

# Database Management with PostgreSQL

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

Query Query History

```
1 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

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?

Query Query History

```
1 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

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

Query Query History

```
1 SELECT name, membercost FROM cd.facilities
2 WHERE membercost > 0
```

	name character varying (100) 🔒	membercost numeric 🔒
1	Tennis Court 1	5
2	Tennis Court 2	5
3	Massage Room 1	35
4	Massage Room 2	35
5	Squash Court	3.5

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.

Query	Query History
1	<code>SELECT facid, name, membercost, monthlymaintenance FROM cd.facilities</code>
2	<code>WHERE membercost &gt; 0 AND membercost &lt; monthlymaintenance/50</code>

  

	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?

Query	Query History
1	<code>SELECT name FROM cd.facilities</code>
2	<code>WHERE name ILIKE '%Tennis%'</code>

  

	name character varying (100) 🔒
1	Tennis Court 1
2	Tennis Court 2
3	Table Tennis

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

Query	Query History
1	<code>SELECT * FROM cd.facilities</code>
2	<code>WHERE facid IN (1, 5)</code>

	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.

Query	Query History
1	<b>SELECT</b> memid, surname, firstname, joindate <b>FROM</b> cd.members
2	<b>WHERE</b> 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

8. How can you produce an ordered list of the first 10 surnames in the members table? The list must not contain duplicates.

Query	Query History
1	<b>SELECT DISTINCT</b> (surname) <b>FROM</b> cd.members
2	<b>ORDER BY</b> surname
3	<b>LIMIT</b> 10

	surname character varying (200)
1	Bader
2	Baker
3	Boothe
4	Butters
5	Coplin
6	Crumpet

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

Query	Query History
1	<b>SELECT</b> joindate <b>FROM</b> cd.members
2	<b>ORDER BY</b> joindate <b>DESC</b>
3	<b>LIMIT</b> 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.

Query	Query History
1	<b>SELECT COUNT</b> (name) <b>FROM</b> cd.facilities
2	<b>WHERE</b> 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.

Query	Query History
1	<b>SELECT</b> facid, <b>SUM</b> (slots) <b>FROM</b> cd.bookings
2	<b>WHERE</b> <b>EXTRACT</b> (MONTH <b>FROM</b> starttime) = 9
3	<b>GROUP BY</b> facid
4	<b>ORDER BY</b> <b>SUM</b> (slots) <b>DESC</b>

	facid integer	sum bigint
1	4	648
2	0	591
3	1	588
4	2	570
5	6	540
6	8	471

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.

Query	Query History
1	<b>SELECT</b> facid, <b>SUM</b> (slots) <b>FROM</b> cd.bookings
2	<b>GROUP BY</b> facid
3	<b>HAVING SUM</b> (slots) > 1000
4	<b>ORDER BY</b> facid

	facid integer	sum 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.

Query	Query History
1	<b>SELECT</b> starttime, name <b>FROM</b> cd.facilities
2	<b>INNER JOIN</b> cd.bookings
3	<b>ON</b> cd.facilities.facid = cd.bookings.facid
4	<b>WHERE</b> starttime >= '2012-09-21' <b>AND</b> starttime < '2012-09-22'
5	<b>AND</b> name <b>ILIKE</b> 'Tennis%'
6	<b>ORDER BY</b> starttime

	starttime 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

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

Query Query History

```
1 SELECT starttime, firstname, surname FROM cd.bookings
2 INNER JOIN cd.members
3 ON cd.bookings.memid = cd.members.memid
4 WHERE firstname = 'David' AND surname = 'Farrell'
5 ORDER BY starttime
```

	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