Group 35 Part 2 Final Submission

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Name	Uni
Nikhilesh Belulkar	**nb2953**
Jordan Ordonez Chaguay	jio2108

bolded uni to identify database for our team

Grader please note the justification of important constraints for each of our tables:

Team:

A) Manager name is unique to each team (can't have managers serving two teams)
B) Team_id is the identifying primary key for team

Player:

A) Player_ID is a the identifying primary key for player
B) Team_ID is a foreign key constraint for this many to one relationship between player and team. It is a delete cascade because if a team is deleted so should all its children.

Match:

A) match_ID is the identifying primary key of match
B) Each time for a match is unique as their fifa rule stating no matches can occur at the same time

TVBroadcasters:

A) broadcaster_ID is the identifying primary key of TVBroadcasters
B) Only one broadcaster is assigned to each region therefore region must be unique

sponsorship_deal:

A) Sponsor_ID is a foreign key & references a sponsor and is on update & delete cascade because if a sponsor_ID changes then so too does sponsorship_deal
B) team_ID is a foreign key & references a team and is on update & delete cascade because if a team_ID changes then so too does sponsorship_deal

officiates:

A) Referee_ID is a foreign key & references a referee and should be on delete cascade because officiates must change when a referee changes
B) match_ID is a foreign key & references a match and should be on delete cascade because officiates must change when a referee changes

broadcasts:

A) Broadcaster_ID is a foregin key & references a tvbroadcaster it is on delete cascade as the relationship should change if the broadcaster is deleted
B) Similar logic follows for match_ID

Playsin:

A) team_ID and match_ID are both foreign keys, they reference teams and match respectively. match_ID should be on delete cascade because whenever the team_ID changes then so does the match.

has:

A) similar logic for all the on delete cascades follows for above

Three interesting queries:

Query one:

Find the average weight and the average height of all players in the database grouped according to their position.

SQL query:

```
select position,avg(height_cm) as avg_height, avg(weight_lbs) as avg_weight
from player
group by(position);
```

```
position |      avg_height      |      avg_weight
----------+----------------------+----------------------
 LW       | 175.0000000000000000 | 150.0000000000000000
 ST       | 179.8000000000000000 | 165.2000000000000000
 CB       | 184.0000000000000000 | 181.0000000000000000
 GK       | 199.0000000000000000 | 212.0000000000000000
 CM       | 181.5000000000000000 | 165.5000000000000000
```

Query two:

provide game information about matches in which france played

Query:

```
select stadium, time, bracket, round
from match m, playsin p, teams t
where m.match_id=p.match_id and p.team_id=t.team_id and t.country = 'France';
```

```
  stadium          |        time         | bracket |    round
--------------------------+---------------------+---------+-------------
 Kazan Arena              | 2018-06-20 17:00:00 |         | Round of 16
 Saint Petersburg Stadium | 2018-07-10 21:00:00 |         | Semi-finals
 Kazan Arena              | 2018-05-16 13:00:00 | C       |
 Luzhinki Stadium         | 2018-06-15 21:00:00 |         | Final

(4 rows)
```

OR

```
select stadium, time, bracket, round
from match natural join playsin natural join teams
where country = 'France';
```

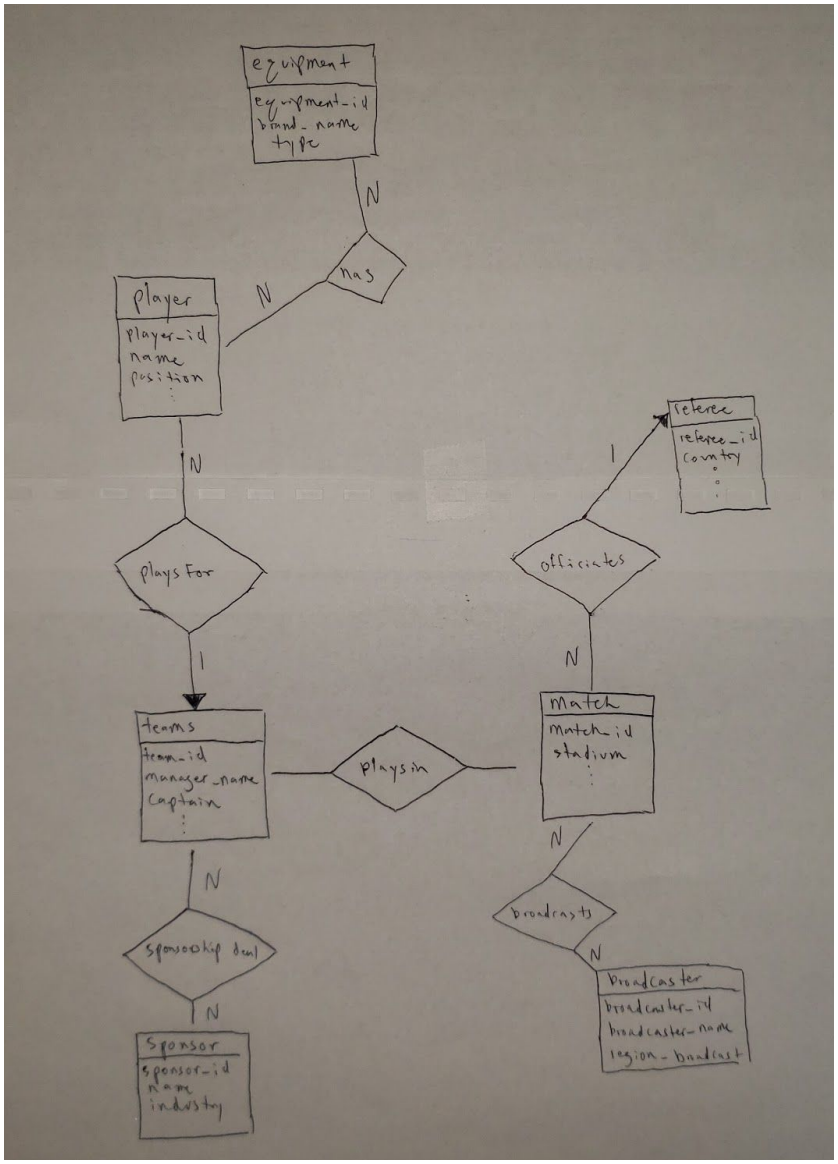
```
         stadium          |        time         | bracket |    round
--------------------------+---------------------+---------+-------------
 Kazan Arena              | 2018-06-20 17:00:00 |         | Round of 16
 Saint Petersburg Stadium | 2018-07-10 21:00:00 |         | Semi-finals
 Kazan Arena              | 2018-05-16 k13:00:00 | C       |
 Luzhinki Stadium         | 2018-06-15 21:00:00 |         | Final
(4 rows)
```

Query three:

“Find all company information about the sponsors of the Australian soccer team”

```
 name   |     industry      | deal_value
---------+-------------------+------------
 Telstra | Telecommunications |    1000000
 Foxtel  | Broadcasting       |    1000000
 qantas  | Aviation           |    1000000
```

Nike | Sports | 10000000



Revised ER diagram for database

Notes for the grader
We made edits to our database design in regards to adding the following entities/relationships:

- match (entity)
- equipment (entity)
- has (relationship)

These changes will allow us to model the 2018 World Cup in a more in depth fashion than what was originally planned (only round of 16s where teams face off each other once).

Revised SQL Create statements:

SQL create table statements:

```
create table teams(
        team_id             varchar(10) not null,
        manager_name        varchar(50) not null,
        captain             varchar(50) not null,
        FIFA_ranking        numeric(3,0) not null,
        Conference          varchar(20) not null,
        country             varchar(20)
        primary key(team_id),
        unique (manager_name),
        );

create table player(
        player_ID           varchar(10) not null,
        name                varchar(50) not null,
        position            varchar(3),
        height_cm           numeric(3,0),
        weight_lbs          numeric(3,0),
        preferred_foot      char(1),
        caps                numeric(3,0),
        team_id             varchar(10),
        primary key(player_ID),
        foreign key (team_ID) references teams on delete cascade
        );



create table Match(
```

```
        match_ID            varchar(10) not null,
        stadium             varchar(20) not null,
        time                timestamp not null,
        bracket             varchar(1),
        round               varchar(20),
        unique(time),
        primary key(match_ID)
        );


create table tvbroadcasters(
        broadcaster_ID      varchar(10) not null,
        broadcaster_name    varchar(20) not null,
        region_broadcast    varchar(20) not null,
        primary key(broadcaster_ID),
        unique(region_broadcast)
);

create table referee(
        referee_ID      varchar(10) not null,
        country         varchar(30) not null,
        name            varchar(20) not null,
        primary key (referee_ID)
);

create table sponsor(
        sponsor_ID      varchar(10) not null,
        name            varchar(20) not null,
        industry        varchar(10) not null,
        primary key(sponsor_ID)
        );

create table equipment(
        equipment_ID    varchar(10) not null,
        brand_name      varchar(10) not null,
        itemtype        varchar(10) not null,
        primary key(equipment_ID)

);



~~~Jordan~~~


create table sponsorship_deal(
```

```
        sponsor_ID          varchar(10) not null,
        team_ID             varchar(10) not null,
        deal_value          int not null,
        primary key(team_ID, sponsor_ID),
        foreign key(sponsor_ID) references sponsor
                            on delete cascade
                            on update cascade,
        foreign key(team_ID) references teams
                            on delete cascade
                            on update cascade
        );


done
create table officiates(
        match_ID                    varchar(10) not null,
        referee_ID                  varchar(10) not null,
        ref_pay                             int not null,
        primary key(referee_ID,match_ID),
        foreign key(referee_ID) references referee
                                    on delete cascade
                                    on update cascade,
        foreign key(match_ID) references match
                                    on delete cascade
                                    on update cascade,
        check(ref_pay>=5000)
);









create table broadcasts(
        broadcaster_ID      varchar(10) not null,
        match_ID            varchar(10) not null,
        broadcasting_fee            int not null,
        primary key (broadcaster_ID,match_ID),
        foreign key (broadcaster_ID) references tvbroadcasters
                                    on delete cascade
```

```
                                    on update cascade,
        foreign key (match_ID) references match
                                    on delete cascade
                                    on update cascade,
        check(broadcasting_fee>=100000)
        );

create table playsin(
        match_ID            varchar(10) not null,
        team_ID             varchar(10) not null,
        starting_side       varchar(10) not null,
        primary key(match_ID, team_ID),
        foreign key(team_ID) references teams
                            on delete cascade
                            on update cascade,
        foreign key(match_ID) references match
                            on delete cascade
                            on update cascade
);

create table has(
        player_ID           varchar(10) not null,
        equipment_ID        varchar(10) not null,
        primary key(player_ID, eqipment_ID),
        foreign key(player_ID) references player
                            on delete cascade
                            on update cascade


);
```