

CS3400 Database Systems

Quiz 3 - 11th Dec 2006

For the questions given below, write the corresponding SQL statements. The primary keys for each of the relations are underlined.

Player (int Pid, varchar(255) First Name, varchar(255) Last Name, int Age, varchar(255) Country)

Match (int Mid, date Date, varchar(255) Venue_Stadium, varchar(255) Venue_Country)

Match_Team (int Mid, int CaptainPid, int Wicket-KeeperPid)

Match_Batting (int Mid, int Pid, int Runs_Scored, int Balls_Faced)

Match_Bowling (int Mid, int Pid, int Overs_Bowled, int Runs_Given, int Wickets_Taken)

The foreign key, primary key relationships:

Match_Team(Mid) references Match(Mid)

Match_Batting(Mid) references Match(Mid)

Match_Bowling(Mid) references Match(Mid)

Match_Team(CaptainPid) references Player(Pid)

Match_Team(Wicket-KeeperPid) references Player(Pid)

Match_Batting(Pid) references Player(Pid)

Match_Bowling(Pid) references Player(Pid)

1. Find all the players for whom the sum of runs they scored in batting (Runs_Scored) in all the matches they played that are held in 'India' is less than the sum of runs they gave in bowling (Runs_Given) in all the matches they played that are held in 'India'. Display the first name, last name of the player, the sum of runs scored in batting across all matches they played and the sum of runs they gave in bowling across all matches they played.

```
create table temp1 (int Pid, int sum_runs);
select Pid, sum(Runs_Scored) into temp1 from Match_Batting, Match
where Match_Batting.Mid = Match.Mid and Venue_Country = 'India'
group by Pid;
create table temp2 (int Pid, int sum_runs);
select Pid, sum(Runs_Given) into temp2 from Match_Bowling, Match
where Match_Bowling.Mid = Match.Mid and Venue_Country = 'India'
group by Pid;
select First Name, Last Name, temp1.sum_runs, temp2.sum_runs
from Player, temp1, temp2 where Player.Pid = temp1.Pid
and Player.Pid = temp2.Pid and temp1.sum_runs < temp2.sum_runs;
```

2. Find all the players whose age is more than 30 and
 - a. who did not make a century (Runs_Scored is ≥ 100) in any match that is held in 'India' and
 - b. who took more than 5 wickets in at least one match that is held in 'South Africa' and
 - c. who faced more than 10,000 balls in batting in all the matches he has batted.
 Display the first name, last name and the age of the player.

```

select First_Name, Last_Name, Age
from Player
where Age > 30
      and Pid NOT EXISTS IN (select Match_Batting.Pid
                           from Match, Match_Batting
                           where Match.Mid = Match_Batting.Mid
                           and Runs_Scored  $\geq 100$ )
      and Pid EXISTS IN(select Match_Bowling.Pid
                       from Match, Match_Bowling
                       where Match.Mid = Match_Bowling.Mid
                       and Wickets_Taken > 5)
      and Pid EXISTS IN (select Pid from Match_Batting.Pid
                       from Match, Match_Batting
                       where Match.Mid = Match_Batting.Mid
                       group by Match_Batting.Pid
                       having sum(Balls_Faced) > 10,000)

```

3. Find all matches that are held in 'India' in which the wicket keeper of a team whose age is less than 25 has scored more than 100 runs (Runs_Scored) and the captain of the SAME country whose age is more than 30 has bowled more than 5 overs (Overs_Bowled) and gave less than 10 runs (Runs_Given).

```

create table MatchIDs (int Mid);
select Match_Team.Mid into MatchIDs
from Match_Team, Match_Batting, Match_Bowling, Player Wk, Player Cap
where Match_Team.Mid = Match_Batting.Mid
      and Match_Team.Mid = Match_Bowling.Mid
      and Match_Team.Wicket-KeeperPid = Match_Batting.Pid
      and Match_Team.Wicket-KeeperPid = Wk.Pid
      and Wk.Age < 25
      and Runs_Scored > 100
      and Match_Team.CaptainPid = Match_Bowling.Pid
      and Match_Team.CaptainPid = Cap.Pid
      and Cap.Age > 30
      and Overs_Bowled > 5
      and Runs_Given < 10
      and Cap.Country = Wk.Country;

```

```

select Mid from Match
where Venue_Country = 'India'
and Mid IN (select Mid from MatchIDs)

```

4. Find all the captains whose runs scored are more than 50% of the sum of runs scored by all the players of his team (including him) in any match.

```

create table Match_Scores (int Mid, varchar(255) Country, int total);
select Mid, Country, sum(Runs_Scored) into Match_Scores
from Match_Batting, Player
where Match_Batting.Pid = Player.Pid
group by Mid, Country;
select CaptainPid
from Match_Team, Match_Batting, Player Cap, Match_Scores
where Match_Team.Mid = Match_Batting.Mid
and Match_Team.CaptainPid = Match_Batting.Pid
and Match_Team.CaptainPid = Cap.Pid
and Match_Team.Mid = Match_Scores.Mid
and Cap.Country = Match_Scores.Country
and Runs_Scored > 0.5*total;

```

5. For all matches played in 'India' and the sum total runs made in batting by all players in that match is more than 400, increase the runs scored by all players by 10%.

```

create table Match_Scores (int Mid, int total);

select Mid, sum(Runs_Scored) into Match_Scores
from Match_Batting, Match
where Match_Batting.Mid = Match.Mid
and Venue_Country = 'India'
group by Mid
having sum(Runs_Scored) > 400;

update Match_Batting
set Runs_Scored = 1.1*Runs_Scored
where Mid IN (select Mid from Match_Scores);

```

6. Delete all 'Indian' players who did scored less than 1000 runs in batting in all the matches that are held in 'England' and who took less than 20 wickets in all the matches that are held in 'Sri Lanka'.

```

create table LessThan1000 (int Pid);
select Pid into LessThan1000
from Match_Batting, Match, Player
where Match_Batting.Mid = Match.Mid
and Venue_Country = 'England'

```

```

and Match_Batting.Pid = Player.Pid
and Country = 'India'
group by Pid
having sum(Runs_Scored) < 1000;

```

```

create table LessThan20 (int Pid);
select Pid into LessThan20
from Match_Bowling, Match, Player
where Match_Bowling.Mid = Match.Mid
and Venue_Country = 'Srilanka'
and Match_Batting.Pid = Player.Pid
and Country = 'India'
group by Pid
having sum(Wickets_Taken) < 20;

```

```

delete from Player
where Pid IN (select Pid from LessThan1000)
and Pid IN (select Pid from LessThan20)

```

7. Delete all the captains from the Player relation who in any match scored less runs in batting the wicket-keeper of the same country.

```

create table Captains(int Pid);
select CaptainPid
from Match_Team, Match_Batting MB1, Match_Batting MB2
where Match_Team.Mid = MB1.Mid
and Match_Team.Mid = MB2.Mid
and Match_Team.CaptainPid = MB1.Pid
and Match_Team.Wicket-KeeperPid = MB2.Pid
and MB1.Runs_Scored < MB2.Runs_Scored;
delete from Player
where Pid IN (select Pid from Captains);

```

8. Insert a new team into Match_Team with Mid 'M145', captain as that player who took a total of more than 50 wickets in the matches that are held in 'Australia' and the wicket keeper as that player who scored a total of more than 400 runs in the matches that are held in 'West Indies' (assume that only one such player exists)

```

create table Captains(int Pid);
select CaptainPid
from Match_Team, Match_Bowling, Match
where Match_Team.Mid = Match_Bowling.Mid
and Match_Team.CaptainPid = Match_Bowling.Mid
and Match_Team.Mid = Match.Mid
and Venue_Country = 'Australia'
group by CaptainPid

```

```
having sum(Wickets_Taken) > 50;
```

```
create table Wkeepers(int Pid);  
select Wicket-KeeperPid  
from Match_Team, Match_Batting, Match  
where Match_Team.Mid = Match_Batting.Mid  
    and Match_Team.Wicket-KeeperPid = Match_Batting.Mid  
    and Match_Team.Mid = Match.Mid  
    and Venue_Country = 'West Indies'  
group by Wicket-KeeperPid  
having sum(Runs_Scored) > 400;
```

```
insert into Match_Team (Mid, CaptainPid, Wicket-KeeperPid) values  
    ('M145', select Pid from Captains, select Pid from WKeepers);
```