

## EXERCISES 1

Go to postgresSQL: <http://www.student.famnit.upr.si/phppgadmin/>

Login as:

user: OPBvaje

pass: OPBvaje

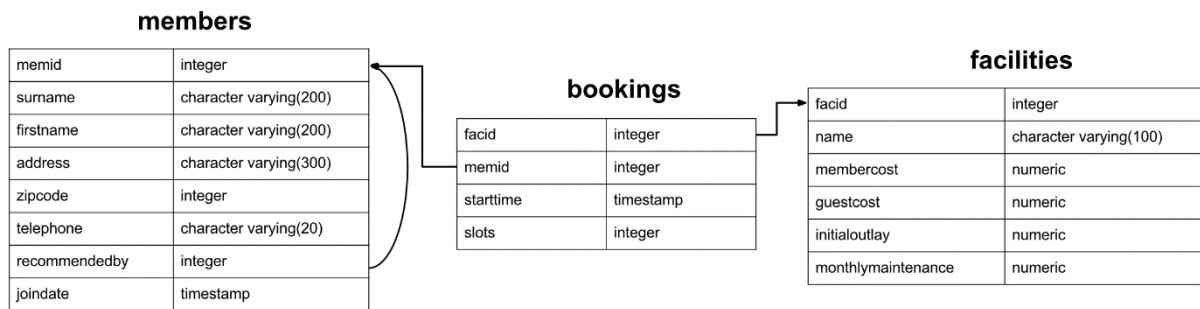
Click on the server "PostgreSQL" → on the top right click on the "SQL"

Create an username with a password

Execute each of these two lines separately.

```
CREATE USER user_name WITH PASSWORD 'set_password' CREATEDB SUPERUSER;
CREATE DATABASE name_database WITH OWNER user_name TEMPLATE opb_19_20;
```

Logout and login with a new created username.



### 1. Retrieve all the information from the facilities table

```
SELECT *
FROM facilities;
```

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
0	Tennis Court 1	5	25	10000	200
1	Tennis Court 2	5	25	8000	200
2	Badminton Court	0	15.5	4000	50
3	Table Tennis	0	5	320	10
4	Massage Room 1	35	80	4000	3000
5	Massage Room 2	35	80	4000	3000
6	Squash Court	3.5	17.5	5000	80
7	Snooker Table	0	5	450	15
8	Pool Table	0	5	400	15

### 2. Print out a list of all of the facilities and their cost to members.

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

name	membercost
Tennis Court 1	5
Tennis Court 2	5
Badminton Court	0
Table Tennis	0
Massage Room 1	35
Massage Room 2	35
Squash Court	3.5
Snooker Table	0
Pool Table	0

3. Produce a list of facilities that charge a fee to members.

<b>SELECT</b> name <b>FROM</b> facilities <b>WHERE</b> membercost > 0;	<table><tr><th>name</th></tr><tr><td>Tennis Court 1</td></tr><tr><td>Tennis Court 2</td></tr><tr><td>Massage Room 1</td></tr><tr><td>Massage Room 2</td></tr><tr><td>Squash Court</td></tr></table>	name	Tennis Court 1	Tennis Court 2	Massage Room 1	Massage Room 2	Squash Court
name							
Tennis Court 1							
Tennis Court 2							
Massage Room 1							
Massage Room 2							
Squash Court							

4. 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.

```
SELECT facid, name, membercost, monthlymaintenance
FROM facilities
WHERE (membercost > 0) AND (membercost < monthlymaintenance/50.0);
```

facid	name	membercost	monthlymaintenance
4	Massage Room 1	35	3000
5	Massage Room 2	35	3000

5. Produce a list of all facilities with the word 'Tennis' in their name.

<pre>SELECT name FROM facilities WHERE name LIKE '%Tennis%';</pre>	<table><tr><th>name</th></tr><tr><td>Tennis Court 1</td></tr><tr><td>Tennis Court 2</td></tr><tr><td>Table Tennis</td></tr></table>	name	Tennis Court 1	Tennis Court 2	Table Tennis
name					
Tennis Court 1					
Tennis Court 2					
Table Tennis					

6. Retrieve the details of facilities with ID 1 and 5? *Do no use the OR operator*

```
select *
from facilities
where facid in (1,5);
```

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
1	Tennis Court 2	5	25	8000	200
5	Massage Room 2	35	80	4000	3000

7. Produce a list of members who joined after the start of September 2012. Return the memid, surname, firstname, and joindate of the members.

```
select memid, surname, firstname, joindate
from members
where joindate >= '2012-09-01';
```

memid	surname	firstname	joindate
24	Sarvin	Ramnaresh	2012-09-01 08:44:42
26	Jones	Douglas	2012-09-02 18:43:05
27	Rumney	Henrietta	2012-09-05 08:42:35
28	Farrell	David	2012-09-15 08:22:05
29	Worthington-Smyth	Henry	2012-09-17 12:27:15
30	Purview	Millicent	2012-09-18 19:04:01
33	Tupperware	Hyacinth	2012-09-18 19:32:05
35	Hunt	John	2012-09-19 11:32:45
36	Crumpet	Erica	2012-09-22 08:36:38
37	Smith	Darren	2012-09-26 18:08:45

8. Produce an ordered list of the first 10 surnames in the members table? The list must not contain duplicates.

<pre>select distinct surname from members order by surname limit 10;</pre>	<table><tr><th>surname</th></tr><tr><td>Bader</td></tr><tr><td>Baker</td></tr><tr><td>Boothe</td></tr><tr><td>Butters</td></tr><tr><td>Coplin</td></tr><tr><td>Crumpet</td></tr><tr><td>Dare</td></tr><tr><td>Farrell</td></tr><tr><td>Gentling</td></tr><tr><td>GUEST</td></tr></table>	surname	Bader	Baker	Boothe	Butters	Coplin	Crumpet	Dare	Farrell	Gentling	GUEST
surname												
Bader												
Baker												
Boothe												
Butters												
Coplin												
Crumpet												
Dare												
Farrell												
Gentling												
GUEST												

9. Return a combined list of all surnames and all facility names.

<pre>select surname as "combined" from members union select name from facilities;</pre>	<table><tr><td>combined</td></tr><tr><td>Tennis Court 2</td></tr><tr><td>Worthington-Smyth</td></tr><tr><td>Badminton Court</td></tr><tr><td>Pinker</td></tr><tr><td>Dare</td></tr><tr><td>Bader</td></tr><tr><td>Mackenzie</td></tr><tr><td>Crumpet</td></tr><tr><td>Massage Room 1</td></tr><tr><td>Squash Court</td></tr><tr><td>Tracy</td></tr><tr><td>Hunt</td></tr><tr><td>Tupperware</td></tr><tr><td>Smith</td></tr><tr><td>Butters</td></tr><tr><td>Rownam</td></tr><tr><td>Baker</td></tr><tr><td>Gentling</td></tr><tr><td>Purview</td></tr><tr><td>Coplin</td></tr><tr><td>Massage Room 2</td></tr><tr><td>Joplette</td></tr><tr><td>Stibbons</td></tr><tr><td>Rumney</td></tr><tr><td>Pool Table</td></tr><tr><td>Sarwin</td></tr><tr><td>Boothe</td></tr><tr><td>Farrell</td></tr><tr><td>Tennis Court 1</td></tr><tr><td>Snooker Table</td></tr><tr><td>Owen</td></tr><tr><td>Table Tennis</td></tr><tr><td>GUEST</td></tr><tr><td>Jones</td></tr></table>	combined	Tennis Court 2	Worthington-Smyth	Badminton Court	Pinker	Dare	Bader	Mackenzie	Crumpet	Massage Room 1	Squash Court	Tracy	Hunt	Tupperware	Smith	Butters	Rownam	Baker	Gentling	Purview	Coplin	Massage Room 2	Joplette	Stibbons	Rumney	Pool Table	Sarwin	Boothe	Farrell	Tennis Court 1	Snooker Table	Owen	Table Tennis	GUEST	Jones
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Owen																																				
Table Tennis																																				
GUEST																																				
Jones																																				

10. Retrieve the signup date of your last member.

<pre>select max(joindate) as latest from members;</pre>	<table><tr><th>latest</th></tr><tr><td>2012-09-26 18:08:45</td></tr></table>	latest	2012-09-26 18:08:45
latest			
2012-09-26 18:08:45			

11. Figure out how many facilities exist – (produce a total count).

<pre>select count(*) from facilities;</pre>	<table><tr><td>count</td></tr><tr><td>9</td></tr></table>	count	9
count			
9			

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

<pre>select count(*) from facilities where guestcost &gt;= 10;</pre>	<table><tr><td>count</td></tr><tr><td>6</td></tr></table>	count	6
count			
6			

13. Produce a count of the number of recommendations each member has made. Order by number of recommendations.

<pre>select recommendedby as id, count(*) from members where recommendedby is not null group by recommendedby order by recommendedby;</pre>	<table> <tr><td>number of recommendations</td><td>count</td></tr> <tr><td>1</td><td>5</td></tr> <tr><td>2</td><td>3</td></tr> <tr><td>3</td><td>1</td></tr> <tr><td>4</td><td>2</td></tr> <tr><td>5</td><td>1</td></tr> <tr><td>6</td><td>1</td></tr> <tr><td>9</td><td>2</td></tr> <tr><td>11</td><td>1</td></tr> <tr><td>13</td><td>2</td></tr> <tr><td>15</td><td>1</td></tr> <tr><td>16</td><td>1</td></tr> <tr><td>20</td><td>1</td></tr> <tr><td>30</td><td>1</td></tr> </table>	number of recommendations	count	1	5	2	3	3	1	4	2	5	1	6	1	9	2	11	1	13	2	15	1	16	1	20	1	30	1
number of recommendations	count																												
1	5																												
2	3																												
3	1																												
4	2																												
5	1																												
6	1																												
9	2																												
11	1																												
13	2																												
15	1																												
16	1																												
20	1																												
30	1																												

14. Produce a list of the total number of slots booked per facility.

For now, just produce an output table consisting of facility id and slots, sorted by facility id.

```
select facid, sum(slots) as "Tot Slots"
from bookings
group by facid
order by facid;
```

facid	Tot Slots
0	1320
1	1278
2	1209
3	830
4	1404
5	228
6	1104
7	908
8	911

15. 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.

```
select facid, sum(slots) as "Tot Slots"
from bookings
where starttime >= '2012-09-01' and starttime < '2012-10-01'
group by facid
order by sum(slots);
```

facid	Tot Slots
5	122
3	422
7	426
8	471
6	540
2	570
1	588
0	591
4	648

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

*Hint: Extract month from the start time using 'extract()'*

```
select facid, extract(month from starttime) as month, sum(slots) as
"Tot Slots"
from bookings
where starttime >= '2012-01-01' and starttime < '2013-01-01'
group by facid, month
order by facid, month;
```

facid	month	Tot Slots
0	7	270
0	8	459
0	9	591
1	7	207
1	8	493
1	9	588
2	7	180
2	8	459
2	9	570
3	7	104
3	8	304
3	9	422
4	7	264
4	8	492
4	9	648
5	7	24
5	8	82
5	9	122
6	7	164
6	8	400
6	9	540
7	7	156
7	8	326
7	9	426
8	7	117
8	8	322
8	9	471

17. Print out the total number of members who have made at least one booking.

```
select count(distinct memid)
from bookings
```

count  
30

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

```
select facid, sum(slots) as "Tot Slots"  
from bookings  
group by facid  
having sum(slots) > 1000  
order by facid
```

facid	Tot Slots
0	1320
1	1278
2	1209
4	1404
6	1104

**19. Output the facility id that has the highest number of slots booked.**

```
select facid, sum(slots) as "Tot Slots"  
from bookings  
group by facid  
order by sum(slots) desc  
LIMIT 1;
```

facid	Tot Slots
4	1404