COMS W4111.001-Introduction to Databases

Project Part 2

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NBA Shots and Players Database

**PostgreSQL account name**: jl5521

PGPASSWORD=6447 psql -U jl5521 -h [35.231.103.173](file:///Users/aruba/Desktop/如果能这学期在美国找到工作就太好了(*≧∪≦)/Intro%20to%20DB/Project/part%202/35.231.103.173) -d proj1part2

The updated SQL schema is in the appendix

**Test Query :**

Note: The NBA player and team seasonal data used in this project is from the regular season 2014-2015, the shot data is limited from games in 2015/3/1 to 2015/3/4

**Find players whose salary is 4 times higher than league average**

SELECT p1.player\_name, p1.team\_name, p1.salary from players p1, players p2

group by p1.player\_name, p1.team\_name, p1.salary

having p1.salary > avg(p2.salary) \* 4

order by p1.salary DESC;

图片包含 文字, 屏幕截图

描述已自动生成

**Rank the total salary for all teams and select 5 highest ones**

SELECT sum(salary) as total\_salary, team\_name from players

group by team\_name

order by sum(salary) DESC

limit 5;

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描述已自动生成

**Find who are the top 10 players making the highest number of shots (for our data imported, the shot time range is limited to 2015/3/1 to 2015/3/4, not entire season)**

select player\_name, count(shot\_id) as num\_of\_shot from shot\_to\_player, players

where player\_id = shooter\_id

group by player\_id

order by count(shot\_id) DESC

limit 10;

图片包含 屏幕截图

描述已自动生成

Appendix: SQL Schema

/\* create table for entity news \*/

create table News(

news\_id varchar(16),

news\_title text,

new\_content text,

news\_date date,

primary key (news\_id)

);

/\* create table for many-to-many relationship of news related to players \*/

create table News\_to\_Players(

news\_id varchar(16),

player\_id varchar(16),

primary key (news\_id,player\_id),

foreign key (player\_id) references Players,

foreign key (news\_id) references News

);

/\* create table for entity players \*/

create table Players(

player\_id varchar(16),

player\_name varchar(40),

team\_name varchar(40) not null,/\* every player should has a team \*/

player\_position varchar(8),

height numeric(8,2),

weight numeric(8,2),

block numeric(8,2),

rebounds numeric(8,2),

assists numeric(8,2),

steals numeric(8,2),

twopoint\_shot\_percentage numeric(8,2),

threepoint\_shot\_percentage numeric(8,2),

start\_year numeric(4,0) check (start\_year>1950 and start\_year<2100),

salary numeric(16,2),

primary key (player\_id)

);

create table Players\_to\_Team(

player\_id varchar(16),

team\_name varchar(40),

primary key player\_id,

foreign key (team\_name) references Teams,

foreign key (player\_id) references Players

);

/\* create table for entity players \*/

create table Teams

(

team\_name varchar(40),

found\_year numeric(4,0) check (found\_year>1900 and found\_year<2100),

city varchar(40),

state varchar(40),

primary key (team\_name)

);

/\* create table for entity coaches \*/

create table Coaches(

coach\_id varchar(16),

coach\_name varchar(40),

start\_year numeric(4,0) check (start\_year>1900 and start\_year<2100),

number\_of\_champs int check (number\_of\_champs>=0),

primary key (coach\_id)

);

create table Coach\_to\_Team(

team\_name varchar(40),

coach\_id varchar(16) not null,

primary key (team\_name),

foreign key (coach\_id) references Coaches, unique(coach\_id),

foreign key (team\_name) references Teams

);

/\* create table for entity stadiums \*/

create table Stadiums

(

stadium\_name varchar(40),

size numeric(8,0),

stadium\_location varchar(40) not null,

primary key (stadium\_name)

);

create table Stadium\_to\_team(

stadium\_name varchar(40) not null,

team\_name varchar(40),

primary key (team\_name),

foreign key (stadium\_name) references Stadiums,

foreign key (team\_name) references Teams

);

/\* create table for entity games \*/

create table Games

(

game\_id varchar(16),

game\_date date,

stadium\_name varchar(20),

final\_margin int,

winner char(4) check (winner in ('home','away')),

primary key (game\_id)

);

create table Game\_to\_Team(

game\_id varchar(16),

home\_team\_name varchar(40) not null,

away\_team\_name varchar(40) not null,

primary key (game\_id),

foreign key (game\_id) references Games,

foreign key (home\_team\_name) references Teams,

foreign key (away\_team\_name) references Teams

);

create table Shots

(

shot\_id varchar(16),

shot\_distance numeric(8,2),

time\_clock numeric(8,2) check (time\_clock>=0 and time\_clock<=24) , /

shot\_result boolean,

quarter numeric(1,0) check (quarter in (1,2,3,4,6,7,8,9)),

primary key (shot\_id)

);

create table Shot\_to\_Player(

shot\_id varchar(16),

shooter\_id varchar(16) not null,

defender\_id varchar(16) not null,

defender\_distance numeric(8,2),

primary key (shot\_id),

foreign key (shot\_id) references Shots,

foreign key (shooter\_id) references Players,

foreign key (defender\_id) references Players

);

create table Shot\_to\_Game(

shot\_id varchar(16),

game\_id varchar(16) not null,

primary key (shot\_id),

foreign key (game\_id) references Games,

foreign key (shot\_id) references Shots

);