

# SQL Project

## Fundamentals of Structured Query Language -

### 1. Retrieve all details of employees.

```
185 • use hr;
186 #1. Retrieve all details of employees.
187 • SELECT * from employees;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id
100	Steven	King	SKING	515.123.4567	1987-06-17	AD_PRES	24000	NULL	NULL
101	Neena	Kochhar	NKOCHHAR	515.123.4568	1989-09-21	AD_VP	17000	NULL	100
102	Lex	De Haan	LDEHAAN	515.123.4569	1993-01-13	AD_VP	17000	NULL	100
103	Alexander	Hunold	AHUNOLD	590.423.4567	1990-01-03	IT_PROG	9000	NULL	102
104	Bruce	Ernst	BERNST	590.423.4568	1991-05-21	IT_PROG	6000	NULL	103
105	David	Austin	DAUSTIN	590.423.4569	1997-06-25	IT_PROG	4800	NULL	103
106	Valli	Pataballa	VPATABAL	590.423.4560	1998-02-05	IT_PROG	4800	NULL	103

employees 1 x | Apply | Revert

### 2. Display the first name, last name, and email of all employees.

```
188 #2. Display the first name, last name, and email of all employees.
189 • SELECT first_name,last_name ,email from employees;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

first_name	last_name	email
Steven	King	SKING
Neena	Kochhar	NKOCHHAR
Lex	De Haan	LDEHAAN
Alexander	Hunold	AHUNOLD
Bruce	Ernst	BERNST
David	Austin	DAUSTIN
Valli	Pataballa	VPATABAL
Diana	Lorentz	DLORENTZ

employees 2 x | Read Only

### 3. Retrieve the distinct job titles from the jobs table.

```
190 #3. Retrieve the distinct job titles from the jobs table.
191 • SELECT DISTINCT job_title from jobs;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

job_title
Public Accountant
Accounting Manager
Administration Assistant
President
Administration Vice President
Accountant
Finance Manager
Human Resources Representative

jobs 5 x | Read Only

### 4. Find the total number of employees in the company.

192 #4. Find the total number of employees in the company.

193 • `SELECT COUNT(employee_id) AS total_employees FROM employees;`

Result Grid

total_employees
107

Result 13 x Read Only

5. Retrieve the employees who were hired after January 1, 2015.

194 #5. Retrieve the employees who were hired after January 1, 2015.

195 • `SELECT *`

196 `FROM employees`

197 `WHERE hire_date > '2015-01-01';`

Result Grid

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid

## Fundamentals of Structured Query Language - 2

6. List all employees who have a salary greater than 5000.

198 #6. List all employees who have a salary greater than 5000.

199 • `SELECT *`

200 `FROM employees`

201 `WHERE salary > 5000;`

Result Grid

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager
100	Steven	King	SKING	515.123.4567	1987-06-17	AD_PRES	24000	NULL	NULL
101	Neena	Kochhar	NKOCHHAR	515.123.4568	1989-09-21	AD_VP	17000	NULL	100
102	Lex	De Haan	LDEHAAN	515.123.4569	1993-01-13	AD_VP	17000	NULL	100
103	Alexander	Hunold	AHUNOLD	590.423.4567	1990-01-03	IT_PROG	9000	NULL	102
104	Bruce	Ernst	BERNST	590.423.4568	1991-05-21	IT_PROG	6000	NULL	103

employees 18 x Apply Revert

7. Retrieve employees with job titles containing the word 'Manager.'

```

202  #7.Retrieve employees with job titles containing the word 'Manager.'
203 • SELECT *
204 FROM jobs
205 WHERE job_title = 'Manager';

```

job_id	job_title	min_salary	max_salary
NULL	NULL	NULL	NULL

jobs 22 x

8. Retrieve all employees whose first name starts with 'A' and ends with 'n.'

```

206 #8. Retrieve all employees whose first name starts with 'A' and ends with 'n.'
207 • SELECT *
208 FROM employees
209 WHERE first_name LIKE 'A%n';

```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id
158	Allan	McEwen	AMCEWEN	011.44.1345.829268	1996-08-01	SA_REP	9000	0.35	146
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

employees 23 x

9. Display the employees who do not have a commission.

```

210 # 9. Display the employees who do not have a commission.
211 • SELECT *
212 FROM employees
213 WHERE commission_pct IS NULL OR commission_pct = 0;

```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id
100	Steven	King	SKING	515.123.4567	1987-06-17	AD_PRES	24000	NULL	NULL
101	Neena	Kochhar	NKOCHHAR	515.123.4568	1989-09-21	AD_VP	17000	NULL	100
102	Lex	De Haan	LDEHAAN	515.123.4569	1993-01-13	AD_VP	17000	NULL	100
103	Alexander	Hunold	AHUNOLD	590.423.4567	1990-01-03	IT_PROG	9000	NULL	102
104	Bruce	Ernst	BERNST	590.423.4568	1991-05-21	IT_PROG	6000	NULL	103

employees 24 x

10. Retrieve the top 5 highest-paid employees.

```

214 #10.Retrieve the top 5 highest-paid employees.
215 • SELECT *
216 FROM employees
217 ORDER BY salary DESC
218 LIMIT 5;

```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id
100	Steven	King	SKING	515.123.4567	1987-06-17	AD_PRES	24000	NULL	NULL
101	Neena	Kochhar	NKOCHHAR	515.123.4568	1989-09-21	AD_VP	17000	NULL	100
102	Lex	De Haan	LDEHAAN	515.123.4569	1993-01-13	AD_VP	17000	NULL	100
145	John	Russell	JRUSSEL	011.44.1344.429268	1996-10-01	SA_MAN	14000	0.4	100
146	Karen	Partners	KPARTNFR	011.44.1344.467268	1997-01-05	SA_MAN	13500	0.3	100

## SQL Functions

11. Find the average salary of all employees.

```

219 #11. Find the average salary of all employees.
220 • SELECT AVG(salary) AS average_salary
221 FROM employees;

```

average_salary
6461.682242990654

12. Retrieve the total number of employees working in each department.

```

222 #12. Retrieve the total number of employees working in each department.
223 • SELECT department_id, COUNT(*) AS total_employees
224 FROM employees
225 GROUP BY department_id;

```

department_id	total_employees
10	1
20	2
30	6
40	1
50	45

13. Display the employee's first name and the length of their first name.

```

226 #13. Display the employee's first name and the length of their first name.
227 • SELECT first_name, LENGTH(first_name) AS name_length
228 FROM employees;

```

first_name	name_length
Steven	6
Neena	5
Lex	3
Alexander	9
Bruce	5
David	5

Result 28 x

14. Convert the hire\_date of employees to display only the year.

```

229 #14. Convert the hire_date of employees to display only the year.
230 • SELECT first_name, LAST_NAME, YEAR(hire_date) AS hire_year
231 FROM employees;

```

first_name	LAST_NAME	hire_year
Steven	King	1987
Neena	Kochhar	1989
Lex	De Haan	1993
Alexander	Hunold	1990
Bruce	Ernst	1991
David	Austin	1997

Result 29 x

15. Retrieve the minimum and maximum salary for each job title.

```

232 #15. Retrieve the minimum and maximum salary for each job title.
233 • SELECT job_title, MIN(min_salary) , MAX(max_salary)
234 FROM jobs
235 GROUP BY job_title;

```

job_title	MIN(min_salary)	MAX(max_salary)
Public Accountant	4200	9000
Accounting Manager	8200	16000
Administration Assistant	3000	6000
President	20000	40000
Administration Vice President	15000	30000
Accountant	4700	9000

Result 33 x

SQL Tables, Joins

16. Retrieve the employee names along with their department names.

```

237  #16. Retrieve the employee names along with their department names.
238  SELECT e.first_name, e.last_name, d.department_name
239  FROM employees e
240  JOIN departments d ON e.department_id = d.department_id;
241
242

```

first_name	last_name	department_name
Jennifer	Whalen	Administration
Michael	Hartstein	Marketing
Pat	Fay	Marketing
Den	Raphaely	Purchasing
Alexander	Khoo	Purchasing
Shelli	Baird	Purchasing

Result 34 x Read Only

17. List the employees along with their job titles and the location of their department.

```

241  #17. List the employees along with their job titles and the location of their department.
242  • SELECT e.first_name, e.last_name, j.job_title, l.city
243  FROM employees e
244  JOIN jobs j ON e.job_id = j.job_id
245  JOIN departments d ON e.department_id = d.department_id
246  JOIN locations l ON d.location_id = l.location_id;
247

```

first_name	last_name	job_title	city
William	Gietz	Public Accountant	Seattle
Shelley	Higgins	Accounting Manager	Seattle
Jennifer	Whalen	Administration Assistant	Seattle
Steven	King	President	Seattle
Neena	Kochhar	Administration Vice President	Seattle
Ilex	De Haan	Administration Vice President	Seattle

Result 42 x Read Only

18. Retrieve the department names along with the count of employees in each department.

```

251  #18. Retrieve the department names along with the count of employees in each department.
252  • SELECT d.department_name, COUNT(e.employee_id) AS employee_count
253  FROM departments d
254  LEFT JOIN employees e ON d.department_id = e.department_id
255  GROUP BY d.department_name;
256

```

department_name	employee_count
Administration	1
Marketing	2
Purchasing	6
Human Resources	1
Shipping	45
IT	5

Result 43 x Read Only

19. Find employees who have the same job as their manager.

```

258 #19. Find employees who have the same job as their manager.
259 • SELECT e.first_name, e.last_name, e.job_id, m.first_name AS manager_name
260 FROM employees e
261 JOIN employees m ON e.manager_id = m.employee_id
262 WHERE e.job_id = m.job_id;
263

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
first_name	last_name	job_id	manager_name
Bruce	Ernst	IT_PROG	Alexander
David	Austin	IT_PROG	Alexander
Valli	Pataballa	IT_PROG	Alexander
Diana	Lorentz	IT_PROG	Alexander

Result 44 × Read Only

20. Display the names of employees who worked in different jobs in the past (use job\_history).

```

266 #20. Display the names of employees who worked in different jobs in the past (use
267 #job_history).
268 • SELECT DISTINCT e.first_name, e.last_name
269 FROM employees e
270 JOIN job_history jh ON e.employee_id = jh.employee_id
271 WHERE e.job_id <> jh.job_id;
272

```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	first_name	last_name
▶	Neena	Kochhar
	Jennifer	Whalen
	Lex	De Haan
	Michael	Hartstein
	Jonathon	Taylor
	Den	Ranhaelv

Result 45 ×

Result Grid

Form Editor

Read Only