

## SQL mini project

This project will use Springboard' online SQL platform.

Using the "country\_club" database, containing 3 tables:

- i) the "Bookings" table,
- ii) the "Facilities" table, and
- iii) the "Members" table.

To answer the following questions:

**Q1: Some of the facilities charge a fee to members, but some do not. Please list the names of the facilities that do.** ¶

First we explore the tables in SQL:

i) The "Bookings" table:

```
1 SELECT *
2 FROM Bookings
```

bookid	facid	memid	starttime	slots
6	0	2	2012-07-04 09:00:00	3
7	0	2	2012-07-04 15:00:00	3
26	0	0	2012-07-06 08:00:00	3
27	0	0	2012-07-06 14:00:00	3
28	0	2	2012-07-06 15:30:00	3

ii) The "Facilities" table:

```
1 SELECT *
2 FROM Facilities
```

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
0	Tennis Court 1	5.0	25.0	10000	200
1	Tennis Court 2	5.0	25.0	8000	200
2	Badminton Court	0.0	15.5	4000	50
3	Table Tennis	0.0	5.0	320	10
4	Massage Room 1	9.9	80.0	4000	3000

iii) The "Members" table.

```

1 SELECT *
2 FROM Members|

```

memid	surname	firstname	address	zipcode	telephone	recommendedby	joindate
0	GUEST	GUEST	GUEST	0	(000) 000-0000		2012-07-01 00:00:00
1	Smith	Darren	8 Bloomsbury Close, Boston	4321	555-555-5555		2012-07-02 12:02:05
2	Smith	Tracy	8 Bloomsbury Close, New York	4321	555-555-5555		2012-07-02 12:08:23
3	Rownam	Tim	23 Highway Way, Boston	23423	(844) 693-0723		2012-07-03 09:32:15
4	Joplette	Janice	20 Crossing Road, New York	234	(833) 942-4710	1	2012-07-03 10:25:05
5	Butters	Gerald	1065 Huntingdon Avenue, Boston	56754	(844) 078-4130	1	2012-07-09 10:44:09

The Facilities table contains the cost charged to members. We do a query to find which facilities charges members.

```

1 SELECT name
2 FROM Facilities
3 WHERE membercost > 0

```

name
Tennis Court 1
Tennis Court 2
Massage Room 1
Massage Room 2
Squash Court

**Q2: How many facilities do not charge a fee to members?**

```

1 SELECT name,
2 Count(CASE WHEN membercost = 0 THEN 1 END) AS count
3 FROM Facilities|

```

name	count
Tennis Court 1	4

**Q3: How can you produce a list of facilities that charge a fee to members, where the fee is less than 20% of the facility's monthly maintenance cost? Return the facid, facility name, member cost, and monthly maintenance of the facilities in question.**

```

1 SELECT facid, name, membercost, monthlymaintenance
2 FROM Facilities
3 WHERE membercost < .2 * monthlymaintenance

```

facid	name	membercost	monthlymaintenance
0	Tennis Court 1	5.0	200
1	Tennis Court 2	5.0	200
2	Badminton Court	0.0	50
3	Table Tennis	0.0	10
4	Massage Room 1	9.9	3000
5	Massage Room 2	9.9	3000
6	Squash Court	3.5	80
7	Snooker Table	0.0	15
8	Pool Table	0.0	15

**Q4:** How can you retrieve the details of facilities with ID 1 and 5? Write the query without using the OR operator.

```

1 SELECT *
2 FROM Facilities
3 WHERE facid IN (1,5)

```

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
1	Tennis Court 2	5.0	25.0	8000	200
5	Massage Room 2	9.9	80.0	4000	3000

**Q5:** How can you produce a list of facilities, with each labelled as 'cheap' or 'expensive', depending on if their monthly maintenance cost is more than 100? Return the name and monthly maintenance of the facilities in question.

```

1 SELECT name, monthlymaintenance,
2
3 CASE WHEN monthlymaintenance <= 100 THEN 'cheap'
4      ELSE 'expensive' END AS cost
5
6 FROM Facilities

```

name	monthlymaintenance	cost
Tennis Court 1	200	expensive
Tennis Court 2	200	expensive
Badminton Court	50	cheap
Table Tennis	10	cheap
Massage Room 1	3000	expensive
Massage Room 2	3000	expensive
Squash Court	80	cheap
Snooker Table	15	cheap
Pool Table	15	cheap

**Q6:** You'd like to get the first and last name of the last member(s) who signed up. Do not use the LIMIT clause for your solution.

```

1 SELECT DISTINCT surname, firstname
2 FROM Members
3 WHERE surname != 'GUEST'
4 ORDER BY 1

```

<b>firstname</b>	<b>lastname</b>
Anne	Baker
Burton	Tracy
Charles	Owen
Darren	Smith
David	Farrell
David	Pinker
David	Jones
Douglas	Jones
Erica	Crumpet
Florence	Bader
Gerald	Butters
Henrietta	Rumney
Jack	Smith
Janice	Joplette
Jemima	Farrell
Joan	Coplin
John	Hunt
Matthew	Genting
Millicent	Purview
Nancy	Dare
Ponder	Stibbons
Ramnaresh	Sarwin
Tim	Rownam
Tim	Boothe

Timothy	Baker
Tracy	Smith

**Q7: How can you produce a list of all members who have used a tennis court? Include in your output the name of the court, and the name of the member formatted as a single column. Ensure no duplicate data, and order by the member name.**

```

1 |SELECT DISTINCT m.firstname, m.surname AS lastname
2 |FROM Bookings b
3 |     JOIN Members m
4 |     ON b.memid = m.memid
5 |     JOIN Facilities f
6 |     ON b.facid = f.facid
7 |
8 |WHERE f.name LIKE 'Tennis%'
9 |AND m.surname != 'GUEST'
10|ORDER BY firstname

```

<b>firstname</b>	<b>lastname</b>
Anne	Baker
Burton	Tracy
Charles	Owen
Darren	Smith
David	Farrell
David	Pinker
David	Jones
Douglas	Jones
Erica	Crumpet
Florence	Bader
Gerald	Butters
Henrietta	Rumney
Jack	Smith
Janice	Joplette
Jemima	Farrell
Joan	Coplin
John	Hunt
Matthew	Genting
Millicent	Purview
Nancy	Dare
Ponder	Stibbons
Ramnaresh	Sarwin
Tim	Rownam
Tim	Boothe

Timothy	Baker
Tracy	Smith

**Q8: How can you produce a list of bookings on the day of 2012-09-14 which will cost the member (or guest) more than 30? Remember that guests have different costs to members (the listed costs are per half-hour 'slot'), and the guest user's ID is always 0. Include in your output the name of the facility, the name of the member formatted as a single column, and the cost. Order by descending cost, and do not use any subqueries.**

```

1 |SELECT m.firstname, m.surname, f.name, b.starttime,
2 |CASE WHEN (f.guestcost*b.slots) > 30 THEN
   (f.guestcost*b.slots)
3 |WHEN (f.membercost*b.slots) > 30 THEN
   (f.membercost*b.slots) END AS cost
4 |FROM Bookings b
5 |JOIN Facilities f
6 |    ON b.facid = f.facid
7 |JOIN Members m
8 |    ON b.memid = m.memid
9 |WHERE b.starttime LIKE '2012-09-14%'
10 |AND m.firstname != 'GUEST'
11 |ORDER BY cost DESC

```



<b>firstname</b>	<b>surname</b>	<b>name</b>	<b>starttime</b>	<b>cost</b>
Jemima	Farrell	Massage Room 1	2012-09-14 14:00:00	320.0
Ponder	Stibbons	Massage Room 1	2012-09-14 12:00:00	160.0
Florence	Bader	Massage Room 2	2012-09-14 09:30:00	160.0
Jemima	Farrell	Massage Room 1	2012-09-14 11:00:00	160.0
Matthew	Genting	Massage Room 1	2012-09-14 19:00:00	160.0
Jack	Smith	Massage Room 1	2012-09-14 08:00:00	160.0
Burton	Tracy	Massage Room 1	2012-09-14 18:00:00	160.0
David	Jones	Tennis Court 2	2012-09-14 08:00:00	150.0
Tim	Boothe	Tennis Court 2	2012-09-14 11:00:00	150.0
Burton	Tracy	Tennis Court 1	2012-09-14 08:00:00	75.0
Douglas	Jones	Tennis Court 1	2012-09-14 17:30:00	75.0
Tim	Rownam	Tennis Court 1	2012-09-14 14:00:00	75.0
Gerald	Butters	Tennis Court 1	2012-09-14 12:30:00	75.0
David	Pinker	Tennis Court 1	2012-09-14 10:00:00	75.0
Gerald	Butters	Badminton Court	2012-09-14 16:00:00	46.5
Darren	Smith	Badminton Court	2012-09-14 13:00:00	46.5
Anna	Mackenzie	Badminton Court	2012-09-14 11:00:00	46.5
Darren	Smith	Badminton Court	2012-09-14 08:00:00	46.5
Ponder	Stibbons	Badminton Court	2012-09-14 18:00:00	46.5
Anne	Baker	Squash Court	2012-09-14 08:30:00	35.0
David	Pinker	Squash Court	2012-09-14 17:30:00	35.0
Anne	Baker	Squash Court	2012-09-14 16:00:00	35.0

Timothy	Baker	Squash Court	2012-09-14 14:00:00	35.0
Ramnaresh	Sarwin	Pool Table	2012-09-14 14:00:00	<i>NULL</i>
Ramnaresh	Sarwin	Snooker Table	2012-09-14 12:00:00	<i>NULL</i>
Ponder	Stibbons	Pool Table	2012-09-14 10:30:00	<i>NULL</i>
Tim	Rownam	Pool Table	2012-09-14 16:30:00	<i>NULL</i>
Matthew	Genting	Table Tennis	2012-09-14 12:30:00	<i>NULL</i>
Tim	Rownam	Pool Table	2012-09-14 08:00:00	<i>NULL</i>
Timothy	Baker	Pool Table	2012-09-14 13:30:00	<i>NULL</i>

**Q9: This time, produce the same result as in Q8, but using a subquery.**

```

1 SELECT sub.*|
2 FROM (
3
4     SELECT m.firstname, m.surname, f.name, b.starttime,
5
6     CASE WHEN (f.guestcost*b.slots) > 30 THEN (f.guestcost*b.slots)
7           WHEN (f.membercost*b.slots) > 30 THEN (f.membercost*b.slots) END AS cost
8
9     FROM Bookings b
10    JOIN Facilities f
11      ON b.facid = f.facid
12    JOIN Members m
13      ON b.memid = m.memid ) sub
14
15 WHERE sub.starttime LIKE '2012-09-14%'
16 AND sub.firstname != 'GUEST'
17 AND cost != 'NULL'
18 ORDER BY cost DESC

```

<b>firstname</b>	<b>surname</b>	<b>name</b>	<b>starttime</b>	<b>cost</b>
Jemima	Farrell	Massage Room 1	2012-09-14 14:00:00	320.0
Jemima	Farrell	Massage Room 1	2012-09-14 11:00:00	160.0
Jack	Smith	Massage Room 1	2012-09-14 08:00:00	160.0
Florence	Bader	Massage Room 2	2012-09-14 09:30:00	160.0
Matthew	Genting	Massage Room 1	2012-09-14 19:00:00	160.0
Ponder	Stibbons	Massage Room 1	2012-09-14 12:00:00	160.0
Burton	Tracy	Massage Room 1	2012-09-14 18:00:00	160.0
Tim	Boothe	Tennis Court 2	2012-09-14 11:00:00	150.0
David	Jones	Tennis Court 2	2012-09-14 08:00:00	150.0
Tim	Rownam	Tennis Court 1	2012-09-14 14:00:00	75.0
Gerald	Butters	Tennis Court 1	2012-09-14 12:30:00	75.0
David	Pinker	Tennis Court 1	2012-09-14 10:00:00	75.0
Douglas	Jones	Tennis Court 1	2012-09-14 17:30:00	75.0
Burton	Tracy	Tennis Court 1	2012-09-14 08:00:00	75.0
Anna	Mackenzie	Badminton Court	2012-09-14 11:00:00	46.5
Darren	Smith	Badminton Court	2012-09-14 08:00:00	46.5
Ponder	Stibbons	Badminton Court	2012-09-14 18:00:00	46.5
Gerald	Butters	Badminton Court	2012-09-14 16:00:00	46.5
Darren	Smith	Badminton Court	2012-09-14 13:00:00	46.5
Anne	Baker	Squash Court	2012-09-14 08:30:00	35.0
Timothy	Baker	Squash Court	2012-09-14 14:00:00	35.0
David	Pinker	Squash Court	2012-09-14 17:30:00	35.0
Anne	Baker	Squash Court	2012-09-14 16:00:00	35.0

**Q10: Produce a list of facilities with a total revenue less than 1000. The output of facility name and total revenue, sorted by revenue. Remember that there's a different cost for guests and members!**

```
1 SELECT *
2 FROM ( SELECT sub.name, SUM( sub.cost ) AS total_revenue
3
4       FROM ( SELECT f.name,
5                 CASE WHEN b.memid =0
6                     THEN f.guestcost * b.slots
7                     ELSE f.membercost * b.slots
8                 END AS cost
9
10            FROM Bookings b
11            JOIN Facilities f
12              ON b.facid = f.facid
13            JOIN Members m
14              ON b.memid = m.memid )sub
15
16       GROUP BY sub.name) sub2
17 WHERE sub2.total_revenue <1000
```

name	total_revenue
Pool Table	270.0
Snooker Table	240.0
Table Tennis	180.0