

May 2, 2024

Task 1: <https://pgexercises.com/questions>

## Retrieve specific columns from a table



### Question

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?

Schema reminder ▲

**cd.members**

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

**cd.bookings**

facid	integer
memid	integer
starttime	timestamp
slots	integer

**cd.facilities**

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

**Expected Results**

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

**Your Answer** ✓

Hint Help Save Run Query

```
select name, membercost from cd.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

# Retrieve everything from a table



## Question

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

Schema reminder ▲

cd.members

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

cd.bookings

facid	integer
memid	integer
starttime	timestamp
slots	integer

cd.facilities

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

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

Your Answer ✓

Hint

Help

Save

Run Query

```
select * from cd.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	35	80	4000	3000

# Control which rows are retrieved



## Question

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

Schema reminder ▲

**cd.members**

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

**cd.bookings**

facid	integer
memid	integer
starttime	timestamp
slots	integer

**cd.facilities**

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

## Expected Results

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
0	Tennis Court 1	5	25	10000	200
1	Tennis Court 2	5	25	8000	200
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

## Your Answer ✓

Hint Help Save Run Query

```
select * from cd.facilities where membercost > 0
```

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
0	Tennis Court 1	5	25	10000	200
1	Tennis Court 2	5	25	8000	200
4	Massage Room 1	35	80	4000	3000
5	Massage Room 2	35	80	4000	3000

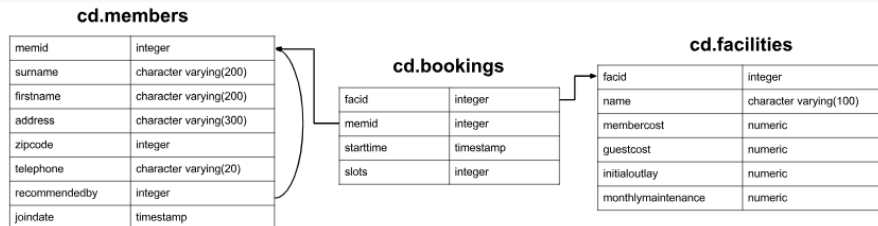
## Control which rows are retrieved - part 2



### Question

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.

Schema reminder



### Expected Results

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

### Your Answer

Hint Help Save Run Query

```
select facid, name, membercost, monthlymaintenance from cd.facilities where membercost != 0 and membercost < ( monthlymaintenance / 50 )
```

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

# Basic string searches



## Question

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

Schema reminder ▲

cd.members

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

cd.bookings

facid	integer
memid	integer
starttime	timestamp
slots	integer

cd.facilities

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
0	Tennis Court 1	5	25	10000	200
1	Tennis Court 2	5	25	8000	200
3	Table Tennis	0	5	320	10

Your Answer ✓

Hint

Help

Save

Run Query

```
select * from cd.facilities where name like '%Tennis%'
```

facid	name	membercost	guestcost	initialoutlay	monthlymaintenance
0	Tennis Court 1	5	25	10000	200
1	Tennis Court 2	5	25	8000	200
3	Table Tennis	0	5	320	10

# Matching against multiple possible values



## Question

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

Schema reminder ▲

cd.members

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

cd.bookings

facid	integer
memid	integer
starttime	timestamp
slots	integer

cd.facilities

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

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

Your Answer ✓

Hint

Help

Save

Run Query

```
select * from cd.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

# Classify results into buckets



## Question

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.

Schema reminder

cd.members

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

cd.bookings

facid	integer
memid	integer
starttime	timestamp
slots	integer

cd.facilities

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

name	cost
Tennis Court 1	expensive
Tennis Court 2	expensive
Badminton Court	cheap
Table Tennis	cheap
Massage Room 1	expensive
Massage Room 2	expensive
Squash Court	cheap
Snooker Table	cheap
Pool Table	cheap

Your Answer

Hint

Help

Save

Run Query

```
SELECT name,
CASE WHEN monthlymaintenance > 100 THEN 'expensive'
      ELSE 'cheap' END AS label
FROM cd.facilities
```

name	label
Tennis Court 1	expensive
Tennis Court 2	expensive
Badminton Court	cheap

Working with dates

Question

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.

Schema reminder

cd.members

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

cd.bookings

facid	integer
memid	integer
starttime	timestamp
slots	integer

cd.facilities

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

memid	surname	firstname	joindate
24	Sarwin	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

Your Answer

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

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



# Removing duplicates, and ordering results



## Question

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

Schema reminder ▲

cd.members

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

cd.bookings

facid	integer
memid	integer
starttime	timestamp
slots	integer

cd.facilities

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

surname
Bader
Baker
Boothe
Butters
Coplin
Crumpet
Dare
Farrell
GUEST
Genting

Your Answer ✓

Hint

Help

Save

Run Query

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

surname
Bader
Baker
Boothe
Butters
Coplin

# Combining results from multiple queries



## Question

You, for some reason, want a combined list of all surnames and all facility names. Yes, this is a contrived example :-). Produce that list!

Schema reminder ▲

**cd.members**

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

**cd.bookings**

facid	integer
memid	integer
starttime	timestamp
slots	integer

**cd.facilities**

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Pinker

Dare

Bader

Mackenzie

Crumpet

Massage Room 1

Squash Court

Tracy

Hunt

Tupperware

Smith

Butters

Rownam

Your Answer ✓

Hint

Help

Save

Run Query

```
select surname from cd.members
union
select name as surname from cd.facilities
```

Squash Court

Tennis Court 1

Pinker

Genting

Bader

Massage Room 1

# Simple aggregation



## Question

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

Schema reminder ▲

**cd.members**

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

**cd.bookings**

facid	integer
memid	integer
starttime	timestamp
slots	integer

**cd.facilities**

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

latest

2012-09-26 18:08:45

Your Answer ✓

Hint Help Save Run Query

```
select max(joindate) as latest
from cd.members
```

latest

2012-09-26 18:08:45

More aggregation

✓

Question

You'd like to get the first and last name of the last member(s) who signed up - not just the date. How can you do that?

Schema reminder ▲

cd.members

memid	integer
surname	character varying(200)
firstname	character varying(200)
address	character varying(300)
zipcode	integer
telephone	character varying(20)
recommendedby	integer
joindate	timestamp

cd.bookings

facid	integer
memid	integer
starttime	timestamp
slots	integer

cd.facilities

facid	integer
name	character varying(100)
membercost	numeric
guestcost	numeric
initialoutlay	numeric
monthlymaintenance	numeric

Expected Results

firstname	surname	joindate
Darren	Smith	2012-09-26 18:08:45

Your Answer ✓

HintHelpSaveRun Query

```
select firstname, surname, joindate from cd.members
order by joindate desc limit 1
```

firstname	surname	joindate
Darren	Smith	2012-09-26 18:08:45