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Project Report

Aaron Fye, Bryan May, Reid Richardson, Zachary Yarbrough

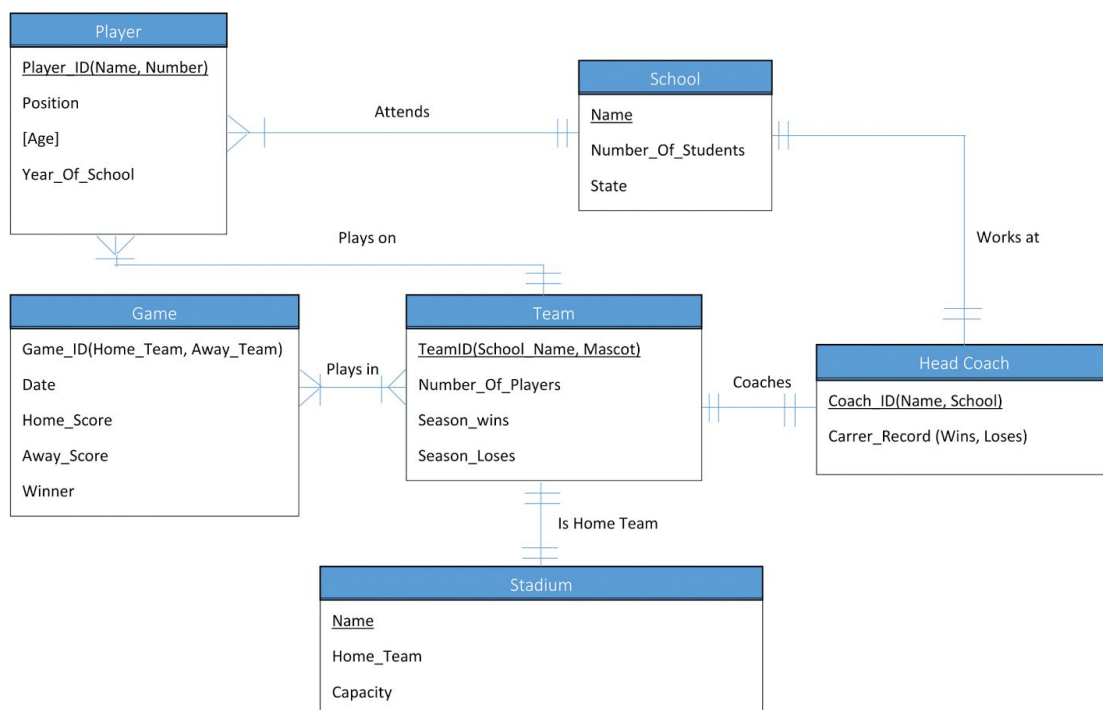
Brief description of our model

- Our database is modeled after the 2016 American Athletic Conference football season. Information is stored about the teams, coaches, players, stadiums, schools, and games.

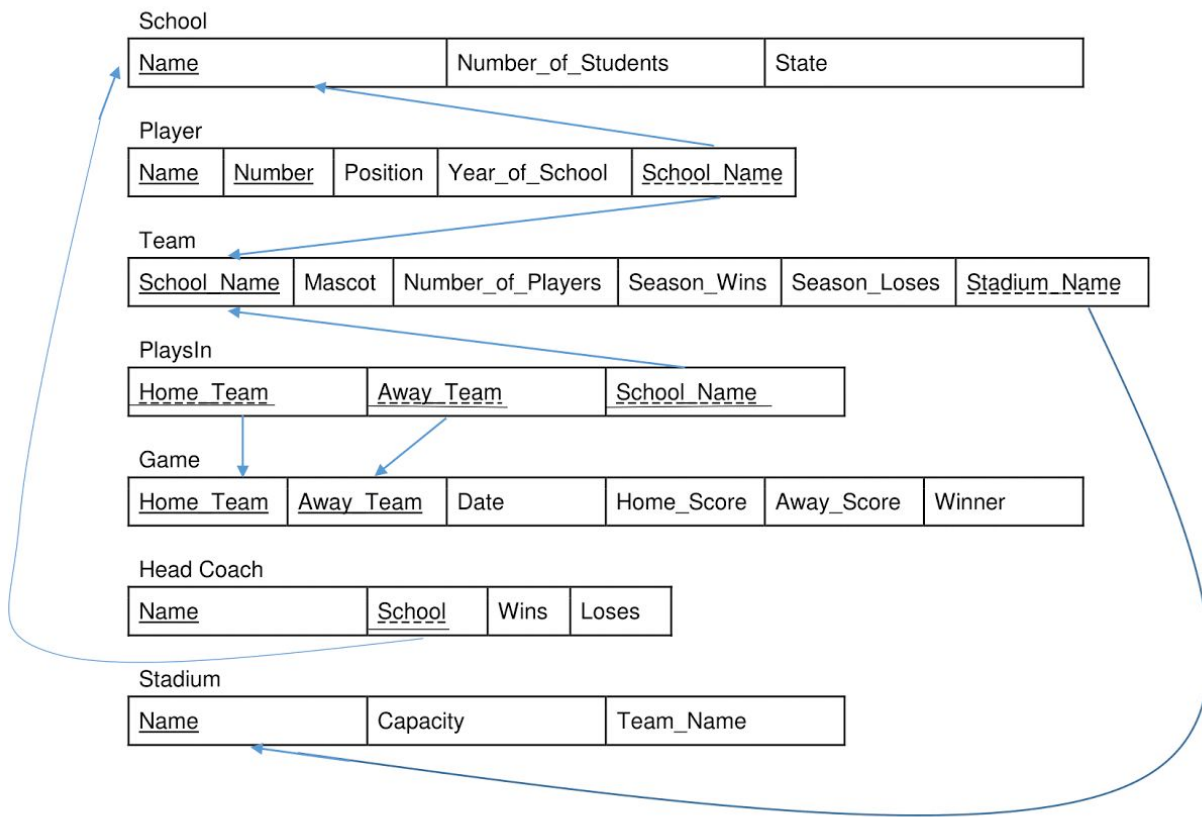
Changes in our model

- The Date_Of_Birth attribute of the player entity was removed, as that information was hard to come by.
- No other changes of note.

ER Diagram



Relational Tables



Issues encountered when implementing our database

- We had an issue where a foreign key constraint was not working, but we determined that it needed to be a composite foreign key, as they were referencing the same table.
- No other major issues.

New Features:

- Added nested queries and queries implementing the Join clause.

Script/Queries

```

1  /* Group Script 3 */
2  /* Queries for our database */
3
4  use cfb_db;
5
6  /* List coaches by most wins descending*/
7
8  Select Name, Career_Wins
9  From coach_t
10 Order By Career_Wins desc;
11
12 /* Alphabetically List All Seniors */
13
14 Select Name, Year_In_School
15 From player_t
16 Where Year_In_School = "Senior"
17 Order By Name;
18
19 /* Alphabetically List all players on UCF */
20
21 Select *
22 From player_t
23 Where School_Name = "Central Florida";
24
25 /* Find all of the coaches with a winning record */
26
27 Select *
28 From coach_t
29 Where Career_Wins > Career_Losses
30 Order By Career_Wins desc;
31
32 /* Season Standings */
33
34 Select School_Name as School,
35        Team_Name as Team,
36        Season_Wins as Wins,
37        Season_Losses as Losses
38 From team_t
39 Order By Wins desc;
40
41 /* View a team's schedule */
42 /* Put in Team Name for the Where clause */
43 Select Home_Team, Away_Team, Date_Played as Date, Home_Score, Away_Score
44 From game_t
45 Where Home_Team = "Central Florida" or Away_Team = "Central Florida"
46 Order By Date;
47
48 /* Find All Games for a Date*/
49 Select*
50 From game_t
51 Where Date_Played = '2016-10-01';
52
53 /* See all of a teams Wins. Just put team name in where clause */

```

```
54 Select *
55 From game_t
56 Where Winner = "Central Florida";
57
58 /* List Games by Total Points Scored*/
59 Select*, Home_Score + Away_Score as Total
60 From game_t
61 Order by Total desc;
62
63 /* Remove a player */
64 /* Always add another, teams need 24 players to play a game */
65 Delete from player_t
66 Where Name = "Zelt Minor" AND Player_Number = 92;
67
68 /* Modify a player */
69 /* Changing a position */
70 Update player_t
71 Set Position = "Quarterback"
72 Where Name = "Zay Jones" AND Player_Number = 7;
73
74 /* Coach gets fired, new one hired */
75 Update coach_t
76 Set Name = "New Coach", Career_Wins = 0, Career_Losses = 0
77 Where Name = "Willie Taggart";
```

Table Results

Listing all of the tables:

```
[mysql> show tables;
+-----+
| Tables_in_cfb_db |
+-----+
| coach_t          |
| game_t           |
| player_t         |
| playsin_t        |
| school_t         |
| stadium_t        |
| team_t           |
+-----+
```

Schema for coach_t

```
[mysql> describe coach_t;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Name           | varchar(30)   | NO   | PRI | NULL    |       |
| School_Name    | varchar(30)   | NO   | PRI | NULL    |       |
| Career_Wins    | int(11)       | YES  |     | NULL    |       |
| Career_Losses  | int(11)       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
[mysql> describe game_t;
```

Field	Type	Null	Key	Default	Extra
Home_Team	varchar(30)	NO	PRI	NULL	
Away_Team	varchar(30)	NO	PRI	NULL	
Date_Played	date	YES		NULL	
Home_Score	int(11)	YES		NULL	
Away_Score	int(11)	YES		NULL	
Winner	varchar(30)	YES		NULL	

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

Schema for player_t

```
[mysql> describe player_t;
```

Field	Type	Null	Key	Default	Extra
Name	varchar(30)	NO	PRI	NULL	
Player_Number	int(11)	NO	PRI	NULL	
Position	varchar(25)	YES		NULL	
Year_In_School	varchar(20)	YES		NULL	
School_Name	varchar(30)	YES	MUL	NULL	

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

```
[mysql> describe playsin_t;
```

Schema for playsin_t

```
[mysql> describe playsin_t;
```

Field	Type	Null	Key	Default	Extra
Home_Team	varchar(30)	NO	PRI	NULL	
Away_Team	varchar(30)	NO	PRI	NULL	
School	varchar(30)	NO	PRI	NULL	

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

Schema for school_t


```
[mysql> describe school_t;
```

Field	Type	Null	Key	Default	Extra
Name	varchar(30)	NO	PRI	NULL	
Num_Students	int(11)	YES		NULL	
State	char(2)	YES		NULL	

3 rows in set (0.00 sec)

Schema for stadium_t

```
[mysql> describe stadium_t;
```

Field	Type	Null	Key	Default	Extra
Name	varchar(50)	NO	PRI	NULL	
Capacity	int(11)	YES		NULL	
Team_Name	varchar(30)	YES		NULL	

3 rows in set (0.00 sec)

Schema for team_t

```
[mysql> describe team_t;
```

Field	Type	Null	Key	Default	Extra
School_Name	varchar(30)	NO	PRI	NULL	
Team_Name	varchar(30)	YES		NULL	
Num_Players	int(11)	YES		NULL	
Season_Wins	int(11)	YES		NULL	
Season_Losses	int(11)	YES		NULL	
Stadium_Name	varchar(50)	YES	MUL	NULL	

6 rows in set (0.00 sec)

Coach table

```
mysql> select * from coach_t;
```

Name	School_Name	Career_Wins	Career_Losses
Bob Diaco	Connecticut	11	24
Chad Morris	Southern Methodist	7	15
Ken Niumatalolo	Navy	75	39
Matt Rhule	Temple	25	23
Mike Norvell	Memphis	6	4
Philip Montgomery	Tulsa	13	10
Scott Frost	Central Florida	6	4
Scottie Montgomery	East Carolina	3	7
Tom Herman	Houston	21	3
Tommy Tuberville	Cincinnati	159	97
Willie Fritz	Tulane	157	76
Willie Taggart	South Florida	38	45

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

Game table

```
mysql> select* from game_t;
```

Home_Team	Away_Team	Date_Played	Home_Score	Away_Score	Winner
Central Florida	Cincinnati	2016-11-12	24	3	Central Florida
Central Florida	Temple	2016-10-15	25	26	Temple
Central Florida	Tulane	2016-11-05	37	6	Central Florida
Cincinnati	East Carolina	2016-10-22	31	19	Cincinnati
Cincinnati	Houston	2016-09-15	16	40	Houston
Cincinnati	South Florida	2016-10-01	20	45	South Florida
Connecticut	Central Florida	2016-10-22	16	24	Central Florida
Connecticut	Cincinnati	2016-10-08	20	9	Connecticut
Connecticut	Temple	2016-11-04	0	21	Temple
East Carolina	Central Florida	2016-10-01	29	47	Central Florida
East Carolina	Connecticut	2016-10-29	41	3	East Carolina
East Carolina	Southern Methodist	2016-11-12	31	55	Southern Methodist
Houston	Central Florida	2016-10-29	31	24	Houston
Houston	Connecticut	2016-09-29	42	14	Houston
Houston	Tulsa	2016-10-15	38	31	Houston
Memphis	South Florida	2016-11-12	42	49	South Florida
Memphis	Temple	2016-10-06	34	27	Memphis
Memphis	Tulsa	2016-10-29	30	59	Tulsa
Navy	Connecticut	2016-09-10	28	24	Navy
Navy	Houston	2016-10-08	46	40	Navy
Navy	Memphis	2016-10-22	42	28	Navy
Navy	Tulsa	2016-11-12	42	40	Navy
South Florida	Connecticut	2016-10-15	42	27	South Florida
South Florida	East Carolina	2016-10-08	38	22	South Florida
South Florida	Navy	2016-10-28	52	45	South Florida
Southern Methodist	Houston	2016-10-22	38	16	Southern Methodist
Southern Methodist	Memphis	2016-11-05	7	51	Memphis
Temple	Cincinnati	2016-10-29	34	13	Temple
Temple	South Florida	2016-10-21	46	30	Temple
Temple	Southern Methodist	2016-10-01	45	20	Temple
Tulane	Memphis	2016-10-14	14	24	Memphis
Tulane	Navy	2016-09-17	14	21	Navy
Tulane	Southern Methodist	2016-10-29	31	35	Southern Methodist
Tulsa	East Carolina	2016-11-05	45	24	Tulsa
Tulsa	Southern Methodist	2016-10-07	43	40	Tulsa
Tulsa	Tulane	2016-10-22	50	27	Tulsa

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

Player table

```
mysql> select* from player_t;
```

Name	Player_Number	Position	Year_In_School	School_Name
Aaron Boumerhi	97	Kicker	Freshman	Temple
Aaron Evans	66	Tackle	Junior (RS)	Central Florida
Adam West	72	Guard	Senior	Navy
Ade Aruna	87	Defensive End	Junior (RS)	Tulane
Adrian Sullivan	69	Guard	Junior (RS)	Temple
Alec Bloom	86	Tight End	Junior	Connecticut
Alex Barta	18	Punter	Senior	Navy
Alex Pace	99	Defensive Tackle	Senior (RS)	Cincinnati
Alex Starzyk	43	Punter	Junior	Temple
Alex Thomas	27	Defensive Back	Sophomore	Cincinnati
Alohi Gilman	1	Defensive Back	Freshman	Navy
Amos Mason	52	Defensive End	Senior	Navy
Andreas Knappe	53	Tackle	Senior (RS)	Connecticut
Andrew DiRocco	42	Kicker	Junior	Tulane
Andrew Wood	61	Tackle	Sophomore	Navy
Anthony Miller	3	Wide Receiver	Junior (RS)	Memphis
Anthony Rhone	48	Linebacker	Junior	Southern Methodist
Anthony Watkins	29	Defensive Back	Sophomore (RS)	Connecticut
Antonio Kinard	42	Linebacker	Senior	Cincinnati
Arkeel Newsome	22	Running Back	Junior	Connecticut
Arthur Maulet	8	Defensive Back	Senior	Memphis
Artrel Foster	16	Defensive Back	Junior (RS)	Temple
Auggie Sanchez	43	Linebacker	Junior	South Florida
Austin Hall	25	Linebacker	Sophomore	Memphis
Averee Robinson	43	Nose Tackle	Senior	Temple
Avery Williams	2	Defensive Back	Senior (RS)	Temple
Ben Hicks	8	Quarterback	Freshman (RS)	Southern Methodist
Bennett Moehring	16	Kicker	Sophomore	Navy
Blake Belcher	78	Guard	Senior (RS)	Tulsa
Blake Copeland	79	Tackle	Senior	Navy
Bobby Puyol	17	Kicker	Senior (RS)	Connecticut
Braeden West	6	Running Back	Sophomore	Southern Methodist
Brandon Smith	62	Tackle	Junior	East Carolina
Brandon Wilson	26	Defensive Back	Senior	Houston
Braylon Jones	52	Tackle	Freshman	Houston
Brendan McGowan	68	Center	Senior (RS)	Temple
Brendan Vechery	72	Guard	Junior (RS)	Connecticut

Playsin Table

```
[mysql> select* from playsin_t
```

```
[ -> ;
```

Home_Team	Away_Team	School
Central Florida	Cincinnati	Central Florida
Central Florida	Tulane	Central Florida
Connecticut	Central Florida	Central Florida
East Carolina	Central Florida	Central Florida
Houston	Central Florida	Central Florida
Cincinnati	East Carolina	Cincinnati
Connecticut	Cincinnati	Connecticut
East Carolina	Connecticut	East Carolina
Cincinnati	Houston	Houston
Houston	Connecticut	Houston
Houston	Tulsa	Houston
Memphis	Temple	Memphis
Southern Methodist	Memphis	Memphis
Tulane	Memphis	Memphis
Navy	Connecticut	Navy
Navy	Houston	Navy
Navy	Memphis	Navy
Navy	Tulsa	Navy
Tulane	Navy	Navy
Cincinnati	South Florida	South Florida
Memphis	South Florida	South Florida
South Florida	Connecticut	South Florida
South Florida	East Carolina	South Florida
South Florida	Navy	South Florida
East Carolina	Southern Methodist	Southern Methodist
Southern Methodist	Houston	Southern Methodist
Tulane	Southern Methodist	Southern Methodist
Central Florida	Temple	Temple
Connecticut	Temple	Temple
Temple	Cincinnati	Temple
Temple	South Florida	Temple
Temple	Southern Methodist	Temple
Memphis	Tulsa	Tulsa
Tulsa	East Carolina	Tulsa
Tulsa	Southern Methodist	Tulsa
Tulsa	Tulane	Tulsa

School table

```
[mysql> select* from school_t;
```

Name	Num_Students	State
Central Florida	60810	FL
Cincinnati	44338	OH
Connecticut	31624	CT
East Carolina	27511	NC
Houston	42704	TX
Memphis	21480	TN
Navy	4400	MD
South Florida	48353	FL
Southern Methodist	10929	TX
Temple	37788	PA
Tulane	13531	LA
Tulsa	4682	OK

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

Stadium table

```
[mysql> select* from stadium_t;
```

Name	Capacity	Team_Name
Bright House Networks Stadium	45301	Knights
Dowdy-Ficklen Stadium	50000	Pirates
Gerald J Ford Stadium	32000	Mustangs
Liberty Bowl	62380	Tigers
Lincoln Financial Field	68532	Owls
Navy-Marine Corps Memorial Stadium	34000	Midshipmen
Nippert Stadium	40000	Bearcats
Raymond James Stadium	44441	Bulls
Rentschler Field	44000	Huskies
Skelly Stadium	31000	Golden Hurricane
TDECU Stadium	40000	Cougars
Yulman Stadium	30000	Green Wave

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

Team table

```
[mysql> select* from team_t;
```

School_Name	Team_Name	Num_Players	Season_Wins	Season_Losses	Stadium_Name
Central Florida	Knights	24	4	2	Bright House Networks Stadium
Cincinnati	Bearcats	24	1	5	Nippert Stadium
Connecticut	Huskies	24	1	6	Rentschler Field
East Carolina	Pirates	24	1	5	Dowdy-Ficklen Stadium
Houston	Cougars	24	5	2	TDECU Stadium
Memphis	Tigers	24	3	3	Liberty Bowl
Navy	Midshipmen	24	7	2	Navy-Marine Corps Memorial Stadium
South Florida	Bulls	24	5	1	Raymond James Stadium
Southern Methodist	Mustangs	24	3	3	Gerald J Ford Stadium
Temple	Owls	24	5	1	Lincoln Financial Field
Tulane	Green Wave	24	0	6	Yulman Stadium
Tulsa	Golden Hurricane	24	4	2	Skelly Stadium

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

Query Results:

Lists coach names in order of who has the most wins

```
[mysql> Select Name, Career_Wins  
[    -> From coach_t  
[    -> Order By Career_Wins desc;
```

Name	Career_Wins
Tommy Tuberville	159
Willie Fritz	157
Ken Niumatalolo	75
Willie Taggart	38
Matt Rhule	25
Tom Herman	21
Philip Montgomery	13
Bob Diaco	11
Chad Morris	7
Mike Norvell	6
Scott Frost	6
Scottie Montgomery	3

12 rows in set (0.00 sec)

Shows the season standings

```
[mysql> Select School_Name as School, Team_Name as Team, Season_Wins as Wins,
-> Season_Losses as Losses
-> From team_t
-> Order By Wins desc;
```

School	Team	Wins	Losses
Navy	Midshipmen	7	2
Houston	Cougars	5	2
South Florida	Bulls	5	1
Temple	Owls	5	1
Central Florida	Knights	4	2
Tulsa	Golden Hurricane	4	2
Memphis	Tigers	3	3
Southern Methodist	Mustangs	3	3
Cincinnati	Bearcats	1	5
Connecticut	Huskies	1	6
East Carolina	Pirates	1	5
Tulane	Green Wave	0	6

12 rows in set (0.00 sec)

```
mysql>
```

Shows all games played by a certain team, just put specified team in the Where clause

```
[mysql> Select Home_Team, Away_Team, Date_Played as Date
-> From game_t
-> Where Home_Team = "Central Florida" OR Away_Team = "Central Florida"
-> Order by Date;
```

Home_Team	Away_Team	Date
East Carolina	Central Florida	2016-10-01
Central Florida	Temple	2016-10-15
Connecticut	Central Florida	2016-10-22
Houston	Central Florida	2016-10-29
Central Florida	Tulane	2016-11-05
Central Florida	Cincinnati	2016-11-12

6 rows in set (0.00 sec)

Lists games for a certain date, using 2016-10-01 as example

```
mysql> Select*
[ -> From game_t
[ -> Where Date_Played = '2016-10-01';
```

Home_Team	Away_Team	Date_Played	Home_Score	Away_Score	Winner
Cincinnati	South Florida	2016-10-01	20	45	South Florida
East Carolina	Central Florida	2016-10-01	29	47	Central Florida
Temple	Southern Methodist	2016-10-01	45	20	Temple

3 rows in set (0.00 sec)

Shows all games based on who is winner

Just put team name in Where clause

```
mysql> Select *
[ -> From game_t
[ -> Where Winner = "Central Florida";
```

Home_Team	Away_Team	Date_Played	Home_Score	Away_Score	Winner
Central Florida	Cincinnati	2016-11-12	24	3	Central Florida
Central Florida	Tulane	2016-11-05	37	6	Central Florida
Connecticut	Central Florida	2016-10-22	16	24	Central Florida
East Carolina	Central Florida	2016-10-01	29	47	Central Florida

4 rows in set (0.00 sec)

Totals the amount of points scored in each game and lists the games by most points scored in a game

```
mysql> Select*, Home_Score + Away_Score as Total
-> From game_t
-> Order By Total desc;
```

Home_Team	Away_Team	Date_Played	Home_Score	Away_Score	Winner	Total
South Florida	Navy	2016-10-28	52	45	South Florida	97
Memphis	South Florida	2016-11-12	42	49	South Florida	91
Memphis	Tulsa	2016-10-29	30	59	Tulsa	89
Navy	Houston	2016-10-08	46	40	Navy	86
East Carolina	Southern Methodist	2016-11-12	31	55	Southern Methodist	86
Tulsa	Southern Methodist	2016-10-07	43	40	Tulsa	83
Navy	Tulsa	2016-11-12	42	40	Navy	82
Tulsa	Tulane	2016-10-22	50	27	Tulsa	77
East Carolina	Central Florida	2016-10-01	29	47	Central Florida	76
Temple	South Florida	2016-10-21	46	30	Temple	76
Navy	Memphis	2016-10-22	42	28	Navy	70
South Florida	Connecticut	2016-10-15	42	27	South Florida	69
Tulsa	East Carolina	2016-11-05	45	24	Tulsa	69
Houston	Tulsa	2016-10-15	38	31	Houston	69
Tulane	Southern Methodist	2016-10-29	31	35	Southern Methodist	66
Temple	Southern Methodist	2016-10-01	45	20	Temple	65
Cincinnati	South Florida	2016-10-01	20	45	South Florida	65
Memphis	Temple	2016-10-06	34	27	Memphis	61
South Florida	East Carolina	2016-10-08	38	22	South Florida	60
Southern Methodist	Memphis	2016-11-05	7	51	Memphis	58
Cincinnati	Houston	2016-09-15	16	40	Houston	56
Houston	Connecticut	2016-09-29	42	14	Houston	56
Houston	Central Florida	2016-10-29	31	24	Houston	55
Southern Methodist	Houston	2016-10-22	38	16	Southern Methodist	54
Navy	Connecticut	2016-09-10	28	24	Navy	52
Central Florida	Temple	2016-10-15	25	26	Temple	51
Cincinnati	East Carolina	2016-10-22	31	19	Cincinnati	50
Temple	Cincinnati	2016-10-29	34	13	Temple	47
East Carolina	Connecticut	2016-10-29	41	3	East Carolina	44
Central Florida	Tulane	2016-11-05	37	6	Central Florida	43
Connecticut	Central Florida	2016-10-22	16	24	Central Florida	40
Tulane	Memphis	2016-10-14	14	24	Memphis	38
Tulane	Navy	2016-09-17	14	21	Navy	35
Connecticut	Cincinnati	2016-10-08	20	9	Connecticut	29
Central Florida	Cincinnati	2016-11-12	24	3	Central Florida	27
Connecticut	Temple	2016-11-04	0	21	Temple	21

36 rows in set (0.01 sec)

Shows all players from a certain school, put school name in the Where clause

```
mysql> select *
-> From player_t
-> Where School_Name = "Central Florida";
```

Name	Player_Number	Position	Year_In_School	School_Name
Aaron Evans	66	Tackle	Junior (RS)	Central Florida
Caleb Houston	36	Punter	Senior (RS)	Central Florida
Cam Stewart	11	Wide Receiver	Sophomore	Central Florida
D.J. Killings	24	Defensive Back	Senior	Central Florida
Demeitre Brim	41	Linebacker	Senior (RS)	Central Florida
Donald De La Haye	19	Kicker	Sophomore	Central Florida
Dontravious Wilson	7	Running Back	Senior	Central Florida
Drico Johnson	21	Defensive Back	Senior (RS)	Central Florida
Errol Clarke	51	Linebacker	Senior (RS)	Central Florida
Jamiyus Pittman	5	Nose Tackle	Junior	Central Florida
Jason Rae	73	Center	Senior	Central Florida
Jordan Franks	15	Tight End	Junior	Central Florida
Jordan Johnson	72	Guard	Guard	Central Florida
Mark Rucker	16	Linebacker	Senior (RS)	Central Florida
McKenzie Milton	10	Quarterback	Freshman	Central Florida
Shaquem Griffin	18	Linebacker	Junior (RS)	Central Florida
Shaquill Griffin	10	Defensive Back	Senior	Central Florida
T.J. Mutcherson	22	Defensive Back	Graduate	Central Florida
Tate Hernly	75	Guard	Junior (RS)	Central Florida
Taylor Oldham	20	Wide Receiver	Senior (RS)	Central Florida
Tony Guerad	93	Defensive End	Junior (RS)	Central Florida
Tre'Quan Smith	89	Wide Receiver	Sophomore (RS)	Central Florida
Trysten Hill	95	Defensive End	Freshman	Central Florida
Wyatt Miller	78	Tackle	Sophomore (RS)	Central Florida

24 rows in set (0.00 sec)

Lists all players in alphabetical order who are in their Senior year

```
[mysql> Select Name, Year_In_School
[    -> From player_t
[    -> Where Year_In_School = "Senior"
[    -> Order By Name;
```

Name	Year_In_School
Adam West	Senior
Alex Barta	Senior
Amos Mason	Senior
Antonio Kinard	Senior
Arthur Maulet	Senior
Averee Robinson	Senior
Blake Copeland	Senior
Brandon Wilson	Senior
Cameron Malveaux	Senior
Cameron White	Senior
Chance Allen	Senior
Chauncey Briggs	Senior
Chris Taylor	Senior
D.J. Killings	Senior
Daiquan Thomasson	Senior
Dalton Parks	Senior
Daniel McCarty	Senior
Darrion Millines	Senior

Lists coaches in order of the most wins, but only displays coaches with a winning record (meaning they have more wins than losses)

```
[mysql> Select *
[    -> From coach_t
[    -> Where Career_Wins > Career_Losses
[    -> Order By Career_Wins desc;
```

Name	School_Name	Career_Wins	Career_Losses
Tommy Tuberville	Cincinnati	159	97
Willie Fritz	Tulane	157	76
Ken Niumatalolo	Navy	75	39
Matt Rhule	Temple	25	23
Tom Herman	Houston	21	3
Philip Montgomery	Tulsa	13	10
Mike Norvell	Memphis	6	4
Scott Frost	Central Florida	6	4

8 rows in set (0.00 sec)

Feedback:

From the start of this project to the end, we were constantly modifying and re-thinking logical ways to structure our database. It seemed very simplistic at first, but we soon realized things weren't going to be that easy. Modeling a real world scenario takes days, if not weeks of research even if it is on a topic that we [thought] knew well. Coming up with business rules about our universe of discourse allowed us to eliminate extreme scenarios from coming up in which we could simply not account for or would have access to add in our database. The actual implementation became problematic because we would have run into random issue after random issue when working out the issues. This led to us dropping and recreating the tables dozens of times before we finally got it all working.