ON player FOR EACH ROW BEGIN UPDATE fan f SET f.FavoritePlayer = NULL WHERE f.FavoritePlayer = OLD.playerid; DELETE FROM statistics WHERE nba_player = OLD.playerid; END

Since there is a relationship between players and fans, a player cannot be a fan of a player that is not in the database. Because of this, if a player is deleted, FavoritePlayer keys that match this player will be set to NULL in the fan table. This includes the player's statistics as well in the statistics table except the whole record would be deleted.

<u>View</u>

```
CREATE VIEW teamstats AS
SELECT t.TeamName, AVG(s.---)
FROM team t, player p, statistics s
WHERE t.TeamName = p.team AND p.playerid = s.nba_player
GROUP BY t.TeamName;



CREATE VIEW west AS
SELECT TeamName
FROM team
WHERE Conference = "Western";

CREATE VIEW east AS
SELECT TeamName
FROM team
WHERE Conference = "Eastern";
```

Primary and foreign keys   - In ERD and Relational Schema

Website Design, Layout & User manual – 15 points

Including navigation, CSS

4. Website Design

Discuss the design of your website.

· **Website Layout**

.

NBA Home Page

Teams

Players

Login/Logout

Fan Page

Schedule

Games

User Interface

This page displays all the players in the database. It can be searched with a wildcard search through the SQL command below. This page requires input from users so prepared statements are used to prevent injection attacks.

```
SELECT * FROM player
WHERE FirstName LIKE CONCAT ('%',?,'%') OR LastName
```

```
LIKE CONCAT ('%',?,'%')
OR ? LIKE CONCAT (FirstName,' ',LastName)";
```

The default page however with no search shows all the players at once. This is done with the simple SQL select statement shown below.

```
SELECT * FROM player;
```


This page is the player statistics page. The user selects inputs thorough two dropdown menus. The team dropdown menu is first populated with this simple SQL statement below.

```
SELECT TeamName FROM team
```

When the user chooses a team, an AJAX call is made which populates the the player dropdown menu with this SQL statement below. This command is the destination url for

the AJAX call. The ? will be filled with the prepared POST variable sent through the AJAX call which is the team name.

```
SELECT * FROM player WHERE team = ? ORDER BY LastName;
```

The user can then choose a player from the player dropdown menu. When this is . done, the SQL statement below is called displaying all the stats for the selected player in a HTML table.

```
SELECT * FROM statistics s
          INNER JOIN player p ON s.nba_player = p.playerid
          WHERE s.nba_player = ? ORDER BY s.year
```

Team Name

Atlanta Hawks
Boston Celtics
Brooklyn Nets
Charlotte Hornets
Chicago Bulls
Cleveland Cavaliers
Dallas Mavericks
Denver Nuggets
Detroit Pistons
Golden State Warriors
Houston Rockets
Indiana Pacers
Los Angeles Clippers
Los Angeles Lakers
Memphis Grizzlies
Miami Heat
Milwaukee Bucks
Minnesota Timberwolves
New Orleans Pelicans
New York Knicks
Oklahoma City Thunder
Orlando Magic
Philadelphia 76ers
Phoenix Suns
Portland Trail Blazers
Sacramento Kings
San Antonio Spurs
Toronto Raptors
Utah Jazz
Washington Wizards

This page simply lists all the NBA teams in the database. Later on, each of these teams will be clickable leading the user to the player page with players in that clicked team. The SQL command is shown below.

```
SELECT FirstName, LastName FROM player p
        INNER JOIN team t ON p.team = t.TeamName
        ORDER BY LastName;
```

Login/Sign-Up

Home Players Player Statistics Games Schedule Teams

Username: [   ] *required
Password: [   ] *required (must only be letters)

[Create Account]

NOTE: "must only be letters" is a UI bug. The user can enter any characters for their password.

This is where the user can create an account to add favorite teams and players. The SQL INSERT command used is below.

```
INSERT INTO fan (Username,Password) VALUES (?,?)
```

Favourites and Information

Favorite Player ▼

Add Favorite Player

Favorite Team ▼

Add Favorite Team

Some stuff about me

Add About

This page is for logged in users only. They can set their favorite team, favorite player, and other information. The user will be inputting information here. One of the SQL commands for the fields is listed below.

```
UPDATE fan
SET FavoriteTeam = ?
WHERE UserName = ?;
```

NBA Information Home

Teams Players Player Statistics Games Schedule Login/Sign-Up

NBA Home

Home

Page

The home page is the main navigation page. This is the first page that the user sees.

NBA Games

Home Players Player Statistics Teams Schedule Login/Sign-Up

Team 1	Score	Team 2	Score	Date
Golden State Warriors	97	Toronto Raptors	92	2016-10-01
New Orleans Pelicans	116	Dallas Mavericks	102	2016-10-01

Other pages that have yet to be implemented are the schedules page

· **User Manual or Help page**
   - On the home page select the login button at the top of the screen to register or login.
   - Enter your desired/login credentials and select register or login.
       - Note : If you are registering for an account you will have to login once you have created it.
   - You will be redirected to a blank page with a link at the top to "enter member area"

- Click on the button and you will be redirected to the fan page.
- From the fan page you may select your favorite team and player, as well as update your bio.
- You may also click the button "view team fan stats" and see how many fans each team has.
- There is also an option to logout if you would like.
- From there you may view Teams, Player Stats, Players and Games (2017 finals)

- Option 1: Teams
    - From the Teams page you may view the teams from each conference.
    - You can also select the team you like and it will redirect you to the players page with a list of players from that team.

- Option 2: Players
    - From the players page you may search for any player you would like.
    - If you click on the player's name you will be redirected to their statistics

- Option 3: Players Statistics
    - From this page you may select any player you would like and view their stats.
    - Select the player from the dropdown menu and click the button below to view the stats.

- Option 4: Games
    - Here we have just a simple table displaying the results of the games from the 2017 NBA Finals.

Application Functionality & Requirements: - 65 points
Below list at least six features of your website and how to test them. All input must be error checked.
Functionality implemented without SQL can be listed for credit; however, you must have at least five
SQL queries including at least one insert or update generated from user input and at least two
complex queries involving multiple tables.

1. Fan page:
    - In order to view this page a user must be logged in. Once you are logged in you may add/change your favorite team or player. You also may enter a bio if you choose to do so. Each fan can only have one favorite player and team.
    - The SQL that we used is below:
        - "SELECT FirstName, LastName FR
        - OM player ORDER BY LastName"

- "SELECT TeamName FROM team""UPDATE fan SET FavoritePlayer = ? WHERE Username = '".$username."'";

2. 2017 Finals game results page:
  - To view the results of the finals game you have to navigate to the game page. The button is located at the top of each screen unless you are on the page itself. From there you may view the results of the Finals games from 2017.
  - The simple SQL query used to display the results from the game page is listed below:
    - SELECT * FROM Games

3. Creating an account
  - The user will enter his intended username or password. From here, the user can either click sign up or login. Sign up will make a new account using those credentials as long as the username does not exist. Login will log the user to his account if the username and password match with a record in the fans database.
  - This SQL query below was used to do this. These commands show the create account. For the login, there will be a select statement to see if a certain record exist and use that to log in setting the session to the username pulled from the database.
    - `INSERT INTO fan (Username,Password) VALUES (?,?);`
    - `SELECT username FROM fan WHERE username = ?;`

4. Showing statistics of a user selected player
  - When the user submits the player he wants to see the stat of, we will use a query. The user can see all statistics of given years that exist in the database.
  - "SELECT * FROM statistics s
    INNER JOIN player p ON s.nba_player = p.playerid
    WHERE s.nba_player = ? ORDER BY s.year";

5. Hyperlink from teams to players

  - The code and query below is used to link the teams page and the players page. When a user looks at the team page they may click on the team whose roster they would like to view. From there you will be redirected to the players page which you can click on the players to view stats.

  -
    ```
    else if(isset($_GET["data_team"])){ //redirected from team.php

        $t =     $_GET["data_team"];
        //echo $t;
        $strQuery = "SELECT * FROM player p
    ```

```
                WHERE p.team IN (SELECT TeamName FROM team WHERE ? = tid
)";
        /*Prepare Statement for security*/
        $result = $dbhandle -> prepare($strQuery);
        /*Bind search to two parameters for first and last name*/
        $result -> bind_param("s",$t);
        $result -> execute();
        $result = $result -> get_result();

    }
```

6. Ajax to update user's selected drop down

- This Ajax call will populate the team drop down based on what the user selects on the player drop down. This is a partial refresh so the Ajax checks for any changes on the team and runs the proper php accordingly.

```
        $('#nbateamid').change(function(){
            var team_id = $(this).val();
            $.ajax({
                url: (team_id != "All Teams") ?
"dropdown/player_drop.php" : "dropdown/player_all_drop.php",
                method:"POST",
                data:{team_id:team_id},
                dataType: "text",
                success:function(data){
                    //alert(team_id);
                    //if()
                    $('#player').html(data);
            }});});
```