

HOMEWORK SQL 1

Anis Dela Desela – Data Science – Batch 7

1. How can you retrieve all the information from the cd.facilities table?

```
SELECT *  
FROM cd.facilities;
```

	facid [PK] integer	name character varying (100)	membercost numeric	guestcost numeric	initialoutlay numeric	monthlymaintenance numeric
1	0	Tennis Court 1	5	25	10000	200
2	1	Tennis Court 2	5	25	8000	200
3	2	Badminton Court	0	15.5	4000	50
4	3	Table Tennis	0	5	320	10
5	4	Massage Room 1	35	80	4000	3000
6	5	Massage Room 2	35	80	4000	3000
7	6	Squash Court	3.5	17.5	5000	80
8	7	Snooker Table	0	5	450	15
9	8	Pool Table	0	5	400	15

2. You want to print out a list of all of the facilities and their cost to members.
How would you retrieve a list of only facility names and costs?

```
SELECT name, membercost  
FROM cd.facilities;
```

	name character varying (100)	membercost numeric
1	Tennis Court 1	5
2	Tennis Court 2	5
3	Badminton Court	0
4	Table Tennis	0
5	Massage Room 1	35
6	Massage Room 2	35
7	Squash Court	3.5
8	Snooker Table	0
9	Pool Table	0

3. How can you produce a list of facilities that charge a fee to members?

Expected Results should have just 5 rows

```
SELECT *
FROM cd.facilities
WHERE membercost != 0;
```

	facid [PK] integer	name character varying (100)	membercost numeric	guestcost numeric	initialoutlay numeric	monthlymaintenance numeric
1	0	Tennis Court 1	5	25	10000	200
2	1	Tennis Court 2	5	25	8000	200
3	4	Massage Room 1	35	80	4000	3000
4	5	Massage Room 2	35	80	4000	3000
5	6	Squash Court	3.5	17.5	5000	80

4. How can you produce a list of facilities that charge a fee to members, and that fee is less than 1/50th of the monthly maintenance cost? Return the facid, facility name, member cost, and monthly maintenance of the facilities in question.

Result is just two rows:

```
SELECT facid, name, membercost, monthlymaintenance
FROM cd.facilities
WHERE membercost != 0
AND membercost < monthlymaintenance/50;
```

	facid [PK] integer	name character varying (100)	membercost numeric	monthlymaintenance numeric
1	4	Massage Room 1	35	3000
2	5	Massage Room 2	35	3000

5. How can you produce a list of all facilities with the word 'Tennis' in their name?

Expected Result is 3 rows

```
SELECT *
FROM cd.facilities
WHERE name ILIKE ('%tennis%');
```

	facid [PK] integer	name character varying (100)	membercost numeric	guestcost numeric	initialoutlay numeric	monthlymaintenance numeric
1	0	Tennis Court 1	5	25	10000	200
2	1	Tennis Court 2	5	25	8000	200
3	3	Table Tennis	0	5	320	10

6. How can you retrieve the details of facilities with ID 1 and 5? Try to do it without using the OR operator.

Expected Result is 2 rows

```
SELECT *
FROM cd.facilities
WHERE facid IN (1, 5);
```

	facid [PK] integer	name character varying (100)	membercost numeric	guestcost numeric	initialoutlay numeric	monthlymaintenance numeric
1	1	Tennis Court 2	5	25	8000	200
2	5	Massage Room 2	35	80	4000	3000

7. How can you produce a list of members who joined after the start of September 2012? Return the memid, surname, firstname, and joindate of the members in question. Expected Result is 10 rows (not all are shown below)

```
SELECT memid, surname, firstname, joindate
FROM cd.members
WHERE joindate >= '2012-09-01';
```

	memid [PK] integer	surname character varying (200)	firstname character varying (200)	joindate timestamp without time zone
1	24	Sarwin	Ramnaresh	2012-09-01 08:44:42
2	26	Jones	Douglas	2012-09-02 18:43:05
3	27	Rumney	Henrietta	2012-09-05 08:42:35
4	28	Farrell	David	2012-09-15 08:22:05
5	29	Worthington-Smyth	Henry	2012-09-17 12:27:15
6	30	Purview	Millicent	2012-09-18 19:04:01
7	33	Tupperware	Hyacinth	2012-09-18 19:32:05
8	35	Hunt	John	2012-09-19 11:32:45
9	36	Crumpet	Erica	2012-09-22 08:36:38
10	37	Smith	Darren	2012-09-26 18:08:45

8. How can you produce an ordered list of the first 10 surnames in the members table? The list must not contain duplicates. Expected Result should be 10 rows if you include GUEST as a last name

```
SELECT DISTINCT(surname)
FROM cd.members
ORDER BY surname
LIMIT 10;
```

	surname character varying (200)
1	Bader
2	Baker
3	Boothe
4	Butters
5	Coplin
6	Crumpet
7	Dare
8	Farrell
9	Genting
10	GUEST

```
SELECT DISTINCT(surname)
FROM cd.members
WHERE surname != 'GUEST'
ORDER BY surname
LIMIT 9;
```

	surname character varying (200)
1	Bader
2	Baker
3	Boothe
4	Butters
5	Coplin
6	Crumpet
7	Dare
8	Farrell
9	Genting

9. You'd like to get the signup date of your last member.
How can you retrieve this information?

```
SELECT joindate
FROM cd.members
ORDER BY joindate DESC
LIMIT 1;
```

	joindate timestamp without time zone	
1	2012-09-26 18:08:45	

10. Produce a count of the number of facilities that have a cost to guests of 10 or more.

```
SELECT COUNT(*)
FROM cd.facilities
WHERE guestcost >= 10
```

	count bigint	
1	6	

11. Produce a list of the total number of slots booked per facility in the month of September 2012.
Produce an output table consisting of facility id and slots, sorted by the number of slots.

Expected Result is 9 rows

```
SELECT facid, SUM(slots) AS total_slots
FROM cd.bookings
WHERE bookid IN
      (SELECT bookid
      FROM cd.bookings
      WHERE starttime BETWEEN '2012-09-01'AND '2012-10-01')
GROUP BY facid
ORDER BY SUM(slots)
```

	facid integer		total_slots bigint	
1	5		122	
2	3		422	
3	7		426	
4	8		471	
5	6		540	
6	2		570	
7	1		588	
8	0		591	
9	4		648	

12. Produce a list of facilities with more than 1000 slots booked. Produce an output table consisting of facility id and total slots, sorted by facility id.

Expected Result is 5 rows

```
SELECT facid, SUM(slots) AS total_slots
FROM cd.bookings
GROUP BY facid
HAVING SUM(slots) > 1000
ORDER BY facid
```

	facid integer	total_slots bigint
1	0	1320
2	1	1278
3	2	1209
4	4	1404
5	6	1104

13. How can you produce a list of the start times for bookings for tennis courts, for the date '2012-09-21'? Return a list of start time and facility name pairings, ordered by the time.

Expected Result is 12 rows

```
SELECT a.starttime AS start, b.name
FROM cd.bookings AS a
INNER JOIN cd.facilities AS b
ON a.facid = b.facid
WHERE DATE(a.starttime) = '2012-09-21 %'
AND b.name ILIKE '%tennis court%'
ORDER BY a.starttime
```

	start timestamp without time zone	name character varying (100)
1	2012-09-21 08:00:00	Tennis Court 1
2	2012-09-21 08:00:00	Tennis Court 2
3	2012-09-21 09:30:00	Tennis Court 1
4	2012-09-21 10:00:00	Tennis Court 2
5	2012-09-21 11:30:00	Tennis Court 2
6	2012-09-21 12:00:00	Tennis Court 1
7	2012-09-21 13:30:00	Tennis Court 1
8	2012-09-21 14:00:00	Tennis Court 2
9	2012-09-21 15:30:00	Tennis Court 1
10	2012-09-21 16:00:00	Tennis Court 2
11	2012-09-21 17:00:00	Tennis Court 1
12	2012-09-21 18:00:00	Tennis Court 2

14. How can you produce a list of the start times for bookings by members named 'David Farrell'?

Expected result is 34 rows of timestamps

```
SELECT a.starttime, b.firstname, b.surname  
FROM cd.bookings AS a  
INNER JOIN cd. members AS b  
ON a.memid = b.memid  
WHERE firstname ILIKE 'david'  
AND surname ILIKE 'farrell'
```

	starttime timestamp without time zone	firstname character varying (200)	surname character varying (200)
1	2012-09-18 09:00:00	David	Farrell
2	2012-09-18 13:30:00	David	Farrell
3	2012-09-18 17:30:00	David	Farrell
4	2012-09-18 20:00:00	David	Farrell
5	2012-09-19 09:30:00	David	Farrell
6	2012-09-19 12:00:00	David	Farrell
7	2012-09-19 15:00:00	David	Farrell
8	2012-09-20 11:30:00	David	Farrell
9	2012-09-20 14:00:00	David	Farrell
10	2012-09-20 15:30:00	David	Farrell
11	2012-09-21 10:30:00	David	Farrell
12	2012-09-21 14:00:00	David	Farrell
13	2012-09-22 08:30:00	David	Farrell
14	2012-09-22 17:00:00	David	Farrell
15	2012-09-23 08:30:00	David	Farrell
16	2012-09-23 17:30:00	David	Farrell
17	2012-09-23 19:00:00	David	Farrell
18	2012-09-24 08:00:00	David	Farrell
19	2012-09-24 12:30:00	David	Farrell
20	2012-09-24 16:30:00	David	Farrell
21	2012-09-25 15:30:00	David	Farrell
22	2012-09-25 17:00:00	David	Farrell
23	2012-09-26 13:00:00	David	Farrell
24	2012-09-26 17:00:00	David	Farrell
25	2012-09-27 08:00:00	David	Farrell
26	2012-09-28 09:30:00	David	Farrell
27	2012-09-28 11:30:00	David	Farrell
28	2012-09-28 13:00:00	David	Farrell
29	2012-09-29 10:30:00	David	Farrell
30	2012-09-29 13:30:00	David	Farrell
31	2012-09-29 14:30:00	David	Farrell
32	2012-09-29 16:00:00	David	Farrell
33	2012-09-29 17:30:00	David	Farrell
34	2012-09-30 14:30:00	David	Farrell