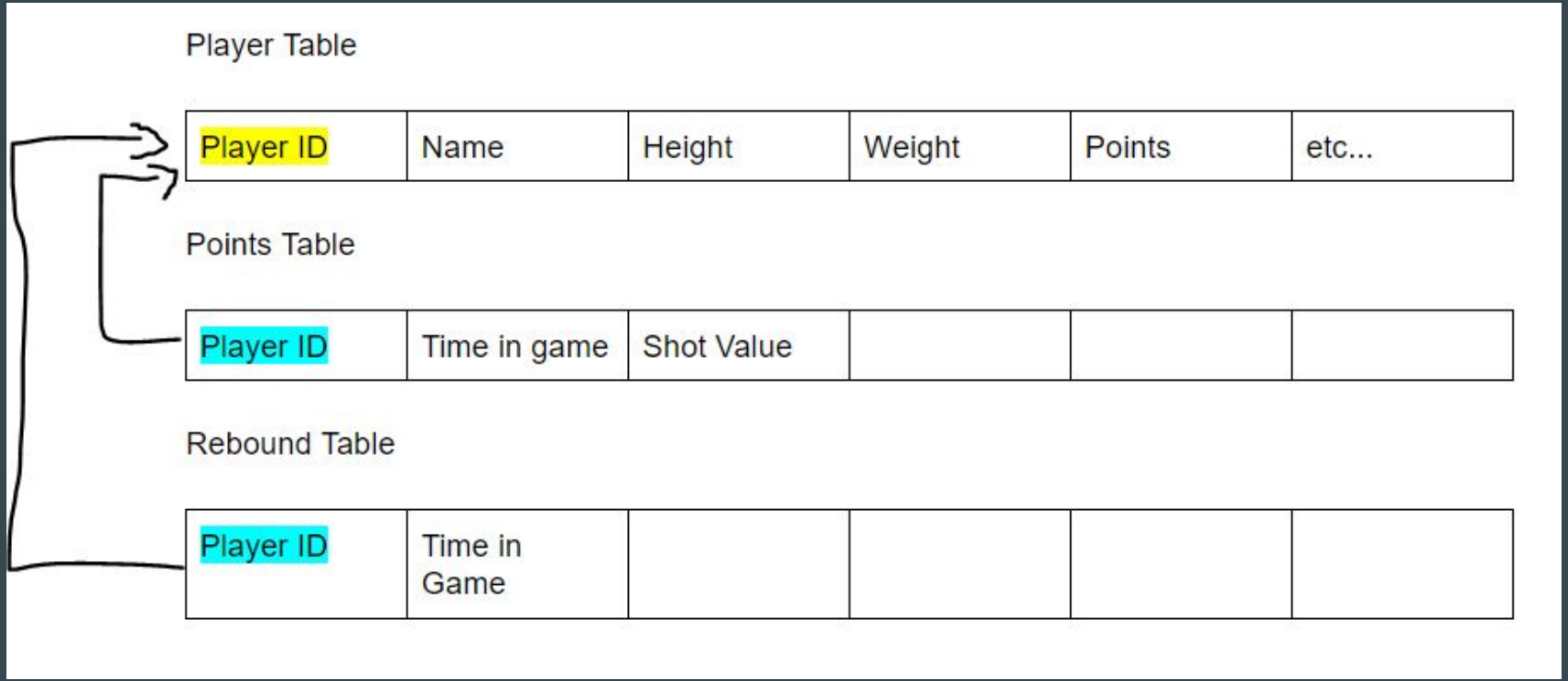
NBA Database

By: Anthony Critelli and Ryan Crenny

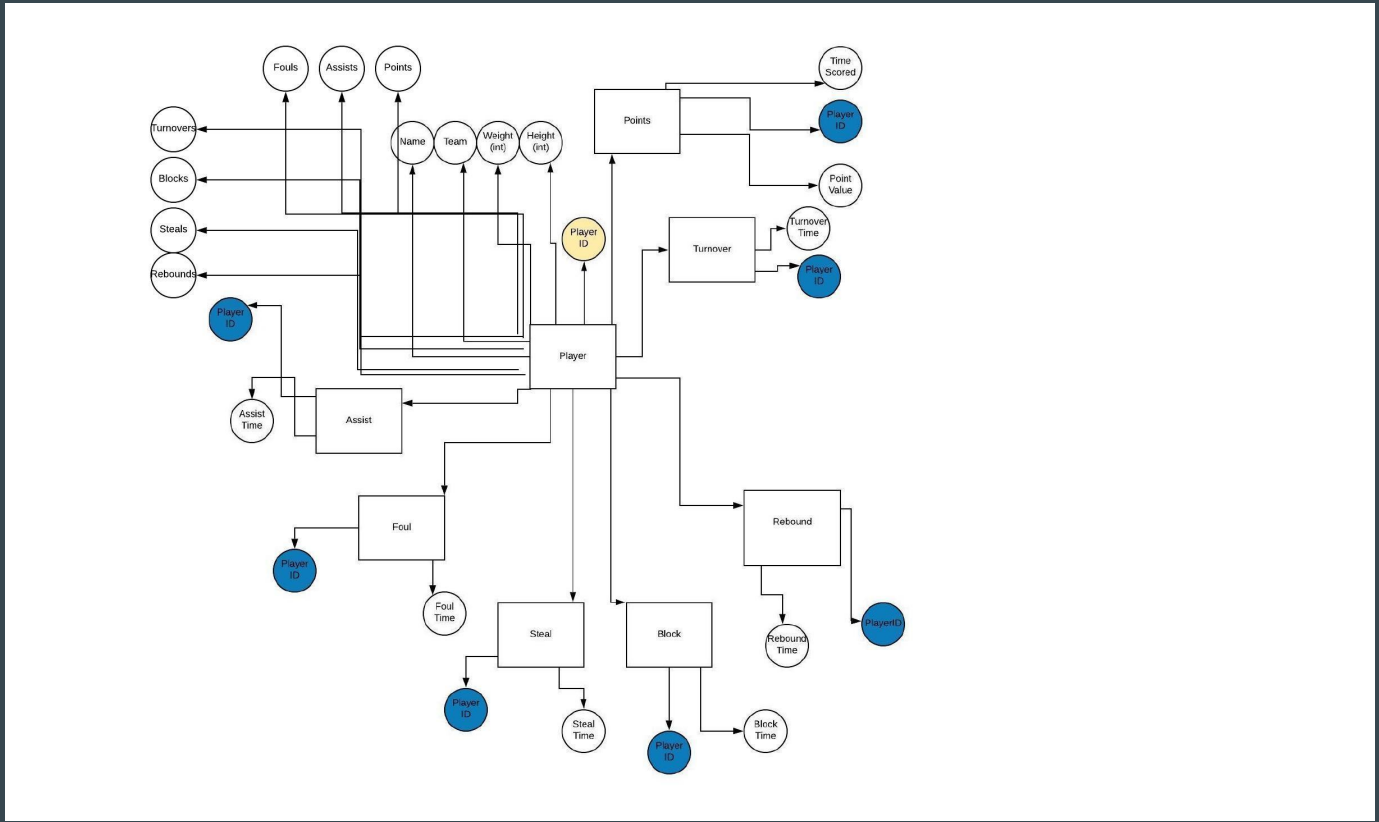
Database Schema

- Our database is set up to hold and retrieve NBA player's stats for a single NBA game.
- Idea is that stat keeper would continuously update database throughout game recording the minute at which various statistics occurred
- Using this information one is able to see individual player player stats between certain periods in the game and therefore determine what point in the game a certain player thrives

Schema Representation



ER Diagram


Fouls
Assists
Points
Turnovers
Blocks
Steals
Rebounds
Name
Team
Weight (int)
Height (int)
Player ID
Player
Time Scored
Points
Player ID
Point Value
Turnover
Turnover Time
Player ID
Player ID
Assist
Assist Time
Foul
Player ID
Foul Time
Steal
Player ID
Steal Time
Block
Player ID
Block Time
Rebound
Rebound Time
PlayerID

Schema Code

```
CREATE TABLE PLAYER(
    PlayerID            Char(8)         NOT NULL,
    PlayerName          Char(50)        NOT NULL,
    PlayerHeight        Int             NOT NULL,
    PlayerWeight        Int             NOT NULL,
    Points              Int             NULL,
    Assist              Int             NULL,
    Rebound             Int             NULL,
    Foul                Int             NULL,
    Turnover            Int             NULL,
    Steal               Int             NULL,
    Block               Int             NULL,
    CONSTRAINT          PLAYER_PK       PRIMARY KEY(PlayerID)
    );

CREATE TABLE POINTS(
    PlayerID            Char(8)         NOT NULL,
    Made_Basket_Value   Int             NOT NULL,
    Time_Point_Scored   Int             NOT NULL,
    CONSTRAINT          Points_FK       FOREIGN KEY(PlayerID)
                            REFERENCES PLAYER(PlayerID)
    );
```

Data Entry Example

```
/*Points Table Values*/
INSERT INTO POINTS VALUES
('00000000', 2, 4);
INSERT INTO POINTS VALUES
('00000000', 2, 5);
INSERT INTO POINTS VALUES
('00000000', 3, 22);
INSERT INTO POINTS VALUES
('00000000', 3, 25);
INSERT INTO POINTS VALUES
('00000001', 2, 31);
INSERT INTO POINTS VALUES
('00000001', 1, 45);
INSERT INTO POINTS VALUES
('00000001', 1, 45);
INSERT INTO POINTS VALUES
('00000001', 2, 46);
INSERT INTO POINTS VALUES
('00000002', 1, 25);
INSERT INTO POINTS VALUES
('00000002', 2, 43);
INSERT INTO POINTS VALUES
('00000003', 2, 7);
INSERT INTO POINTS VALUES
('00000003', 3, 19);
INSERT INTO POINTS VALUES
('00000003', 1, 22);
INSERT INTO POINTS VALUES
('00000003', 1, 22);
INSERT INTO POINTS VALUES
('00000003', 1, 22);
INSERT INTO POINTS VALUES
('00000003', 2, 24);
INSERT INTO POINTS VALUES
('00000003', 2, 46);
INSERT INTO POINTS VALUES
('00000004', 2, 4);
INSERT INTO POINTS VALUES
('00000004', 2, 8);
INSERT INTO POINTS VALUES
```

1st Quarter

TIME	TEAM	PLAY	SCORE
12:00		Bismack Biyombo vs. Wendell Carter Jr. (PJ Washington gains possession)	0 - 0
11:39		Miles Bridges misses 4-foot jumper	0 - 0
11:36		Bismack Biyombo offensive rebound	0 - 0
11:36		**Bismack Biyombo makes tip shot**	**2 - 0**
11:26		Tomas Satoransky misses 15-foot pullup jump shot	2 - 0
11:21		Devonte' Graham defensive rebound	2 - 0
11:09		Terry Rozier misses driving floating jump shot	2 - 0
11:06		Bismack Biyombo offensive rebound	2 - 0
11:06		Bismack Biyombo misses tip shot	2 - 0
11:06		Wendell Carter Jr. defensive rebound	2 - 0
10:54		Wendell Carter Jr. misses step back jumpshot	2 - 0
10:52		Terry Rozier defensive rebound	2 - 0
10:38		**Bismack Biyombo makes layup (Devonte' Graham assists)**	**4 - 0**
10:20		Tomas Satoransky misses 26-foot three point jumper	4 - 0
10:16		Terry Rozier defensive rebound	4 - 0

Box Score Data

	PLAYERID	PLAYERNAME	PLAYERHEIGHT	PLAYERWEIGHT	POINTS	ASSIST	REBOUND	FOUL	TURNOVER	STEAL	BLOCK
1	00000000	Lauri Markkanen	84	240	10	2	4	4	1	1	0
2	00000001	Wendell Carter Jr.	81	270	6	2	11	3	1	3	0
3	00000002	Kris Dunn	75	205	3	3	3	3	1	1	1
4	00000003	Zach Lavine	78	200	12	2	8	0	2	1	0
5	00000004	Tomas Satoransky	79	210	7	3	3	3	2	0	0
6	00000005	Thaddeus Young	80	235	10	2	5	0	1	1	0
7	00000006	Daniel Gafford	82	234	4	0	2	2	0	0	6
8	00000007	Ryan Arcidiacono	75	195	12	1	3	2	0	1	0
9	00000008	Coby White	76	195	3	3	3	1	2	2	0
10	00000009	Denzel Valentine	76	220	6	2	3	2	2	1	0
11	00000010	PJ Washington	79	230	13	2	10	2	2	1	3
12	00000011	Miles Bridges	78	225	13	1	9	3	3	1	1
13	00000012	Bismack Biyombo	80	255	12	1	9	2	0	0	1
14	00000013	Terry Rozier	73	190	11	5	8	3	3	2	0
15	00000014	Devonte Graham	73	195	16	7	5	3	7	3	0
16	00000015	Michael Kidd-Gilchrist	78	230	2	1	7	1	2	0	0
17	00000016	Cody Martin	77	205	3	0	2	0	2	1	0
18	00000017	Cody Zeller	84	240	11	2	10	1	0	0	0
19	00000018	Malik Monk	75	200	2	2	0	1	1	1	0

First Half Scoring

```
SELECT *
FROM POINTS
WHERE Time_Point_Scored <= 24
ORDER BY PlayerID;
```

	PLAYERID	MADE_BASKET_VALUE	TIME_POINT_SCORED
1	00000000	2	4
2	00000000	2	5
3	00000000	3	22
4	00000003	1	22
5	00000003	1	22
6	00000003	1	22
7	00000003	2	24
8	00000003	2	7
9	00000003	3	19
10	00000004	2	4
11	00000004	2	8
12	00000004	1	24
13	00000004	1	24
14	00000004	1	24
15	00000005	2	9
16	00000005	2	13
17	00000006	2	20
18	00000007	2	16
19	00000008	3	11
20	00000009	2	15
21	00000009	3	17
22	00000010	2	15
23	00000010	2	7
24	00000010	2	21
25	00000011	1	19
26	00000011	1	2
27	00000011	1	2
28	00000011	1	19
29	00000012	1	6
30	00000012	2	14
31	00000012	1	17
32	00000012	1	6
33	00000012	2	5
34	00000012	2	2
35	00000012	2	1

Devonte Graham's Total Assists

```
SELECT *
FROM ASSIST
WHERE PlayerID = 00000014
ORDER BY Time_Assist;
```

	PLAYERID	TIME_ASSIST
1	00000014	2
2	00000014	5
3	00000014	15
4	00000014	21
5	00000014	26
6	00000014	45
7	00000014	48

PJ Washington's First Half Rebounds

```
SELECT *
FROM REBOUND
WHERE PlayerID = 00000010 AND Time_Rebound <= 24
ORDER BY Time_Rebound;
```

	PLAYERID	TIME_REBOUND
1	00000010	5
2	00000010	13
3	00000010	14
4	00000010	14
5	00000010	20
6	00000010	21
7	00000010	23

3rd Quarter Fouls

```
SELECT *
FROM FOUL
WHERE Time_Foul > 24 and Time_Foul < 37
ORDER BY PlayerID;
```

	PLAYERID	TIME_FOUL
1	00000002	27
2	00000002	27
3	00000004	26
4	00000004	33
5	00000006	33
6	00000009	35
7	00000010	25
8	00000013	30
9	00000013	34
10	00000014	34

Any Questions?