Database Systems & Information Modelling
COMP90002

Assignment 2
Student Name : Sakshi Chandel
Login username : schandel@student.unimelb.edu.au (SCHANDEL)
Student ID: 1124298

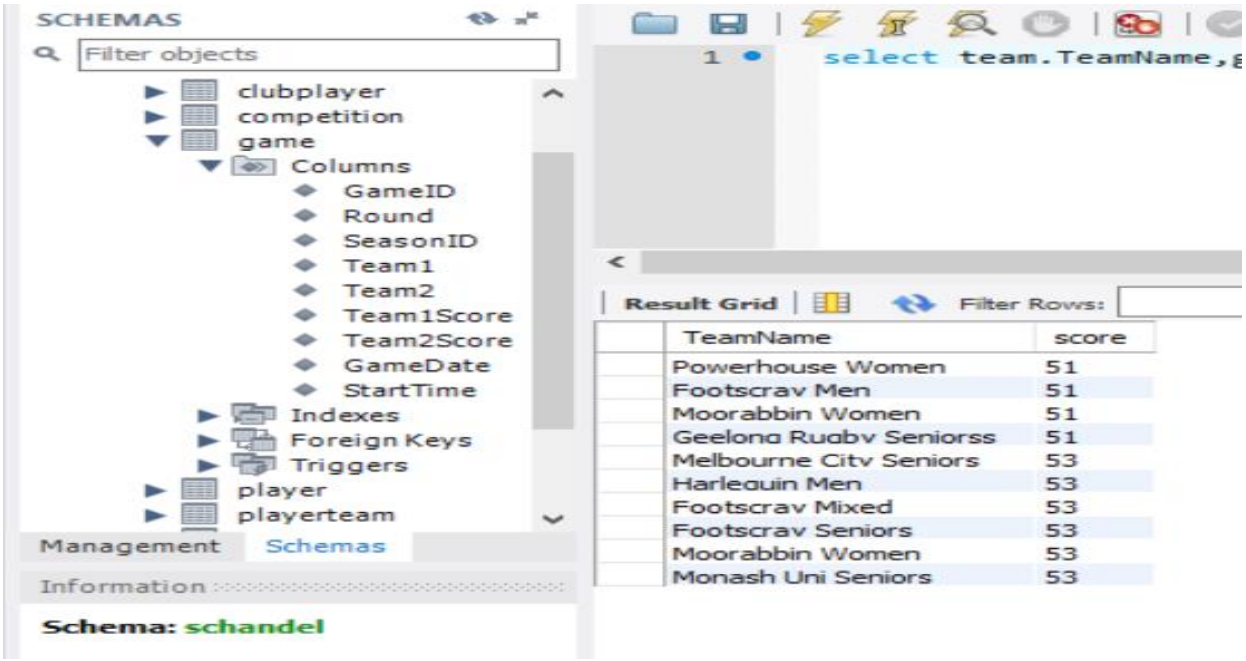
Question 1.1:

Relational Algebra :

$(\pi$ team.TeamName,game.Team1Score→score $(game \bowtie$ (game.Team1Score>50 $\wedge$ game.Team1=team.TeamID) team))
$\cup$
$(\pi$ team.TeamName,game.Team1Score→score $(game \bowtie$ (game.Team1Score>50 $\wedge$ game.Team2=team.TeamID) team))

Query :

```
SELECT team.TeamName,game.Team1Score as score
FROM game INNER JOIN team
ON team.TeamID=game.Team1 and game.Team1Score>50
UNION
SELECT team.TeamName,game.Team2Score as score
FROM game INNER JOIN team
ON team.TeamID=game.Team2 and game.Team2Score>50;
```



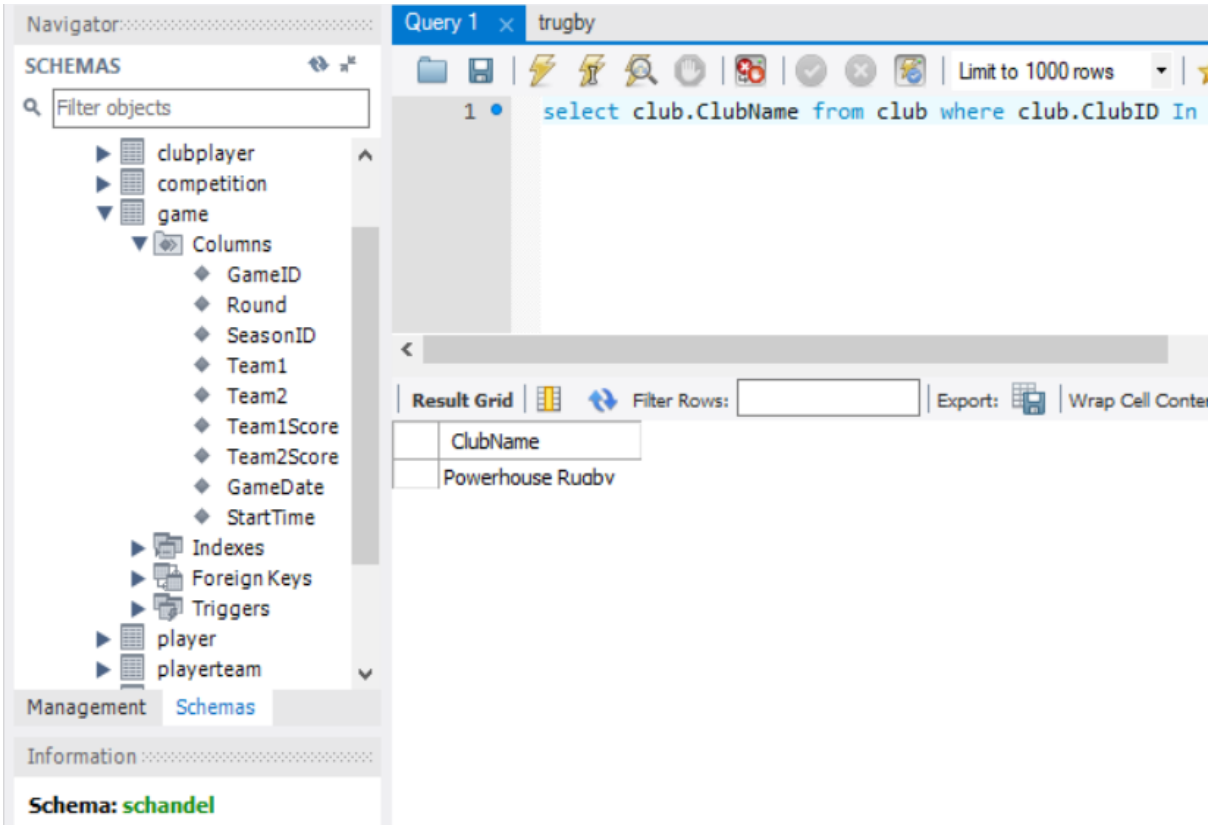
10 rows returned

Question 1.2):
Relational Algebra :

π club.ClubName(clubplayer $\bowtie$ (clubplayer.PlayerID=player.PlayerID $\wedge$ player.FirstName='Robert'$\wedge$ player.LastName='Menzies')
player $\bowtie$ club

Query :

```
SELECT club.ClubName

FROM clubplayer

INNER JOIN player on clubplayer.PlayerID=player.PlayerID and
player.FirstName='Robert' and player.LastName='Menzies'

NATURAL JOIN club
```

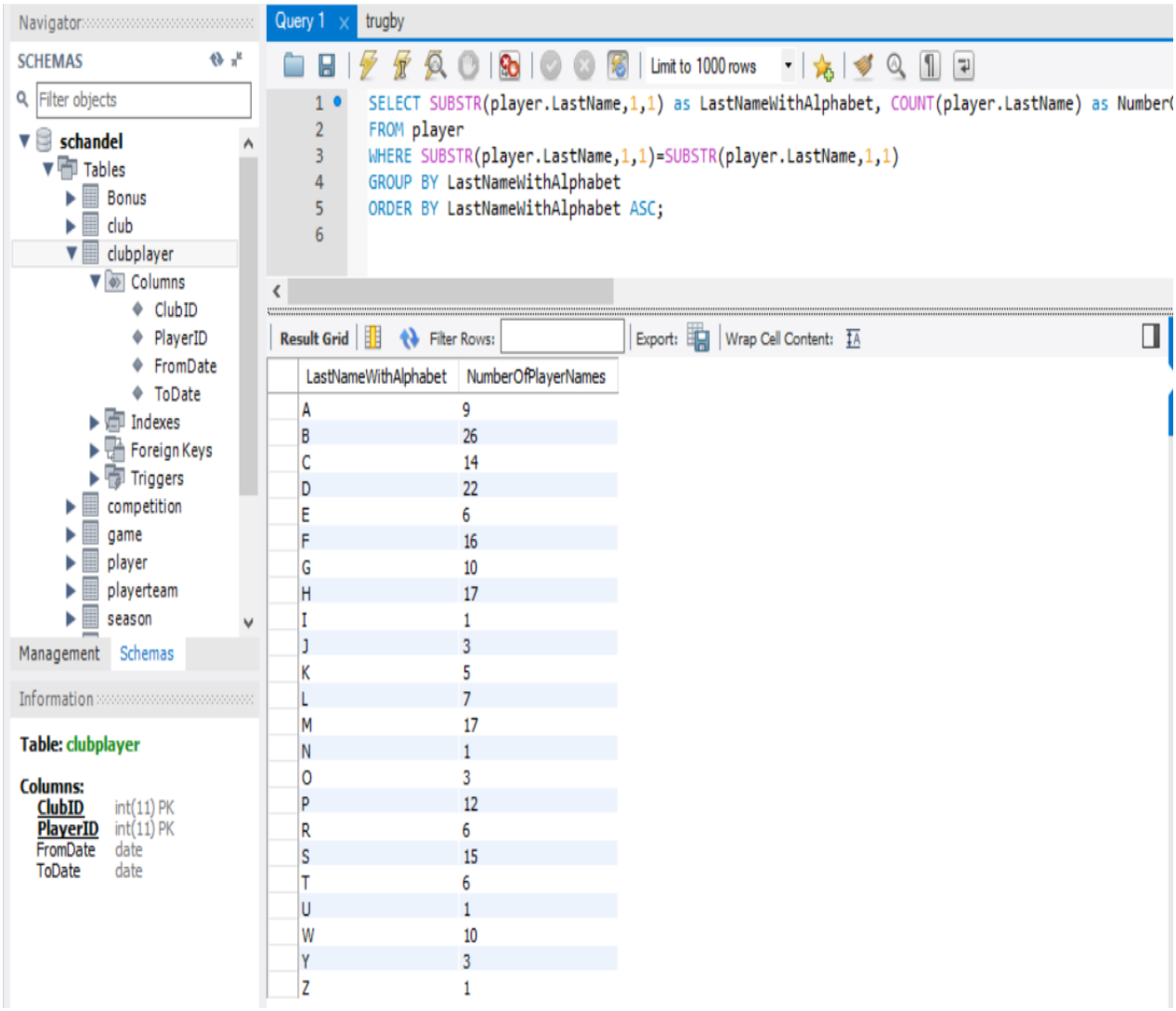


1 row returned

Question 2.1:

Query 2.1:

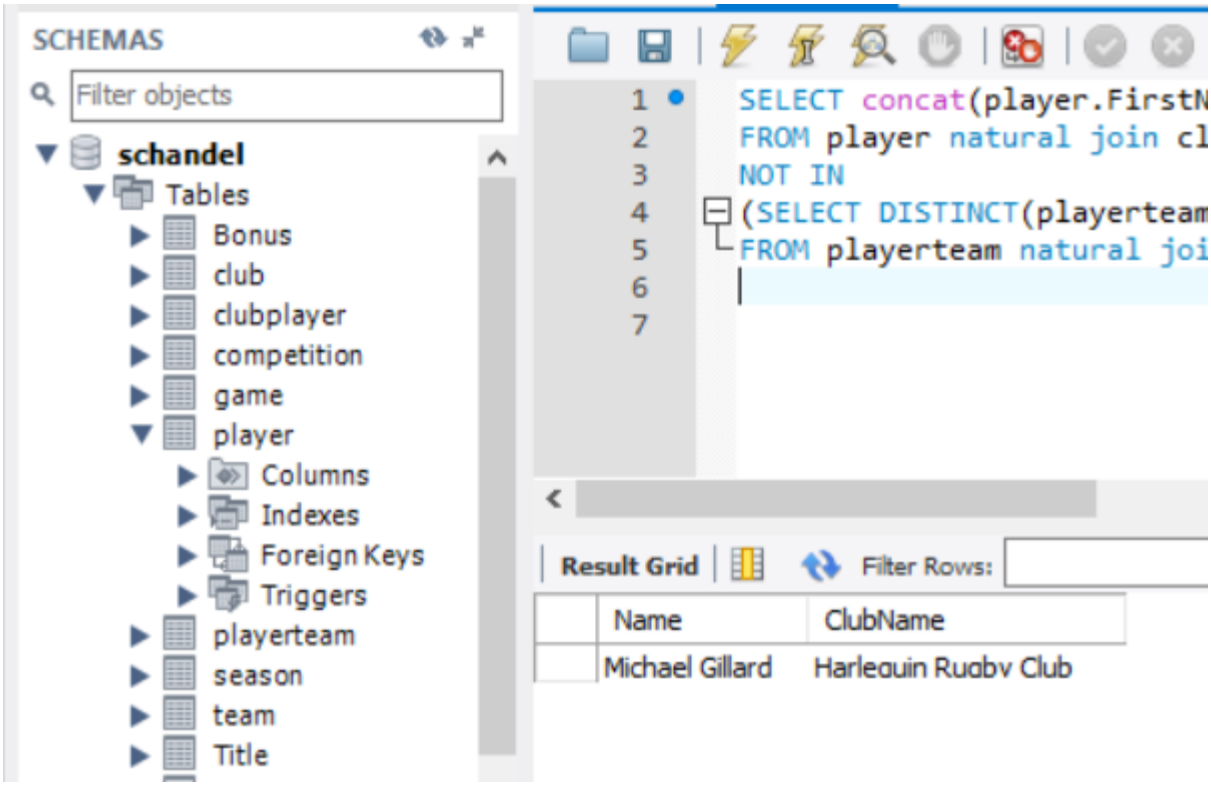
```
SELECT SUBSTR(player.LastName,1,1) as
LastNameWithAlphabet, COUNT(player.LastName) as
NumberOfPlayerNames

FROM player

WHERE
SUBSTR(player.LastName,1,1)=SUBSTR(player.LastName,1,1)

GROUP BY LastNameWithAlphabet

ORDER BY LastNameWithAlphabet ASC;
```



26 rows returned

Question2.2
Query 2.2:

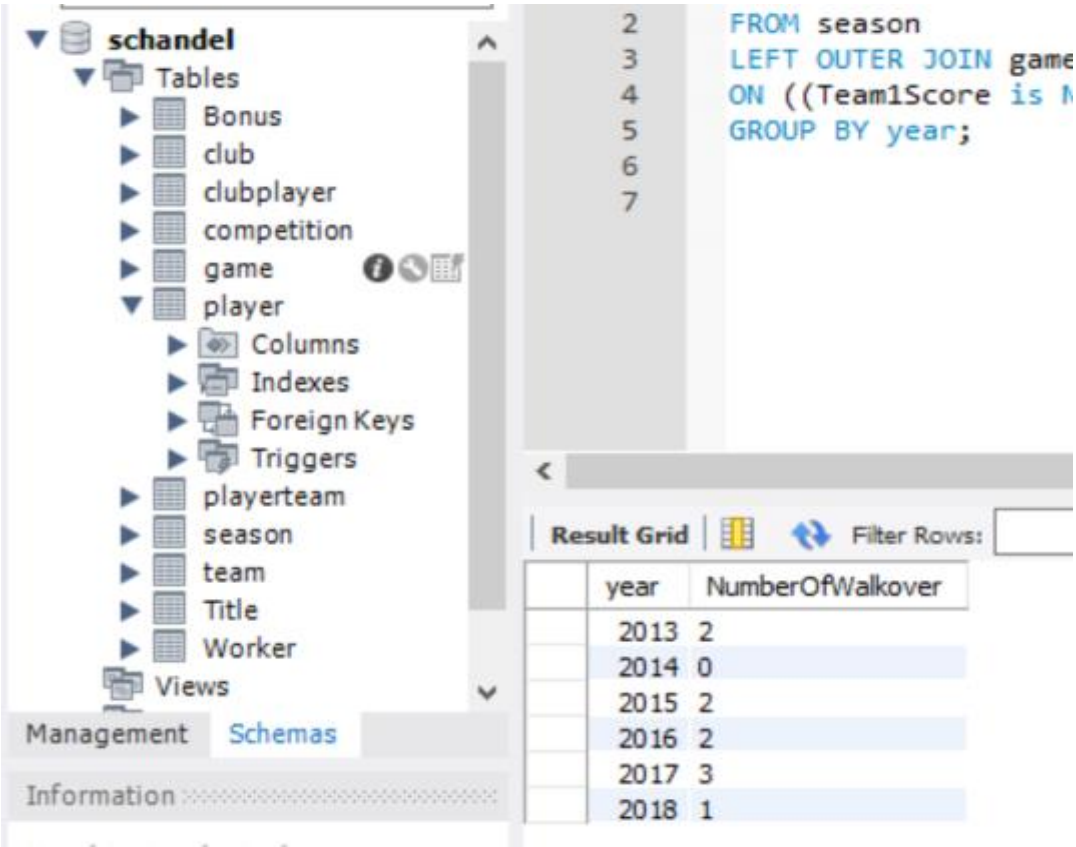
```
SELECT concat(player.FirstName,' ',player.LastName) as
Name,club.ClubName

FROM player NATURAL JOIN clubplayer NATURAL JOIN club

WHERE player.PlayerID

NOT IN
(SELECT DISTINCT(playerteam.PlayerID)
FROM playerteam NATURAL JOIN game)
```



1 row returned

Question 2.3
Query 2.3:

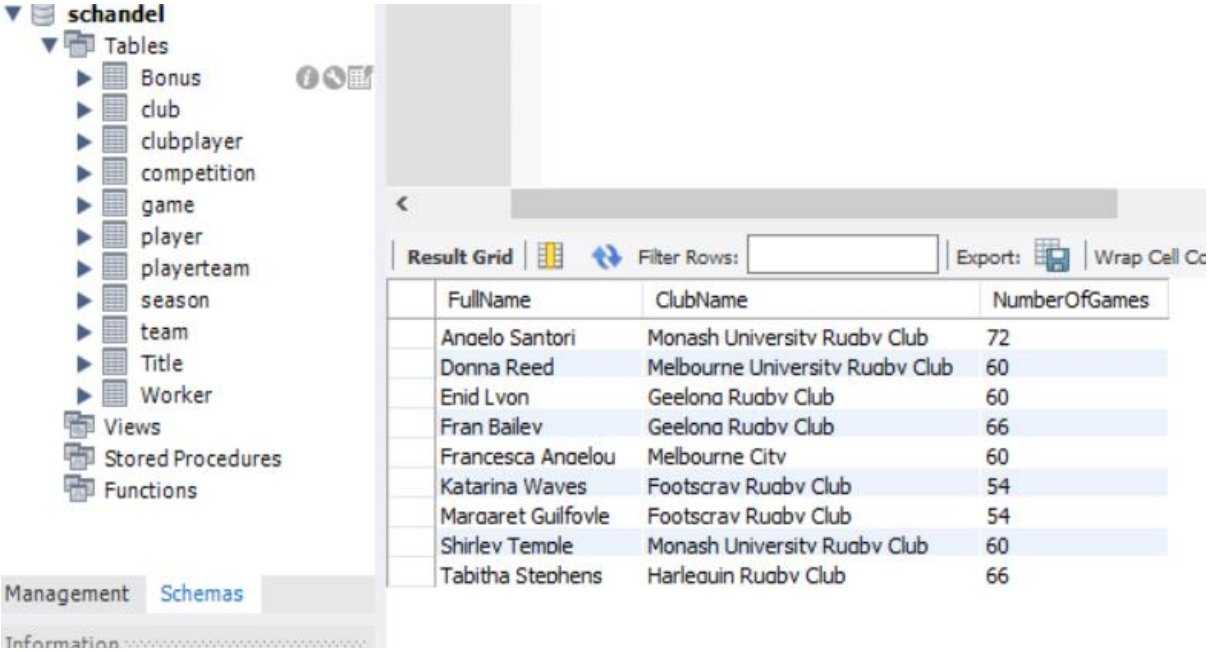
```
SELECT  season.SeasonYear as
year,count(distinct(game.GameID)) as NumberOfWalkover

FROM season

LEFT OUTER JOIN game

ON ((Team1Score is NULL and game.Team2Score=28) or
(Team2Score is NULL and game.Team1Score=28)) and
year(game.GameDate)=season.SeasonYear

GROUP BY year;
```



6 rows returned

Question 2.4:
Query 2.4 :

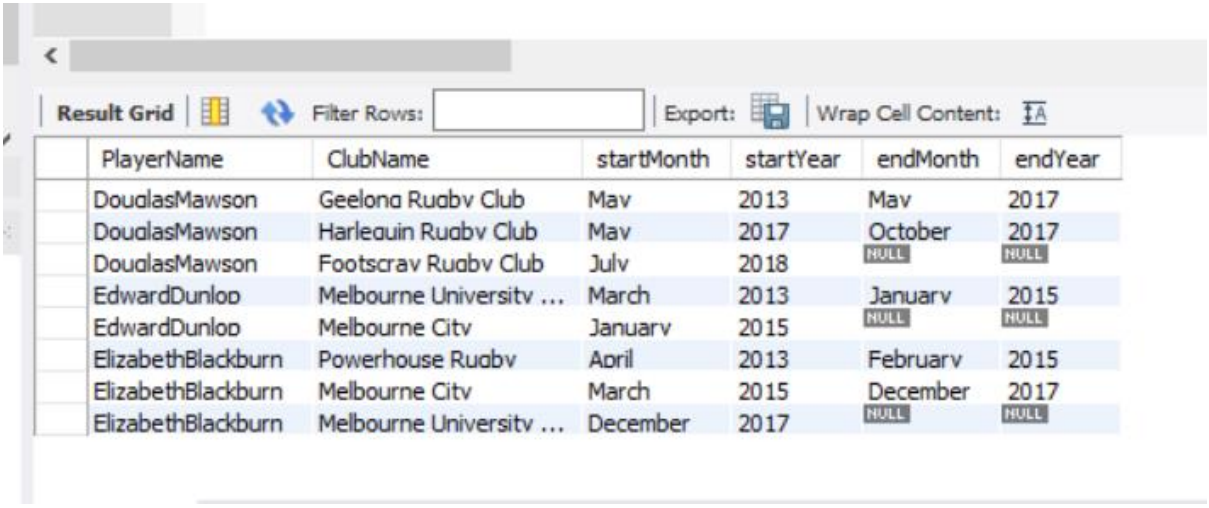
```
SELECT concat(player.FirstName,' ',player.LastName) as
FullName,club.ClubName,count(playerteam.GameID) as
NumberOfGames

FROM playerteam natural join team natural join club
natural join player

GROUP BY FullName,club.ClubName

HAVING count(playerteam.GameID)>50

ORDER BY FullName ASC ;
```



9 rows returned

Question 2.5:
Query 2.5:

```
SELECT concat(player.FirstName,'',player.LastName) as
PlayerName,club.ClubName,monthname(clubplayer.FromDate) as
startMonth,year(clubplayer.FromDate) as
startYear,monthname(clubplayer.ToDate) as
endMonth,year(clubplayer.ToDate) as endYear

FROM clubplayer natural join club natural join player

WHERE clubplayer.PlayerID

IN ( select PlayerID FROM clubplayer GROUP BY PlayerID

HAVING count(*) >=2 ORDER BY PlayerID ASC )

ORDER BY  PlayerName ASC,clubplayer.FromDate ASC;
```

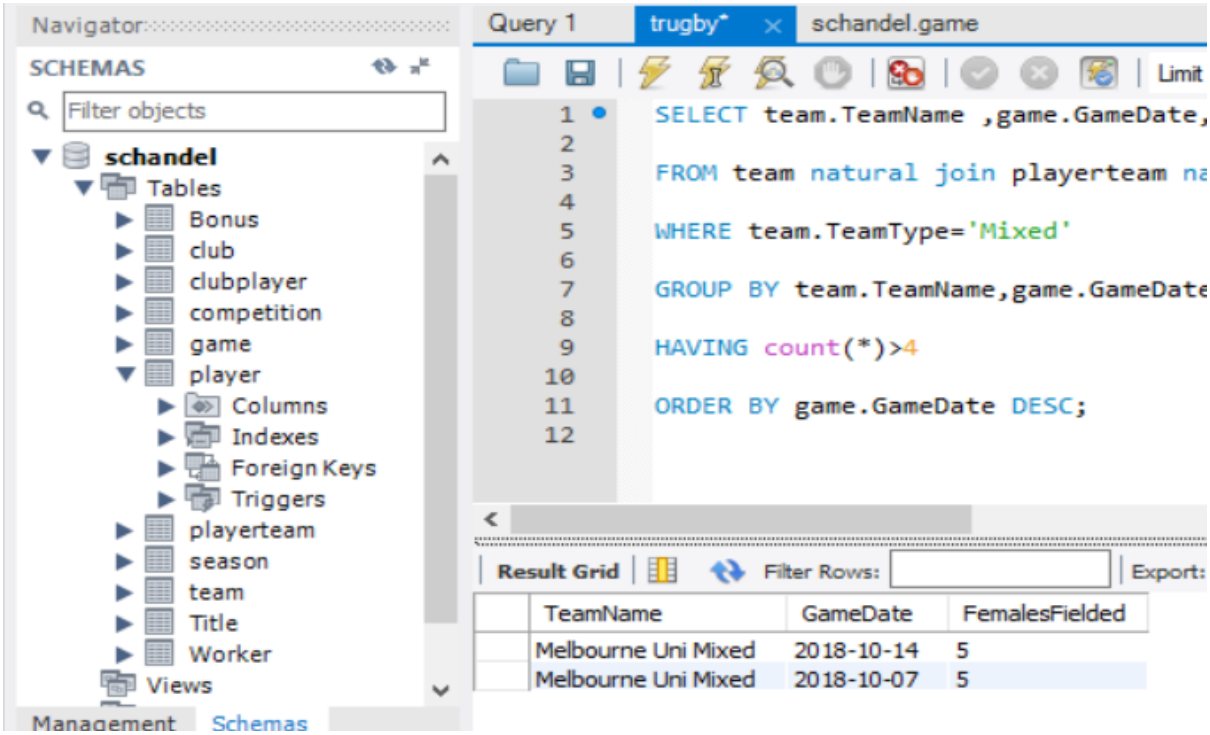


PlayerName	ClubName	startMonth	startYear	endMonth	endYear
DouglasMawson	Geelong Rugby Club	May	2013	May	2017
DouglasMawson	Harlequin Rugby Club	May	2017	October	2017
DouglasMawson	Footscray Rugby Club	July	2018	NULL	NULL
EdwardDunlop	Melbourne University ...	March	2013	January	2015
EdwardDunlop	Melbourne City	January	2015	NULL	NULL
ElizabethBlackburn	Powerhouse Rugby	April	2013	February	2015
ElizabethBlackburn	Melbourne City	March	2015	December	2017
ElizabethBlackburn	Melbourne University ...	December	2017	NULL	NULL

8 rows returned

Question 2.6:
Query: 2.6

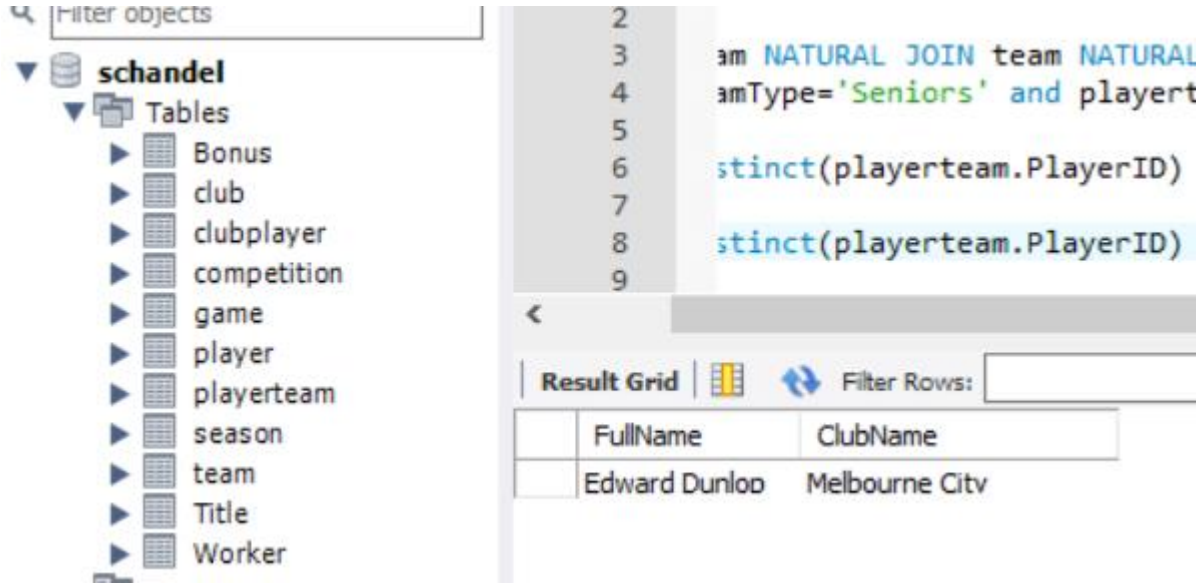
```
SELECT team.TeamName ,game.GameDate,count(playerteam.PlayerID) as
FemalesFielded

FROM team natural join playerteam natural join game inner join
player on  playerteam.PlayerID=player.PlayerID and player.Sex LIKE
'F%'

WHERE team.TeamType='Mixed'

GROUP BY team.TeamName,game.GameDate

HAVING count(*)>4

ORDER BY game.GameDate DESC;
```



2 rows returned

Question 2.7
Query 2.7:

```
SELECT distinct(concat(player.FirstName,' ',player.LastName)) as
FullName ,club.ClubName

FROM playerteam NATURAL JOIN team NATURAL JOIN player NATURAL JOIN
club
WHERE team.TeamType='Seniors' and
playerteam.PlayerID=player.PlayerID and player.Sex='M' and
playerteam.PlayerID

IN (SELECT distinct(playerteam.PlayerID) FROM playerteam NATURAL
JOIN team NATURAL JOIN player WHERE team.TeamType='Mixed' and
player.Sex='M') and playerteam.PlayerID

IN (SELECT distinct(playerteam.PlayerID) FROM playerteam NATURAL
JOIN team NATURAL JOIN player WHERE team.TeamType='Mens'  and
player.Sex='M');
```

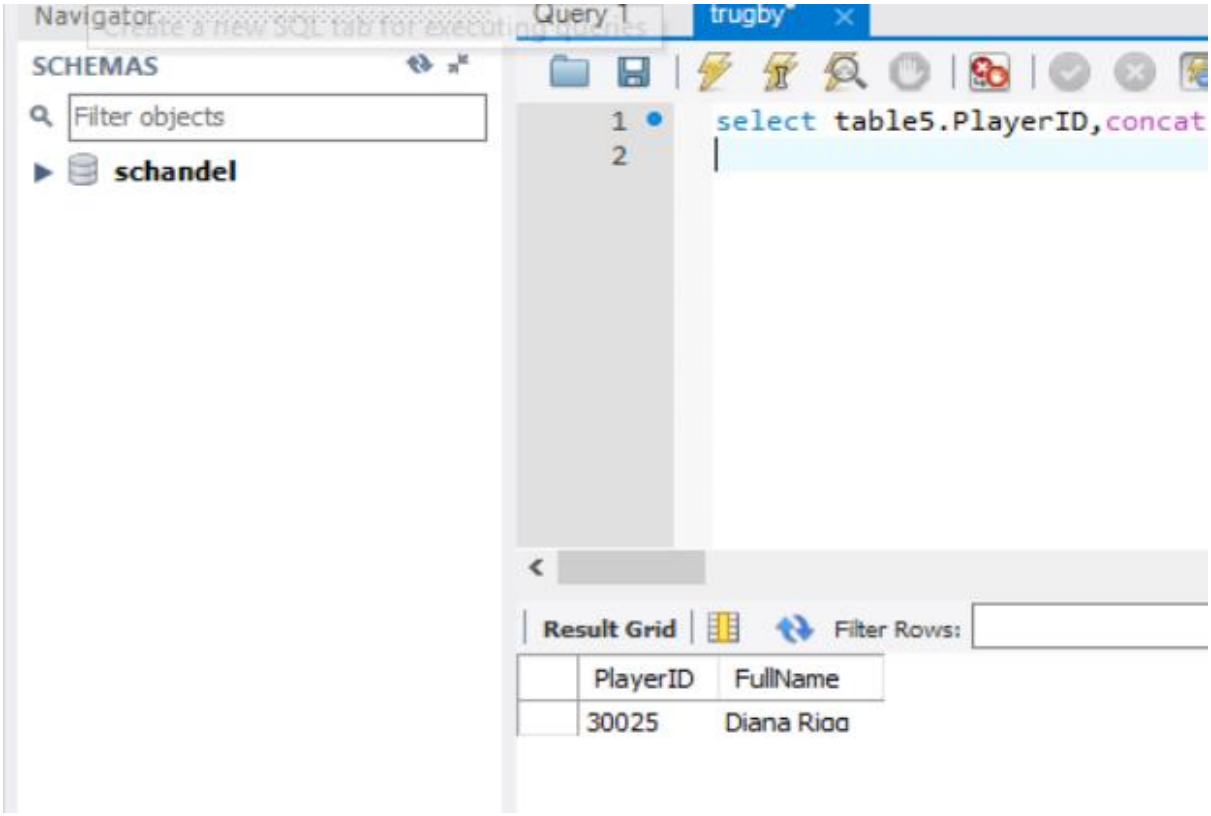


1 row returned

Question 2.8:

Query 2.8:

```
SELECT player.PlayerID, concat(player.FirstName,' ',player.LastName)
as FullName

FROM player where player.PlayerID In (select
distinct(playerteam.PlayerID) from playerteam  INNER JOIN game
ON playerteam.GameID=game.GameID
and year(game.GameDate)=2016) and player.PlayerID

IN (select distinct(playerteam.PlayerID) FROM playerteam INNER JOIN
game ON playerteam.GameID=game.GameID and year(game.GameDate)=2018)
And player.PlayerID

NOT IN (select distinct(playerteam.PlayerID) from playerteam INNER
JOIN game ON playerteam.GameID=game.GameID and
year(game.GameDate)=2017);
```

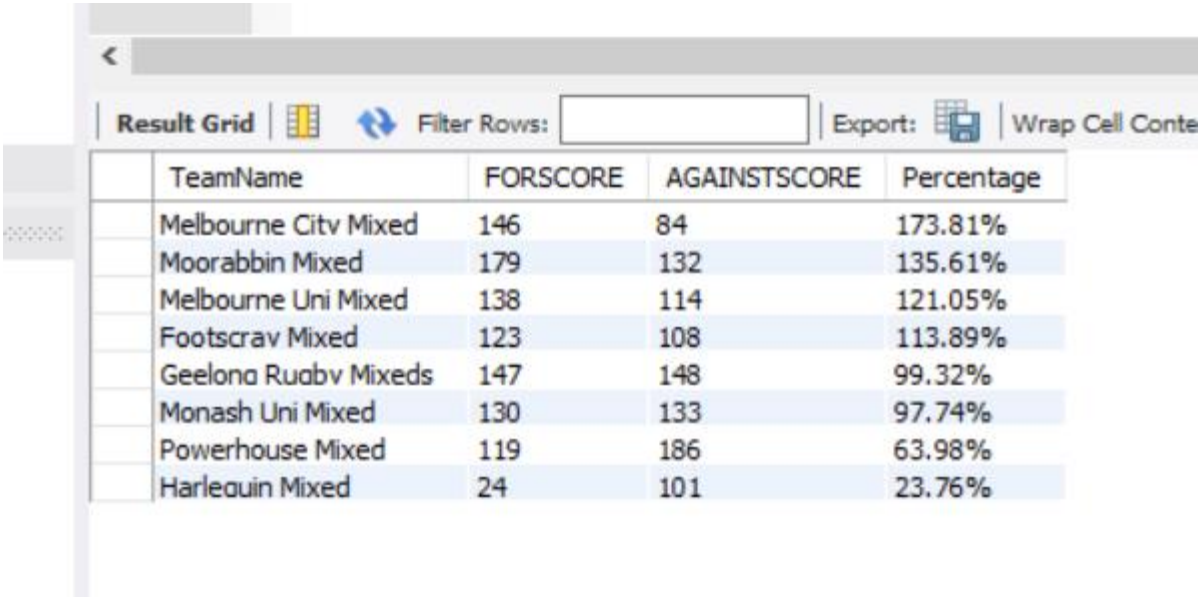


1 row returned

Question 2.9 :

Query 2.9:

```
SELECT team.TeamName,
SUM(CASE
         When team.TeamID=game.Team1 Then game.Team1Score
         Else game.Team2Score
         END) as FORSCORE,
SUM(CASE
        WHEN team.TeamID=game.Team1 Then game.Team2Score
        Else game.Team1Score
        END) as AGAINSTSCORE,concat(ROUND((SUM(CASE When
team.TeamID=game.Team1 Then game.Team1Score Else game.Team2Score
END)*100.0/SUM(CASE When team.TeamID=game.Team1 Then game.Team2Score
Else game.Team1Score END)) ,2),'%') as Percentage

FROM team INNER JOIN game

ON (team.TeamID=game.Team1 or team.TeamID=game.Team2) and
team.TeamType='Mixed' and year(game.GameDate)=2017
GROUP BY team.TeamID

ORDER BY ROUND((SUM(CASE When team.TeamID=game.Team1 Then
game.Team1Score Else game.Team2Score  END)*100.0/SUM(CASE When
team.TeamID=game.Team1 Then game.Team2Score Else game.Team1Score
END)) ,2) DESC;
```



TeamName	FORSCORE	AGAINSTSCORE	Percentage
Melbourne City Mixed	146	84	173.81%
Moorabbin Mixed	179	132	135.61%
Melbourne Uni Mixed	138	114	121.05%
Footscray Mixed	123	108	113.89%
Geelong Rugby Mixeds	147	148	99.32%
Monash Uni Mixed	130	133	97.74%
Powerhouse Mixed	119	186	63.98%
Harlequin Mixed	24	101	23.76%

8 rows returned