

SELECT * FROM sports

sport_id	name
1	Football
2	Rugby
3	Cricket
4	Tennis
5	Basketball
6	American Football
7	Golf
8	Swimming
9	Athletics
10	Snooker

SELECT * FROM locations

location_id	country	continent
1	United Kingdom	Europe
2	United States	North America
3	Australia	Oceania
4	Canada	North America
5	South Africa	Africa
6	New Zealand	Oceania
7	Hong Kong	Asia
8	India	Asia

SELECT * FROM employees

employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
1	Peter	Ly	peterly@psdc.com	2011-09-17	1	M	120000	1
2	Frank	Lampard	flampard@psdc.com	2014-05-13	1	M	85000	1
3	Jonathan	Kowalski	jkowalski@psdc.com	2012-08-31	8	M	56560	2
4	Claire	Short	cshort@psdc.com	2018-04-01	7	F	41647	6
5	Ronnie	O'Sullivan	rosullivan@psdc.com	2014-12-09	10	M	59840	1
6	Steve	Smith	ssmith@psdc.com	2015-02-28	3	M	52000	3
7	Jimmy	Garappolo	jimmyg@psdc.com	2015-05-15	6	M	67130	2
8	Andre	De Grasse	adegrasse@psdc.com	2017-06-23	9	M	38057	4
9	Tricia	Chan	tchan@psdc.com	2014-01-03	4	F	43000	7
10	Caleb	Dressel	cdressel@psdc.com	2019-05-03	8	M	24848	2
11	Trent	Boult	tboult@psdc.com	2014-09-12	3	M	49230	6
12	Tracy	Austin	taustin@psdc.com	2017-04-05	4	F	55540	2
13	Virat	Kohli	vkohli@psdc.com	2013-09-17	3	M	95644	8
14	Ross	Barkley	rbarkley@psdc.com	2018-02-14	1	M	42110	1
15	Chris	Jordan	cjordan@psdc.com	2017-10-23	3	M	45018	1
16	Gabby	Logan	glogan@psdc.com	2014-03-22	1	F	61000	1
17	Donovan	Mitchell	NULL	2016-11-11	5	M	47000	2
18	Missy	Franklin	mfranklin@psdc.com	2020-01-06	8	F	23568	2
19	Alan	Wyn Jones	awjones@psdc.com	2017-02-16	2	M	39815	1
20	Phil	Mickelson	pmickelson@psdc.com	2012-04-19	7	M	88312	2
21	Lamar	Jackson	ljackson@psdc.com	2018-06-06	6	M	36783	2
22	Zhou	Yuelong	zhoyu@psdc.com	2017-10-18	10	M	52018	7
23	Quinton	de Kock	fdcock@psdc.com	2018-03-12	3	M	53104	5
24	Nail	Robertson	nrobertson@psdc.com	2014-11-10	10	M	73301	3

SELECT

-- Employees who work in the Basketball department

```
SELECT * FROM employees  
WHERE sport_id = 5
```

employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
17	Donovan	Mitchell	NULL	2016-11-11	5	M	47000	2
28	Lisa	Swann	lswann@psdc.com	2013-08-13	5	F	85000	2
44	Sameer	Kassam	skassam@psdc.com	2019-03-23	5	M	27849	8
49	John	Amaechi	jamaechi@psdc.com	2015-01-08	5	M	54030	1
56	Russell	Westbrook	NULL	2016-05-18	5	M	78104	2
58	Aron	Baynes	abaynes@psdc.com	2014-05-20	5	M	64038	6
60	Steven	Adams	sadams@psdc.com	2017-03-01	5	M	45039	6
79	Jamal	Crawford	jcrawford@psdc.com	2016-10-10	5	M	59328	2
84	Jamal	Murray	jmurray@psdc.com	2017-01-12	5	M	32759	4
88	Thabo	Sefolosha	tsefolosha@psdc.com	2017-02-24	5	M	53283	5
103	Andrew	Bogut	abogut@psdc.com	2015-12-14	5	M	64729	3
115	Sarah	De Beer	NULL	2014-07-14	5	F	64288	5
116	Derrick	Rose	drose@psdc.com	2018-07-07	5	M	46384	2
121	Mitchell	Cheung	mcheung@psdc.com	2018-02-08	5	M	46773	7
128	Dwyane	Wade	dwade@psdc.com	2015-11-13	5	M	58104	2
130	Ivan	Lau	ilau@psdc.com	2015-02-24	5	M	70345	7
133	Rosie	Rosenberg	rrosenberg@psdc.com	2017-01-04	5	F	45510	5
141	Andrew	Wiggins	awiggins@psdc.com	2017-06-19	5	M	61932	4
142	Gwyneth	Man	gman@psdc.com	2014-11-10	5	F	75455	7
151	Tristan	Thompson	NULL	2015-12-10	5	M	59875	4
166	Luol	Deng	NULL	2017-05-08	5	M	44593	1
167	Karen	Chow	kchow@psdc.com	2014-10-02	5	F	73022	7
198	Patty	Mills	pmills@psdc.com	2017-05-05	5	F	38758	3

-- Employees who work in Canada

```
SELECT * FROM employees  
WHERE location_id = 4
```

Results Messages									
	employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
	8	Andre	De Grasse	adegrasse@psdc.com	2017-06-23	9	M	38057	4
	42	Christina	Lockett	clockett@psdc.com	2018-04-06	3	F	32049	4
	45	Tiffany	van Beir	tvanbeir@psdc.com	2019-06-15	6	F	24604	4
	52	Alphonso	Davies	adavies@psdc.com	2020-01-26	1	M	23405	4
	64	Cliff	Thorburn	cthorburn@psdc.com	2018-12-13	10	M	41049	4
	84	Jamal	Murray	jmurray@psdc.com	2017-01-12	5	M	32759	4
	90	Milos	Raonic	mraonic@psdc.com	2016-02-06	4	M	64820	4
	91	Denis	Shapovalov	dshapovalov@psdc.com	2017-05-07	4	M	47694	4
	92	Eugenie	Bouchard	ebouchard@psdc.com	2018-01-04	4	F	39591	4
0	102	Mike	Weir	mweir@psdc.com	2016-09-14	7	M	50000	4
1	107	Ryan	Cochrane	rcochrane@psdc.com	2016-12-06	8	M	60000	4
2	141	Andrew	Wiggins	awiggins@psdc.com	2017-06-19	5	M	61932	4
3	151	Tristan	Thompson	NULL	2015-12-10	5	M	59875	4
4	156	Junior	Hoilett	jhoilett@psdc.com	2018-02-03	1	M	37453	4
5	162	Ben	Johnson	bjohnson@psdc.com	2016-04-27	9	M	54449	4
6	188	TJ	Jones	tjones@psdc.com	2019-08-01	6	M	26840	4
7	195	Jamie	Searle	jsearle@psdc.com	2018-11-25	2	M	42314	4
8	200	Josh	Larsen	jlarsen@psdc.com	2016-04-20	2	M	45088	4
9	207	Penry	Oleksiak	poleksiak@psdc.com	2018-04-01	8	F	45623	4
0	212	Danielle	Sweetney	dsweetney@psdc.com	2018-07-01	7	F	29311	4
1	224	Phil	Mack	pmack@psdc.com	2015-02-10	2	M	55781	4
2	225	Kumar	Dharmasena	kdharmasena@psdc.com	2013-12-12	3	M	68921	4
3	228	Jennifer	Abel	jabel@psdc.com	2017-07-24	8	F	47108	4

-- Employees who work in Athletics and are based in New Zealand

SELECT * FROM employees

WHERE location_id = 6

AND sport_id = 9

119 % Results Messages									
	employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
1	100	Robert	Astle	rastle@psdc.com	2017-11-20	9	M	34105	6

--Employees who are female and were hired before 2016

SELECT * FROM employees

WHERE gender = 'F'

AND hire_date < '2016-01-01'

	employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
9	9	Tricia	Chan	tchan@psdc.com	2014-01-03	4	F	43000	7
16	16	Gabby	Logan	glogan@psdc.com	2014-03-22	1	F	61000	1
26	26	Isha	Sharma	isharma@psdc.com	2015-12-12	8	F	49810	8
27	27	Michelle	Wie	mwie@psdc.com	2015-09-18	7	F	53179	2
28	28	Lisa	Swann	lswann@psdc.com	2013-08-13	5	F	85000	2
29	29	Stephanie	Rice	srice@psdc.com	2014-12-16	8	F	64905	3
36	36	Sally	Pearson	spearson@psdc.com	2014-01-19	9	F	68014	3
105	105	Laura	Davies	ldavies@psdc.com	2013-12-12	7	F	70032	1
111	111	Priya	Agrawal	pagrawal@psdc.com	2012-07-06	7	F	86517	8
113	113	Chun	Lee	clee@psdc.com	2013-08-02	1	F	80032	7
115	115	Sarah	De Beer	NULL	2014-07-14	5	F	64288	5
119	119	Yvonne	Yeung	yyeung@psdc.com	2014-11-08	8	F	71440	7
142	142	Gwyneth	Man	gman@psdc.com	2014-11-10	5	F	75455	7
153	153	Stephanie	Yip	syip@psdc.com	2014-05-02	4	F	73840	7
155	155	Khloe	Cheng	kcheng@psdc.com	2013-05-20	1	F	85323	7
167	167	Karen	Chow	kchow@psdc.com	2014-10-02	5	F	73022	7
184	184	Elaine	Chu	echu@psdc.com	2015-02-03	8	F	63015	7
187	187	Princess	Wong	pwong@psdc.com	2015-02-24	1	F	75849	7
189	189	Christina	Tsui	ctsui@psdc.com	2012-12-06	4	F	82240	7
190	190	Jessica	Ennis-Hill	jennishill@psdc.com	2015-03-10	9	F	47931	1
233	233	Ling	Xiaoyu	lxiaoyu@psdc.com	2015-07-11	6	F	61486	7

--Employees who work in Cricket and Tennis and are based in Australia

SELECT * FROM employees

WHERE location_id = 3

AND (sport_id = 3 OR sport_id = 4)

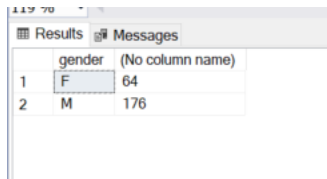
Results Messages									
	employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
1	6	Steve	Smith	ssmith@psdc.com	2015-02-28	3	M	52000	3
2	72	Ashleigh	Barty	abarty@psdc.com	2018-12-01	4	F	24503	3
3	73	Pat	Rafter	prafter@psdc.com	2018-12-01	4	M	28938	3
4	76	Matthew	Wade	NULL	2017-04-01	3	M	29458	3
5	180	Alex	De Minaur	NULL	2020-03-02	4	M	22459	3
6	182	Sam	Stosur	sstosur@psdc.com	2016-01-08	4	F	57035	3
7	186	Brad	Haddin	bhaddin@psdc.com	2013-04-04	3	M	74671	3
8	202	Glenn	McGrath	gmcgrath@psdc.com	2013-11-05	3	M	79001	3
9	222	Alja	Tomljanovic	atomljanovic@psdc.com	2019-11-10	4	F	26000	3

AGGREGATE FUNCTIONS

COUNT

-- Number of males and females who work for the company

```
SELECT gender, COUNT(*)  
FROM employees  
GROUP BY gender
```

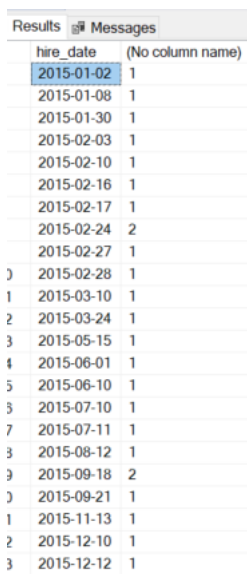


A screenshot of a SQL query results window. The window has two tabs: 'Results' and 'Messages'. The 'Results' tab is active, showing a table with two columns: 'gender' and '(No column name)'. The table contains two rows: one for 'F' with a count of 64, and one for 'M' with a count of 176.

	gender	(No column name)
1	F	64
2	M	176

-- Number of hire dates starting 2015

```
SELECT hire_date, COUNT(*)  
FROM employees WHERE hire_date > '2014-12-31'  
GROUP BY hire_date
```



A screenshot of a SQL query results window. The window has two tabs: 'Results' and 'Messages'. The 'Results' tab is active, showing a table with two columns: 'hire_date' and '(No column name)'. The table contains 25 rows, each representing a hire date in 2015 and the number of employees hired on that date. The first row is highlighted in blue.

	hire_date	(No column name)
	2015-01-02	1
	2015-01-08	1
	2015-01-30	1
	2015-02-03	1
	2015-02-10	1
	2015-02-16	1
	2015-02-17	1
	2015-02-24	2
	2015-02-27	1
0	2015-02-28	1
1	2015-03-10	1
2	2015-03-24	1
3	2015-05-15	1
4	2015-06-01	1
5	2015-06-10	1
6	2015-07-10	1
7	2015-07-11	1
8	2015-08-12	1
9	2015-09-18	2
0	2015-09-21	1
1	2015-11-13	1
2	2015-12-10	1
3	2015-12-12	1

-- Number of employees in each department

```
SELECT sport_id, COUNT(*) AS num_of_employees
FROM employees
GROUP BY sport_id
ORDER BY num_of_employees DESC
```

Results Messages

sport_id	num_of_employees
1	35
3	33
2	30
4	26
5	25
6	21
8	21
7	18
9	17
10	14

--Number of employees in each country

```
SELECT location_id, COUNT(*) AS num_of_employees
FROM employees
GROUP BY location_id
ORDER BY num_of_employees DESC
```

Results Messages

	location_id	num_of_employees
1	1	47
2	2	39
3	3	30
4	7	30
5	4	26
6	5	26
7	6	21
8	8	21

SUM

-- Total amount spent on salaries from the company

```
SELECT SUM(salary) FROM employees
```

Results Messages

(No column name)
1
12643573

-- Sum of salaries from each country

```
SELECT country, SUM(salary) AS salary
FROM employees e, locations l
WHERE e.location_id = l.location_id
GROUP BY country
ORDER BY salary DESC
```

19 %

	country	salary
1	United Kingdom	2689348
2	United States	2088465
3	Hong Kong	1851952
4	Australia	1454094
5	India	1225885
6	South Africa	1201140
7	Canada	1185083
8	New Zealand	947606

--Sum of salaries via each hire date

```
SELECT hire_date, SUM(salary) AS salary
FROM employees
GROUP BY hire_date
ORDER BY salary DESC
```

	hire_date	salary
1	2014-11-10	227110
2	2013-12-12	217951
3	2012-04-19	184353
4	2015-02-24	146194
5	2014-01-19	141039
6	2016-05-18	133482
7	2015-09-18	120300
8	2011-09-17	120000
9	2011-11-01	102930
10	2018-12-01	100769
11	2017-12-12	97014
12	2013-09-17	95644
13	2017-03-24	94139
14	2012-02-06	93103
15	2012-02-04	92201
16	2013-02-01	90000
17	2014-03-05	89573
18	2012-07-27	89542
19	2011-11-06	89320
20	2018-04-01	87270
21	2012-07-06	86517
22	2017-02-02	86153
23	2013-05-20	85323
24	2013-08-13	85000

--Sum of salaries via each sport department

```
SELECT hire_date, SUM(salary) AS salary
FROM employees
GROUP BY hire_date
ORDER BY salary DESC
```

	hire_date	salary
1	2014-11-10	227110
2	2013-12-12	217951
3	2012-04-19	184353
4	2015-02-24	146194
5	2014-01-19	141039
6	2016-05-18	133482
7	2015-09-18	120300
8	2011-09-17	120000
9	2011-11-01	102930
10	2018-12-01	100769
11	2017-12-12	97014
12	2013-09-17	95644
13	2017-03-24	94139
14	2012-02-06	93103
15	2012-02-04	92201
16	2013-02-01	90000
17	2014-03-05	89573
18	2012-07-27	89542
19	2011-11-06	89320
20	2018-04-01	87270
21	2012-07-06	86517
22	2017-02-02	86153
23	2013-05-20	85323
24	2013-08-13	85000

MAX

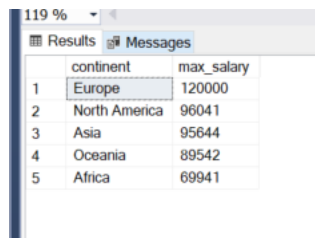
-- Maximum salary by each gender

```
SELECT gender, MAX(salary) AS max_salary
FROM employees
GROUP BY gender
ORDER BY max_salary DESC
```

	gender	max_salary
1	M	120000
2	F	86517

--Maximum salary via each continent

```
SELECT continent, MAX(salary) AS max_salary
FROM employees e, locations l
WHERE e.location_id = l.location_id
GROUP BY continent
ORDER BY max_salary DESC
```



The screenshot shows a database query result window with a zoom level of 119%. It contains a table with two columns: 'continent' and 'max_salary'. The results are ordered by 'max_salary' in descending order. The data is as follows:

	continent	max_salary
1	Europe	120000
2	North America	96041
3	Asia	95644
4	Oceania	89542
5	Africa	69941

--Maximum salary via each sport department

```
SELECT s.name AS sport_dept, MAX(salary) AS max_salary
FROM employees e, sports s
WHERE e.sport_id = s.sport_id
GROUP BY s.name
ORDER BY max_salary DESC
```



The screenshot shows a database query result window with a zoom level of 119%. It contains a table with two columns: 'sport_dept' and 'max_salary'. The results are ordered by 'max_salary' in descending order. The data is as follows:

	sport_dept	max_salary
1	Football	120000
2	Tennis	96041
3	Cricket	95644
4	Golf	93103
5	Snooker	90000
6	Rugby	89542
7	Basketball	85000
8	Athletics	82540
9	Swimming	78584
10	American Football	78354

JOINS & UNIONS

JOINS

-- List of employees in full with their department name and country

```
SELECT employee_id, first_name, last_name, email, hire_date, s.name AS sport_dept, gender, salary, l.country AS country
FROM employees e
JOIN sports s ON e.sport_id = s.sport_id
JOIN locations l ON e.location_id = l.location_id
```

employee_id	first_name	last_name	email	hire_date	sport_dept	gender	salary	country
1	Peter	Ly	peterly@psdc.com	2011-09-17	Football	M	120000	United Kingdom
2	Frank	Lampard	flampard@psdc.com	2014-05-13	Football	M	85000	United Kingdom
3	Jonathan	Kowalski	jkowalski@psdc.com	2012-08-31	Swimming	M	56560	United States
4	Claire	Short	cshort@psdc.com	2018-04-01	Golf	F	41647	New Zealand
5	Ronnie	O'Sullivan	rosullivan@psdc.com	2014-12-09	Snooker	M	59840	United Kingdom
6	Steve	Smith	ssmith@psdc.com	2015-02-28	Cricket	M	52000	Australia
7	Jimmy	Garappolo	jimmyg@psdc.com	2015-05-15	American Football	M	67130	United States
8	Andre	De Grasse	adegrasse@psdc.com	2017-06-23	Athletics	M	38057	Canada
9	Tricia	Chan	tchan@psdc.com	2014-01-03	Tennis	F	43000	Hong Kong
10	Caleb	Dressel	cdressel@psdc.com	2019-05-03	Swimming	M	24848	United States
11	Trent	Boult	tboult@psdc.com	2014-09-12	Cricket	M	49230	New Zealand
12	Tracy	Austin	taustin@psdc.com	2017-04-05	Tennis	F	55540	United States
13	Virat	Kohli	vkohli@psdc.com	2013-09-17	Cricket	M	95644	India
14	Ross	Barkley	rbarkley@psdc.com	2018-02-14	Football	M	42110	United Kingdom
15	Chris	Jordan	cjordan@psdc.com	2017-10-23	Cricket	M	45018	United Kingdom
16	Gabby	Logan	glogan@psdc.com	2014-03-22	Football	F	61000	United Kingdom
17	Donovan	Mitchell	NULL	2016-11-11	Basketball	M	47000	United States
18	Missy	Franklin	mfranklin@psdc.com	2020-01-06	Swimming	F	23568	United States
19	Alan	Wyn Jones	awjones@psdc.com	2017-02-16	Rugby	M	39815	United Kingdom
20	Phil	Mickelson	pmickelson@psdc.com	2012-04-19	Golf	M	88312	United States
21	Lamar	Jackson	ljackson@psdc.com	2018-06-06	American Football	M	36783	United States
22	Zhou	Yuelong	zhouy@psdc.com	2017-10-18	Snooker	M	52018	Hong Kong
23	Quinton	de Kock	fdekock@psdc.com	2018-03-12	Cricket	M	53104	South Africa
24	Neil	Robertson	nrobertson@psdc.com	2014-11-10	Snooker	M	73301	Australia

--List of employees and what continent they work in

```
SELECT first_name, email, continent
FROM employees e, locations l
WHERE e.location_id = l.location_id
AND email IS NOT NULL
```

first_name	email	continent
Peter	peterly@psdc.com	Europe
Frank	flampard@psdc.com	Europe
Jonathan	jkowalski@psdc.com	North America
Claire	cshort@psdc.com	Oceania
Ronnie	rosullivan@psdc.com	Europe
Steve	ssmith@psdc.com	Oceania
Jimmy	jimmyg@psdc.com	North America
Andre	adegrasse@psdc.com	North America
Tricia	tchan@psdc.com	Asia
Caleb	cdressel@psdc.com	North America
Trent	tboult@psdc.com	Oceania
Tracy	taustin@psdc.com	North America
Virat	vkohli@psdc.com	Asia
Ross	rbarkley@psdc.com	Europe
Chris	cjordan@psdc.com	Europe
Gabby	glogan@psdc.com	Europe
Missy	mfranklin@psdc.com	North America
Alan	awjones@psdc.com	Europe
Phil	pmickelson@psdc.com	North America
Lamar	ljackson@psdc.com	North America
Zhou	zhouy@psdc.com	Asia
Quinton	fdekock@psdc.com	Africa
Neil	nrobertson@psdc.com	Oceania
Andrew	androbertson@psdc.com	Europe

--List of employees and what department and country they work in

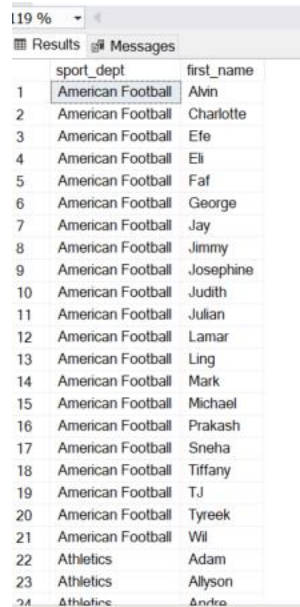
```
SELECT first_name, email, name AS sport_dept, country
FROM employees e, locations l, sports s
WHERE e.location_id = l.location_id
AND e.sport_id = s.sport_id
AND email IS NOT NULL
```

first_name	email	sport_dept	country
Peter	peterly@psdc.com	Football	United Kingdom
Frank	flampard@psdc.com	Football	United Kingdom
Jonathan	jkowalski@psdc.com	Swimming	United States
Claire	cshort@psdc.com	Golf	New Zealand
Ronnie	rosullivan@psdc.com	Snooker	United Kingdom
Steve	ssmith@psdc.com	Cricket	Australia
Jimmy	jimmyg@psdc.com	American Football	United States
Andre	adegrasse@psdc.com	Athletics	Canada
Tricia	tchan@psdc.com	Tennis	Hong Kong
Caleb	cdressel@psdc.com	Swimming	United States
Trent	tboult@psdc.com	Cricket	New Zealand
Tracy	taustin@psdc.com	Tennis	United States
Virat	vkohli@psdc.com	Cricket	India
Ross	rbarkley@psdc.com	Football	United Kingdom
Chris	cjordan@psdc.com	Cricket	United Kingdom
Gabby	glogan@psdc.com	Football	United Kingdom
Missy	mfranklin@psdc.com	Swimming	United States
Alan	awjones@psdc.com	Rugby	United Kingdom
Phil	pmickelson@psdc.com	Golf	United States
Lamar	ljackson@psdc.com	American Football	United States
Zhou	zhouy@psdc.com	Snooker	Hong Kong
Quinton	fdecock@psdc.com	Cricket	South Africa
Neil	nrobertson@psdc.com	Snooker	Australia
Andrew	andherton@psdc.com	Football	United Kingdom

UNION

--Union joining departments, first names and countries

```
SELECT DISTINCT name AS sport_dept, first_name
FROM employees e, sports s
WHERE e.sport_id = s.sport_id
UNION ALL
SELECT name, country
FROM sports s, employees e, locations l
WHERE e.sport_id = s.sport_id
AND e.location_id = l.location_id
```

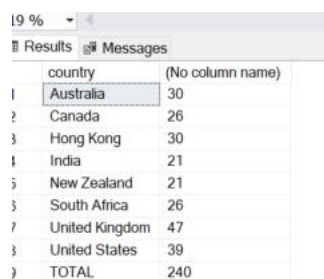


The screenshot shows a database query result with two columns: 'sport_dept' and 'first_name'. The results are displayed in a table with 24 rows. The first 20 rows are for 'American Football' and the last 4 rows are for 'Athletics'.

	sport_dept	first_name
1	American Football	Alvin
2	American Football	Charlotte
3	American Football	Efe
4	American Football	Eli
5	American Football	Faf
6	American Football	George
7	American Football	Jay
8	American Football	Jimmy
9	American Football	Josephine
10	American Football	Judith
11	American Football	Julian
12	American Football	Lamar
13	American Football	Ling
14	American Football	Mark
15	American Football	Michael
16	American Football	Prakash
17	American Football	Sneha
18	American Football	Tiffany
19	American Football	TJ
20	American Football	Tyreek
21	American Football	Wil
22	Athletics	Adam
23	Athletics	Allyson
24	Athletics	Andrew

--Total number of employees

```
SELECT country, COUNT(*)
FROM employees e, locations l
WHERE e.location_id = l.location_id
GROUP BY country
UNION ALL
SELECT 'TOTAL', COUNT(*)
FROM employees
```



The screenshot shows a database query result with two columns: 'country' and '(No column name)'. The results are displayed in a table with 9 rows. The first 8 rows are for different countries and the last row is for the total count.

	country	(No column name)
1	Australia	30
2	Canada	26
3	Hong Kong	30
4	India	21
5	New Zealand	21
6	South Africa	26
7	United Kingdom	47
8	United States	39
9	TOTAL	240

CASE STATEMENTS

--Employee Salaries

```
SELECT first_name, salary,  
CASE
```

```
    WHEN salary < 70000 THEN 'UNDER PAID'
```

```
    WHEN salary > 70000 AND salary < 100000 THEN 'PAID WELL'
```

```
    ELSE 'CORPORATE'
```

```
END AS salary_outcome
```

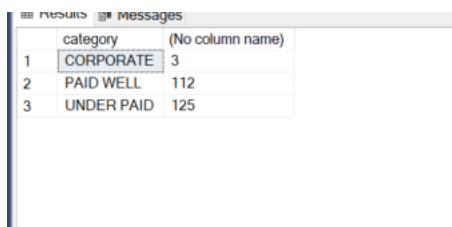
```
FROM employees
```

```
ORDER BY salary DESC
```

first_name	salary	salary_outcome
Peter	120000	CORPORATE
Raheem	102930	CORPORATE
Pete	96041	PAID WELL
Virat	95644	PAID WELL
Peter	93103	PAID WELL
Richard	92201	PAID WELL
Jimmy	90000	PAID WELL
Yuvraj	89573	PAID WELL
Jonah	89542	PAID WELL
Martin	89320	PAID WELL
Phil	88312	PAID WELL
Priya	86517	PAID WELL
Khloe	85323	PAID WELL
Lisa	85000	PAID WELL
Frank	85000	PAID WELL
Hany	84732	PAID WELL
Bruce	84302	PAID WELL
Marco	83904	PAID WELL
Michael	82540	PAID WELL
Christina	82240	PAID WELL
Jamie	80104	PAID WELL
Chun	80032	PAID WELL
Sourav	79107	PAID WELL
Glenn	70001	PAID WELL

--Category count on Underpaid, paid well and Corporate

```
SELECT a.category, COUNT(*) FROM
(SELECT first_name, salary, location_id,
CASE
    WHEN salary < 50000 THEN 'UNDER PAID'
    WHEN salary > 50000 AND salary < 100000 THEN 'PAID WELL'
    ELSE 'CORPORATE'
END AS category
FROM employees
ORDER BY salary DESC) a
GROUP BY a.category
```



The screenshot shows a SQL query result with a table titled 'category'. The table has two columns: 'category' and 'count'. The data is as follows:

category	(No column name)
1	CORPORATE 3
2	PAID WELL 112
3	UNDER PAID 125

```
SELECT
SUM(CASE WHEN salary < 50000 THEN 1 ELSE 0 END) AS under_paid,
SUM(CASE WHEN salary BETWEEN 50000 AND 100000 THEN 1 ELSE 0 END) AS paid_well,
SUM(CASE WHEN salary > 100000 THEN 1 ELSE 0 END) AS corporate
FROM employees
```

Results		Messages	
	under_paid	paid_well	corporate
1	125	113	2

--Transposing number of employees from each sport department

```
SELECT
SUM(CASE WHEN s.name = 'Rugby' THEN 1 ELSE 0 END) AS Rugby_Employees,
SUM(CASE WHEN s.name = 'Tennis' THEN 1 ELSE 0 END) AS Tennis_Employees,
SUM(CASE WHEN s.name = 'Snooker' THEN 1 ELSE 0 END) AS Snooker_Employees,
SUM(CASE WHEN s.name = 'Cricket' THEN 1 ELSE 0 END) AS Cricket_Employees
FROM employees e
JOIN sports s
ON e.sport_id = s.sport_id
```

Results Messages

	Rugby_Employees	Tennis_Employees	Snooker_Employees	Cricket_Employees
1	30	26	14	33

--Number of Employees who work in North America, Oceania and Asia

```
SELECT COUNT(a.location_2) + COUNT(a.location_4) AS North_America,  
COUNT(a.location_3) + COUNT(a.location_6) AS Oceania,  
COUNT(a.location_7) + COUNT(a.location_8) AS Asia  
FROM (  
SELECT first_name,  
(CASE WHEN location_id = 1 THEN (SELECT country FROM locations WHERE location_id =  
1) END) AS location_1,  
(CASE WHEN location_id = 2 THEN (SELECT country FROM locations WHERE location_id =  
2) END) AS location_2,  
(CASE WHEN location_id = 3 THEN (SELECT country FROM locations WHERE location_id =  
3) END) AS location_3,  
(CASE WHEN location_id = 4 THEN (SELECT country FROM locations WHERE location_id =  
4) END) AS location_4,  
(CASE WHEN location_id = 5 THEN (SELECT country FROM locations WHERE location_id =  
5) END) AS location_5,  
(CASE WHEN location_id = 6 THEN (SELECT country FROM locations WHERE location_id =  
6) END) AS location_6,  
(CASE WHEN location_id = 7 THEN (SELECT country FROM locations WHERE location_id =  
7) END) AS location_7,  
(CASE WHEN location_id = 8 THEN (SELECT country FROM locations WHERE location_id =  
8) END) AS location_8,  
(CASE WHEN location_id = 9 THEN (SELECT country FROM locations WHERE location_id =  
9) END) AS location_9,  
(CASE WHEN location_id = 10 THEN (SELECT country FROM locations WHERE location_id =  
10) END) AS location_10  
FROM employees  
      ) a
```

Total:

Results Messages			
	North_America	Oceania	Asia
1	65	51	51

```

SELECT b.North_America + b.Oceania + b.Asia AS total
FROM (
SELECT COUNT(a.location_2) + COUNT(a.location_4) AS North_America,
COUNT(a.location_3) + COUNT(a.location_6) AS Oceania,
COUNT(a.location_7) + COUNT(a.location_8) AS Asia
FROM (
SELECT first_name,
(CASE WHEN location_id = 1 THEN (SELECT country FROM locations WHERE location_id =
1) END) AS location_1,
(CASE WHEN location_id = 2 THEN (SELECT country FROM locations WHERE location_id =
2) END) AS location_2,
(CASE WHEN location_id = 3 THEN (SELECT country FROM locations WHERE location_id =
3) END) AS location_3,
(CASE WHEN location_id = 4 THEN (SELECT country FROM locations WHERE location_id =
4) END) AS location_4,
(CASE WHEN location_id = 5 THEN (SELECT country FROM locations WHERE location_id =
5) END) AS location_5,
(CASE WHEN location_id = 6 THEN (SELECT country FROM locations WHERE location_id =
6) END) AS location_6,
(CASE WHEN location_id = 7 THEN (SELECT country FROM locations WHERE location_id =
7) END) AS location_7,
(CASE WHEN location_id = 8 THEN (SELECT country FROM locations WHERE location_id =
8) END) AS location_8,
(CASE WHEN location_id = 9 THEN (SELECT country FROM locations WHERE location_id =
9) END) AS location_9,
(CASE WHEN location_id = 10 THEN (SELECT country FROM locations WHERE location_id =
10) END) AS location_10
FROM employees
) a
) b

```

Results Messages	
	total
1	167

SUBQUERIES

--Number of employees who earn more than 90,000

SELECT a.employee_name, a.yearly_salary FROM

(SELECT first_name employee_name, salary yearly_salary FROM employees WHERE salary > 90000) a

Results Messages

	employee_name	yearly_salary
1	Peter	120000
2	Virat	95644
3	Raheem	102930
4	Richard	92201
5	Peter	93103
6	Pete	96041

--Employees who work in the Golf department

SELECT * FROM employees

WHERE sport_id IN (SELECT sport_id FROM sports WHERE name = 'Golf')

employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
4	Claire	Short	cshort@psdc.com	2018-04-01	7	F	41647	6
20	Phil	Mickelson	pmickelson@psdc.com	2012-04-19	7	M	88312	2
27	Michelle	Wie	mwie@psdc.com	2015-09-18	7	F	53179	2
38	Ernie	Els	eels@psdc.com	2019-02-08	7	M	34639	5
53	Jason	Day	jday@psdc.com	2017-06-04	7	M	40940	3
74	Ian	Poulter	ipoulter@psdc.com	2016-11-02	7	M	41584	1
75	Zoe	Cheung	zcheung@psdc.com	2019-08-30	7	F	27638	7
96	Paul	Casey	NULL	2016-10-11	7	M	45375	1
102	Mike	Weir	mweir@psdc.com	2016-09-14	7	M	50000	4
105	Laura	Davies	ldavies@psdc.com	2013-12-12	7	F	70032	1
108	Geoff	Ogilvy	govilgy@psdc.com	2017-07-09	7	M	39931	3
111	Priya	Agrawal	pagrawal@psdc.com	2012-07-06	7	F	86517	8
125	Lydia	Ko	lko@psdc.com	2017-08-06	7	F	38699	7
170	Rickie	Fowler	rfowler@psdc.com	2017-12-12	7	M	48723	2
178	Tommy	Fleetwood	tfleetwood@psdc.com	2016-04-30	7	M	53312	1
181	Peter	Aliss	paliss@psdc.com	2012-02-06	7	M	93103	1
212	Danielle	Sweetney	dsweetney@psdc.com	2018-07-01	7	F	29311	4
217	Jordan	Spith	jspieth@psdc.com	2016-07-01	7	M	53499	2

--Employees who work in Canada or Asia and earn more than 50,000

SELECT * FROM employees

WHERE salary > 50000

AND location_id IN (SELECT location_id FROM locations WHERE country = 'Canada'
OR continent = 'Asia')

employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
13	Virat	Kohli	vkohli@psdc.com	2013-09-17	3	M	95644	8
22	Zhou	Yuelong	zhouy@psdc.com	2017-10-18	10	M	52018	7
35	Ravinder	Singh	rsingh@psdc.com	2016-05-18	1	M	55378	8
57	Sushma	Kumble	skumble	2018-03-17	9	F	51402	8
83	Dinesh	Karthik	dkarthik@psdc.com	2015-06-01	3	M	58292	8
90	Milos	Raonic	mraonic@psdc.com	2016-02-06	4	M	64820	4
94	Yuvraj	Singh	ysingh@psdc.com	2014-03-05	3	M	89573	8
95	Mohamed	Shami	mshami@psdc.com	2015-06-10	3	M	70134	8
107	Ryan	Cochrane	rcochrane@psdc.com	2016-12-06	8	M	60000	4
111	Priya	Agrawal	pagrawal@psdc.com	2012-07-06	7	F	86517	8
112	Marco	Fu	mfu@psdc.com	2013-09-07	10	M	83904	7
113	Chun	Lee	cllee@psdc.com	2013-08-02	1	F	80032	7
119	Yvonne	Yeung	yyeung@psdc.com	2014-11-08	8	F	71440	7
126	Joseph	Lam	jlam@psdc.com	2014-12-18	3	M	75398	7
130	Ivan	Lau	ilau@psdc.com	2015-02-24	5	M	70345	7
131	Peter	Leung	pleung@psdc.com	2016-01-15	9	M	58492	7
136	Jayshree	Patel	jpatel@psdc.com	2015-08-12	4	M	54064	8
140	Ranveer	Agashe	ragashe@psdc.com	2014-06-05	2	M	59149	8
141	Andrew	Wiggins	awiggins@psdc.com	2017-06-19	5	M	61932	4
142	Gwyneth	Man	gman@psdc.com	2014-11-10	5	F	75455	7
151	Tristan	Thompson	NULL	2015-12-10	5	M	59875	4
152	Richard	Tse	rtse@psdc.com	2012-02-04	1	M	92201	7
153	Stephanie	Yip	syip@psdc.com	2014-05-02	4	F	73840	7
155	Khina	Chang	kchana@psdc.com	2013-05-20	1	F	85323	7

--Employees who work in USA or India and earn more than 65,000

SELECT * FROM employees

WHERE salary > 65000

AND location_id IN (SELECT location_id FROM locations WHERE country IN ('United States',
'India'))

employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
7	Jimmy	Garappolo	jimmyg@psdc.com	2015-05-15	6	M	67130	2
13	Virat	Kohli	vkohli@psdc.com	2013-09-17	3	M	95644	8
20	Phil	Mickelson	pmickelson@psdc.com	2012-04-19	7	M	88312	2
28	Lisa	Swann	lswann@psdc.com	2013-08-13	5	F	85000	2
37	Seth	McLaughlin	smclaughlin@psdc.com	2014-06-24	10	M	78490	2
56	Russell	Westbrook	NULL	2016-05-18	5	M	78104	2
94	Yuvraj	Singh	ysingh@psdc.com	2014-03-05	3	M	89573	8
95	Mohamed	Shami	mshami@psdc.com	2015-06-10	3	M	70134	8
111	Priya	Agrawal	pagrawal@psdc.com	2012-07-06	7	F	86517	8
157	Michael	Johnson	mjohnson@psdc.com	2014-03-17	9	M	82540	2
193	Ayaan	Singh	psingh@psdc.com	2013-07-19	8	M	78584	8
205	Pete	Sampras	psampras@psdc.com	2012-04-19	4	M	96041	2
206	Carl	Johnson	cjohnson@psdc.com	2015-02-16	3	M	65113	2
209	Eli	Manning	emanning@psdc.com	2014-11-10	6	M	78354	2
236	Sourav	Ganguly	sganguly@psdc.com	2014-08-08	3	M	79107	8
238	Anthony	Davis	adavis@psdc.com	2014-09-13	5	M	70286	2

--Employees salary difference to maximum salary who work in North America and Europe

SELECT first_name, last_name, sport_id, salary, (SELECT MAX(salary) FROM employees) AS max_salary,

(SELECT MAX(salary) FROM employees) - salary AS diff_salary

FROM employees

WHERE location_id IN (SELECT location_id FROM locations WHERE continent IN ('North America', 'Europe'))

	first_name	last_name	sport_id	salary	max_salary	diff_salary
1	Peter	Ly	1	120000	120000	0
2	Frank	Lampard	1	85000	120000	35000
3	Jonathan	Kowalski	8	56560	120000	63440
4	Ronnie	O'Sullivan	10	59840	120000	60160
5	Jimmy	Garappolo	6	67130	120000	52870
6	Andre	De Grasse	9	38057	120000	81943
7	Caleb	Dressel	8	24848	120000	95152
8	Tracy	Austin	4	55540	120000	64460
9	Ross	Barkley	1	42110	120000	77890
10	Chris	Jordan	3	45018	120000	74982
11	Gabby	Logan	1	61000	120000	59000
12	Donovan	Mitchell	5	47000	120000	73000
13	Missy	Franklin	8	23568	120000	96432
14	Alan	Wyn Jones	2	39815	120000	80185
15	Phil	Mickelson	7	88312	120000	31688
16	Lamar	Jackson	6	36783	120000	83217
17	Andrew	Robertson	1	36173	120000	83827
18	Michelle	Wie	7	53179	120000	66821
19	Lisa	Swann	5	85000	120000	35000
20	Ben	Stokes	3	71400	120000	48600
21	Sloane	Stephens	4	55110	120000	64890
22	Millie	Bright	1	36406	120000	83594
23	Seth	McLaughlin	10	78490	120000	41510
24	Christian	Pulisic	1	34930	120000	85070

--Employees who work in the football department and their hire date is later than the hire dates for employees who work in the Snooker department

SELECT * FROM employees

WHERE sport_id = ANY (SELECT sport_id FROM sports WHERE name = 'Football')

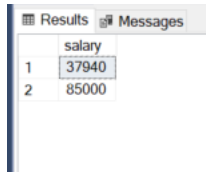
AND hire_date > ALL (SELECT hire_date FROM employees

WHERE sport_id IN (SELECT sport_id FROM sports WHERE sports.name = 'Snooker'))

employee_id	first_name	last_name	email	hire_date	sport_id	gender	salary	location_id
41	Christian	Pulisic	cpulisic@psdc.com	2019-03-21	1	M	34930	2
52	Alphonso	Davies	adavies@psdc.com	2020-01-26	1	M	23405	4
71	Vijay	Jesani	vjesani@psdc.com	2019-02-04	1	M	34094	8

--Most frequent salaries

```
SELECT salary
FROM employees
GROUP BY salary
HAVING COUNT(*) >= ALL(SELECT COUNT(*) FROM employees
                        GROUP BY salary)
```

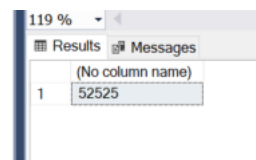


A screenshot of a SQL query results window. The window has two tabs: 'Results' and 'Messages'. The 'Results' tab is active, showing a table with two columns: 'salary' and an index. The table contains two rows: row 1 with salary 37940, and row 2 with salary 85000.

	salary
1	37940
2	85000

--Average salaries not including Max and Min salary

```
SELECT ROUND(AVG(salary))
FROM employees
WHERE salary NOT IN (
    (SELECT MAX(salary) FROM employees),
    (SELECT MIN(salary) FROM employees)
)
```



A screenshot of a SQL query results window. The window has two tabs: 'Results' and 'Messages'. The 'Results' tab is active, showing a table with two columns: '(No column name)' and an index. The table contains one row: row 1 with the value 52525. The window title bar shows '119 %'.

	(No column name)
1	52525

--Salaries that are more than the average based on locations

```
SELECT first_name,salary
FROM employees e1
WHERE salary > (SELECT ROUND(AVG(salary)) FROM employees e2
                WHERE e1.location_id = e2.location_id)
```

```
SELECT first_name, salary,
(SELECT ROUND(AVG(salary)) FROM employees e2
 WHERE e1.location_id = e2.location_id) AS avg_salary
FROM employees e1
ORDER BY avg_salary
```

	first_name	salary
1	Peter	120000
2	Frank	85000
3	Jonathan	56560
4	Ronnie	59840
5	Steve	52000
6	Jimmy	67130
7	Trent	49230
8	Tracy	55540
9	Virat	95644
10	Gabby	61000
11	Phil	88312
12	Quinton	53104
13	Neil	73301
14	Lisa	85000
15	Stephanie	64905
16	Ben	71400
17	Sloane	55110
18	Sally	68014
19	Seth	78490
20	Tyson	58049
21	Laura	49747
22	Raheem	102930
23	Russell	78104
24	Aron	64038

--Salaries that are more than the average based on sport departments

```
SELECT first_name,salary
FROM employees e1
WHERE salary > (SELECT ROUND(AVG(salary)) FROM employees e2
                WHERE e1.sport_id = e2.sport_id)
ORDER BY salary
```

	first_name	salary
1	Peter	120000
2	Raheem	102930
3	Pete	96041
4	Virat	95644
5	Peter	93103
6	Richard	92201
7	Jimmy	90000
8	Yuvraj	89573
9	Jonah	89542
10	Martin	89320
11	Phil	88312
12	Priya	86517
13	Khloe	85323
14	Frank	85000
15	Lisa	85000
16	Harry	84732
17	Bruce	84302
18	Marco	83904
19	Michael	82540
20	Christina	82240
21	Jamie	80104
22	Chun	80032
23	Sourav	79107
24	Glenn	70001

--Sport Departments that have more than 25 employees

```
SELECT name
FROM sports s
WHERE 25 < (SELECT COUNT(*)
            FROM employees e
            WHERE e.sport_id = s.sport_id)
```

	name
1	Football
2	Rugby
3	Cricket
4	Tennis

--Maximum Salaries from each department

```
SELECT name, (SELECT MAX(salary) FROM employees WHERE sport_id = s.sport_id)
FROM sports s
```

name	(No column name)
Football	120000
Rugby	89542
Cricket	95644
Tennis	96041
Basketball	85000
American Football	78354
Golf	93103
Swimming	78584
Athletics	82540
Snooker	90000

-- Maximum Salaries from each country

```
SELECT country, (SELECT MAX(salary) FROM employees WHERE location_id = l.location_id)
FROM locations l
```

country	(No column name)
United Kingdom	120000
United States	96041
Australia	79001
Canada	68921
South Africa	69941
New Zealand	89542
Hong Kong	92201
India	95644

--Minimum Salaries from each department

```
SELECT name, (SELECT MIN(salary) FROM employees WHERE sport_id = s.sport_id)
FROM sports s
```

Results Messages	
name	(No column name)
Football	23405
Rugby	27394
Cricket	27402
Tennis	22459
Basketball	27849
American Football	24604
Golf	27638
Swimming	23568
Athletics	27940
Snooker	31000

--Employees that make the highest and lowest salary from each Sports Department

```
SELECT s.name AS sport_department, first_name, salary,
CASE WHEN salary = department_max THEN 'Highest Salary'
WHEN salary = department_min THEN 'Lowest Salary'
END AS salary_outcome_department
FROM (
SELECT sport_id, first_name, salary,
      (SELECT MAX(salary) FROM employees e2
       WHERE e1.sport_id = e2.sport_id) AS department_max,
      (SELECT MIN(salary) FROM employees e2
       WHERE e1.sport_id = e2.sport_id) AS department_min
FROM employees e1
) a
JOIN sports s ON a.sport_id = s.sport_id
WHERE salary = department_max OR salary = department_min
ORDER BY sport_department, salary DESC
```

RESULTS				
Messages				
	sport_department	first_name	salary	salary_outcome_department
	American Football	Eli	78354	Highest Salary
1	American Football	Tiffany	24604	Lowest Salary
2	Athletics	Michael	82540	Highest Salary
3	Athletics	Caster	27940	Lowest Salary
4	Basketball	Lisa	85000	Highest Salary
5	Basketball	Sameer	27849	Lowest Salary
6	Cricket	Virat	95644	Highest Salary
7	Cricket	Lauren	27402	Lowest Salary
8	Football	Peter	120000	Highest Salary
9	Football	Alphonso	23405	Lowest Salary
10	Golf	Peter	93103	Highest Salary
11	Golf	Zoe	27638	Lowest Salary
12	Rugby	Jonah	89542	Highest Salary
13	Rugby	Eric	27394	Lowest Salary
14	Snooker	Jimmy	90000	Highest Salary
15	Snooker	Ng	31000	Lowest Salary
16	Swimming	Ayaan	78584	Highest Salary
17	Swimming	Missy	23568	Lowest Salary
18	Tennis	Pete	96041	Highest Salary
19	Tennis	Alex	22459	Lowest Salary

--Employees that make the highest and lowest salary from each country

```

SELECT l.country AS country, first_name, salary,
CASE WHEN salary = country_max THEN 'Highest Salary'
WHEN salary = country_min THEN 'Lowest Salary'
END AS salary_outcome_location
FROM (
SELECT location_id, first_name, salary,
      (SELECT MAX(salary) FROM employees e2
       WHERE e1.location_id = e2.location_id) AS country_max,
      (SELECT MIN(salary) FROM employees e2
       WHERE e1.location_id = e2.location_id) AS country_min
FROM employees e1
) a
JOIN locations l ON a.location_id = l.location_id
WHERE salary = country_max OR salary = country_min
ORDER BY country, salary DESC

```

	country	first_name	salary	salary_outcome_location
1	Australia	Glenn	79001	Highest Salary
2	Australia	Alex	22459	Lowest Salary
3	Canada	Kumar	68921	Highest Salary
4	Canada	Alphonso	23405	Lowest Salary
5	Hong Kong	Richard	92201	Highest Salary
6	Hong Kong	Zoe	27638	Lowest Salary
7	India	Virat	95644	Highest Salary
8	India	Sameer	27849	Lowest Salary
9	New Zealand	Jonah	89542	Highest Salary
10	New Zealand	Lauren	27403	Lowest Salary
11	South Africa	Dale	69941	Highest Salary
12	South Africa	Caster	27940	Lowest Salary
13	United Kingdom	Peter	120000	Highest Salary
14	United Kingdom	Francesca	27593	Lowest Salary
15	United States	Pete	96041	Highest Salary
16	United States	Missy	23568	Lowest Salary

--First and last employee hired in the company

```

SELECT first_name, s.name AS sport_department, hire_date, l.country FROM
(SELECT first_name, sport_id, hire_date, e.location_id,
(SELECT MIN(hire_date) FROM employees) AS first_hire,
(SELECT MAX(hire_date) FROM employees) AS last_hire
FROM employees e, locations l
WHERE e.location_id = l.location_id) a
JOIN sports s ON a.sport_id = s.sport_id
JOIN locations l ON a.location_id = l.location_id
WHERE hire_date = first_hire OR hire_date = last_hire

```

	first_name	sport_department	hire_date	country
1	Peter	Football	2011-09-17	United Kingdom
2	Kyle	Tennis	2020-03-02	United Kingdom
3	Alex	Tennis	2020-03-02	Australia

```

SELECT first_name, s.name, hire_date, country
FROM employees e JOIN sports s
ON e.sport_id = s.sport_id

```

```

JOIN locations l ON e.location_id = l.location_id
WHERE hire_date = (SELECT MIN(hire_date) FROM employees e2)
UNION
SELECT first_name, s.name, hire_date, country
FROM employees e JOIN sports s
ON e.sport_id = s.sport_id
JOIN locations l ON e.location_id = l.location_id
WHERE hire_date = (SELECT MAX(hire_date) FROM employees e2)

```

Results Messages				
	first_name	name	hire_date	country
1	Alex	Tennis	2020-03-02	Australia
2	Kyle	Tennis	2020-03-02	United Kingdom
3	Peter	Football	2011-09-17	United Kingdom

Window Functions

--How much the salaries are paid by each sport department

```
SELECT first_name, s.name,  
SUM(salary) OVER(PARTITION BY s.name)  
FROM employees e2  
JOIN sports s ON e2.sport_id = s.sport_id
```

	first_name	name	(no column name)
	Jimmy	American Football	936088
	Lamar	American Football	936088
	Michael	American Football	936088
	Charlotte	American Football	936088
	Tiffany	American Football	936088
	Mark	American Football	936088
	Julian	American Football	936088
	Tyreek	American Football	936088
	Alvin	American Football	936088
3	Josephine	American Football	936088
1	Sneha	American Football	936088
2	Faf	American Football	936088
3	Jay	American Football	936088
4	Efe	American Football	936088
5	TJ	American Football	936088
3	Eli	American Football	936088
7	George	American Football	936088
3	Prakash	American Football	936088
3	Judith	American Football	936088
3	Ling	American Football	936088
1	Wil	American Football	936088
2	Andre	Athletics	863559
3	Sally	Athletics	863559
4	Tyren	Athletics	863559

--Running total of salaries via each hire within the company

```
SELECT first_name, hire_date, salary,  
SUM(salary) OVER(ORDER BY hire_date RANGE BETWEEN UNBOUNDED PRECEDING  
AND CURRENT ROW) AS running_total  
FROM employees
```

	first_name	hire_date	salary	running_total
1	Peter	2011-09-17	120000	120000
2	Raheem	2011-11-01	102930	222930
3	Martin	2011-11-06	89320	312250
4	Richard	2012-02-04	92201	404451
5	Peter	2012-02-06	93103	497554
6	Pete	2012-04-19	96041	681907
7	Phil	2012-04-19	88312	681907
8	Jamie	2012-05-01	80104	762011
9	Priya	2012-07-06	86517	848528
10	Jonah	2012-07-27	89542	938070
11	Jonathan	2012-08-31	56560	994630
12	Christina	2012-12-06	82240	1076870
13	Harry	2013-01-18	84732	1161602
14	Jimmy	2013-02-01	90000	1251602
15	Brad	2013-04-04	74671	1326273
16	Bruce	2013-04-11	84302	1410575
17	Khloe	2013-05-20	85323	1495898
18	Steve	2013-07-16	69850	1565748
19	Ayaan	2013-07-19	78584	1644332
20	Chun	2013-08-02	80032	1724364
21	Lisa	2013-08-13	85000	1809364
22	Marco	2013-09-07	83904	1893268
23	Virat	2013-09-17	95644	1988912
24	Chloe	2013-11-05	70000	2058912

--Salary bracket for employees within the company

```
SELECT first_name, email, sport_id, salary,  
NTILE(5) OVER(PARTITION BY sport_id ORDER BY salary DESC) salary_bracket  
FROM employees
```

	first_name	email	sport_id	salary	salary_bracket
1	Peter	peterly@psdc.com	1	120000	1
2	Raheem	rsterling@psdc.com	1	102930	1
3	Richard	rtse@psdc.com	1	92201	1
4	Khloe	kcheng@psdc.com	1	85323	1
5	Frank	flampard@psdc.com	1	85000	1
6	Harry	hmaguire@psdc.com	1	84732	1
7	Jamie	NULL	1	80104	1
8	Chun	cleee@psdc.com	1	80032	2
9	Princess	pwong@psdc.com	1	75849	2
10	Gabby	glogan@psdc.com	1	61000	2
11	Clint	cdempsey@psdc.com	1	59714	2
12	Harry	hkewell@psdc.com	1	57819	2
13	Aaron	NULL	1	56144	2
14	Alejandro	abedoya@psdc.com	1	55602	2
15	Ravinder	rsingh@psdc.com	1	55378	3
16	Ellen	ewhite@psdc.com	1	47382	3
17	Alex	amorgan@psdc.com	1	47283	3
18	Aaron	amokoena@psdc.com	1	43415	3
19	Anna	agreen@psdc.com	1	42135	3
20	Ross	rbarkley@psdc.com	1	42110	3
21	John	jaloisi@psdc.com	1	41844	3
22	Mark	mschwarzer@psdc.com	1	41114	4
23	Matthew	mluongo@psdc.com	1	38650	4
24	Raena	riames@psdc.com	1	38471	4

--Using First Value for salary for each department

```
SELECT first_name, email, sport_id, salary,  
RANK() OVER(PARTITION BY sport_id ORDER BY salary DESC)  
FROM employees
```

	first_name	email	sport_id	salary	(No column name)
1	Peter	peterly@psdc.com	1	120000	1
2	Raheem	rsterling@psdc.com	1	102930	2
3	Richard	rtse@psdc.com	1	92201	3
4	Khloe	kcheng@psdc.com	1	85323	4
5	Frank	flampard@psdc.com	1	85000	5
6	Harry	hmaguire@psdc.com	1	84732	6
7	Jamie	NULL	1	80104	7
8	Chun	cleee@psdc.com	1	80032	8
9	Princess	pwong@psdc.com	1	75849	9
10	Gabby	glogan@psdc.com	1	61000	10
11	Clint	cdempsey@psdc.com	1	59714	11
12	Harry	hkewell@psdc.com	1	57819	12
13	Aaron	NULL	1	56144	13
14	Alejandro	abedoya@psdc.com	1	55602	14
15	Ravinder	rsingh@psdc.com	1	55378	15
16	Ellen	ewhite@psdc.com	1	47382	16
17	Alex	amorgan@psdc.com	1	47283	17
18	Aaron	amokoena@psdc.com	1	43415	18
19	Anna	agreen@psdc.com	1	42135	19
20	Ross	rbarkley@psdc.com	1	42110	20
21	John	jaloisi@psdc.com	1	41844	21
22	Mark	mschwarzer@psdc.com	1	41114	22
23	Matthew	mluongo@psdc.com	1	38650	23
24	Raena	riames@psdc.com	1	38471	24

--LEAD

```
SELECT first_name, last_name, salary,  
LEAD(salary) OVER() next_salary  
FROM employees
```

	first_name character varying (50)	last_name character varying (50)	salary integer	next_salary integer
1	Peter	Ly	120000	85000
2	Frank	Lampard	85000	56560
3	Jonathan	Kowalski	56560	41647
4	Claire	Short	41647	59840
5	Ronnie	O'Sullivan	59840	52000
6	Steve	Smith	52000	67130
7	Jimmy	Garappolo	67130	38057
8	Andre	De Grasse	38057	43000
9	Tricia	Chan	43000	24848
10	Caleb	Dressel	24848	49230
11	Trent	Boult	49230	55540
12	Tracy	Austin	55540	95644
13	Virat	Kohli	95644	42110
14	Ross	Barkley	42110	45018

```
SELECT first_name, l.country AS sport_dept, salary,  
LEAD(salary) OVER(PARTITION BY l.country ORDER BY salary DESC) next_high_salary  
FROM employees e  
JOIN locations l ON e.location_id = l.location_id
```

	first_name	sport_dept	salary	next_high_salary
1	Glenn	Australia	79001	76776
2	Matt	Australia	76776	74671
3	Brad	Australia	74671	73301
4	Neil	Australia	73301	68014
5	Sally	Australia	68014	64905
6	Stephanie	Australia	64905	64729
7	Andrew	Australia	64729	57819
8	Harry	Australia	57819	57035
9	Sam	Australia	57035	56144
10	Aaron	Australia	56144	52819
11	Ian	Australia	52819	52000
12	Steve	Australia	52000	51089
13	Will	Australia	51089	49800
14	Adam	Australia	49800	47883
15	Cathy	Australia	47883	47381
16	Lote	Australia	47381	41844
17	John	Australia	41844	41114
18	Mark	Australia	41114	40940
19	Jason	Australia	40940	39931
20	Geoff	Australia	39931	39573
21	Brendan	Australia	39573	38764
22	Joe	Australia	38764	38758
23	Patty	Australia	38758	38650

--LAG

```
SELECT first_name, last_name, salary,  
LAG(salary) OVER() previous_salary  
FROM employees
```

character varying (50)	character varying (50)	integer	integer
Peter	Ly	120000	[null]
Frank	Lampard	85000	120000
Jonathan	Kowalski	56560	85000
Claire	Short	41647	56560
Ronnie	O'Sullivan	59840	41647
Steve	Smith	52000	59840
Jimmy	Garappolo	67130	52000
Andre	De Grasse	38057	67130
Tricia	Chan	43000	38057
Caleb	Dressel	24848	43000
Trent	Boult	49230	24848
Tracy	Austin	55540	49230
Virat	Kohli	95644	55540
Ross	Barkley	42110	95644

```
SELECT first_name, s.name AS sport_dept, salary,  
LAG(salary) OVER(PARTITION BY s.name ORDER BY salary DESC) next_high_salary  
FROM employees e  
JOIN sports s ON e.sport_id = s.sport_id
```

first_name	sport_dept	salary	next_high_salary
Eli	American Football	78354	NULL
Jimmy	American Football	67130	78354
Ling	American Football	61486	67130
Mark	American Football	58473	61486
Wil	American Football	54008	58473
Prakash	American Football	51088	54008
Faf	American Football	49325	51088
Alvin	American Football	48291	49325
Julian	American Football	47328	48291
Sneha	American Football	46238	47328
Judith	American Football	46048	46238
George	American Football	39684	46048
Efe	American Football	39371	39684
Jay	American Football	38575	39371
Lamar	American Football	36783	38575
Josephine	American Football	36488	36783
Michael	American Football	29795	36488
Charlotte	American Football	28320	29795
Tyreek	American Football	27859	28320
TJ	American Football	26840	27859
Tiffany	American Football	24604	26840
Michael	Athletics	82540	NULL
Matthew	Athletics	69849	82540
Salv	Athletics	68014	69849

Query executed successfully.