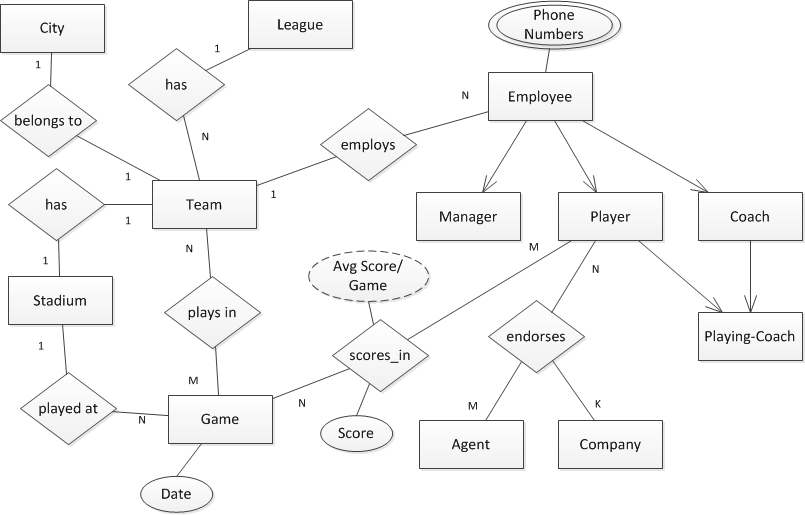
## Modified EER Diagram



## Modified database schema

drop table leagues cascade constraints;

create table leagues(

lid number primary key,

name varchar2(50) not null unique,

start\_date date

);

drop table stadiums cascade constraints;

create table stadiums(

sid number primary key,

name varchar2(50) not null,

built\_date date,

capacity number

);

drop table cities cascade constraints;

create table cities(

cid number primary key,

name varchar2(50) not null,

state varchar2(2) not null

);

drop table teams cascade constraints;

create table teams(

tid number primary key,

name varchar2(50) not null unique,

sid number,

cid number,

lid number,

foreign key(sid) references stadiums(sid),

foreign key(cid) references cities(cid),

foreign key(lid) references leagues(lid)

);

drop table plays\_in cascade constraints;

create table plays\_in (

gid number,

tid number,

constraint plays\_in\_id primary key (gid, tid),

foreign key (gid) references games(gid),

foreign key (tid) references teams(tid)

);

drop table games cascade constraints;

create table games(

gid number primary key,

game\_date date,

sid number,

foreign key(sid) references stadiums(sid)

);

drop table employees cascade constraints;

create table employees(

eid number primary key,

cid number not null,

name varchar2(50) not null,

birth\_date date,

age number,

addr\_street\_no varchar2(50),

tid number not null,

start\_date date,

annual\_salary number,

country\_code number,

area\_code number,

phone\_number number,

foreign key(cid) references cities(cid),

foreign key(tid) references teams(tid)

);

drop table players cascade constraints;

create table players(

eid number primary key,

position varchar2(20),

foreign key(eid) references employees(eid)

);

drop table scores\_in cascade constraints;

create table scores\_in (

pid number,

gid number,

score number,

constraint scores\_in\_key primary key (pid, gid),

foreign key(pid) references players(eid),

foreign key(gid) references games(gid)

);

drop table coaches cascade constraints;

create table coaches(

eid number primary key,

qualification varchar2(20),

type varchar2(20),

foreign key(eid) references employees(eid)

);

drop table managers cascade constraints;

create table managers(

eid number primary key,

type varchar2(20),

foreign key(eid) references employees(eid)

);

drop table playing\_coaches cascade constraints;

create table playing\_coaches(

eid number primary key,

start\_date date,

foreign key(eid) references players(eid),

foreign key(eid) references coaches(eid)

);

drop table agents cascade constraints;

create table agents(

aid number primary key,

name varchar2(50) not null,

addr\_street\_no varchar2(50)

);

drop table companies cascade constraints;

create table companies(

coid number primary key,

name varchar2(50) not null,

addr\_street\_no varchar2(50)

);

drop table endorses cascade constraints;

create table endorses(

eid number,

aid number,

coid number,

Constraint endorsement\_id Primary key (eid, aid, coid),

start\_date date,

end\_date date,

amount number,

foreign key(eid) references players(eid),

foreign key(aid) references agents(aid),

foreign key(coid) references companies(coid)

);

## Queries

a) Names of those players who live in the same city as their teams:

SELECT players.name

FROM players, teams, employees

WHERE employees.eid=players.eid AND

employees.tid=teams.tid AND

teams.cid=employees.cid;

b) Names of those teams who have not scored any in a game:

SELECT teams.name

FROM teams, employees, players, scores\_in

WHERE employees.eid=players.eid AND

employees.tid=teams.tid AND

scores\_in.pid=players.eid

GROUP BY teams.name

HAVING SUM(scores\_in.score)=0;

c) Names of those players in NBA (league) who have endorsements of amounts >= $1,000,000.00. Include the players’ average scores, team names and the endorsing companies:

SELECT employees.name, AVG(scores\_in.score), teams.name, companies.name

FROM employees, players, endorses, companies, scores\_in, teams

WHERE employees.eid=players.eid AND

teams.tid=employees.tid AND

scores\_in.pid=players.eid AND

endorses.eid=players.eid AND

endorses.coid=companies.coid AND

endorses.amount>=1000000

GROUP BY employees.name, teams.name, companies.name;

d) Three highest scoring players in each game, the teams played in the game, dates played and the stadium they played at:

SELECT employees.name, teams.name, games.game\_date, stadiums.name

FROM employees, scores\_in, teams, games, stadiums

WHERE employees.eid=scores\_in.pid AND

teams.tid=employees.tid AND

games.gid=scores\_in.gid AND

EXISTS (

SELECT \*

FROM scores\_in si1

WHERE si1.gid=scores\_in.gid AND

ROWNUM<=1

ORDER BY si1.score DESC

);

e) Each player and his team in NBA, comparing his average score of year 2006 with average score of 2007:

CREATE OR REPLACE PROCEDURE getAverageScores(

i\_pid IN number,

o\_2006avg number,

o\_2007avg number )

IS

BEGIN

SELECT AVG( scores\_in.score )

INTO o\_2006avg

FROM scores\_in, games

WHERE scores\_in.pid=i\_pid AND

scores\_in.gid=games.gid AND

games.game\_date BETWEEN TO\_DATE( '2006-JAN-01', 'YYYY-MON-DD' ) AND TO\_DATE( '2006-DEC-31', 'YYYY-MON-DD' )

GROUP BY employees.name, teams.name;

SELECT AVG( scores\_in.score )

INTO o\_2007avg

FROM scores\_in, games

WHERE scores\_in.pid=i\_pid AND

scores\_in.gid=games.gid AND

games.game\_date BETWEEN TO\_DATE( '2007-JAN-01', 'YYYY-MON-DD' ) AND TO\_DATE( '2007-DEC-31', 'YYYY-MON-DD' )

GROUP BY employees.name, teams.name;

END;

DECLARE

temp\_2006avg number;

temp\_2007avg number;

BEGIN

FOR cursor IN (

SELECT players.name pname, teams.name tname, players.eid pid

FROM players, teams, employees

WHERE players.eid=employees.eid AND

employees.tid=teams.tid )

LOOP

getAvgScores( cursor.pid, temp\_2006avg, temp\_2007avg );

DBMS\_OUTPUT.PUT\_LINE('Player ' || cursor.pname || ' Team: ' || cursor.tname ||

' 2006: ' || temp\_2006avg || ' 2007 ' || temp\_2007avg );

END LOOP;

END;