

SQL Query Exercises - Chapter 1

Sample Database Tables

employees table:

id	name	department	salary	age
1	John Smith	Sales	50000	28
2	Alice Johnson	IT	65000	32
3	Bob Wilson	Sales	45000	25
4	Carol Brown	HR	55000	35
5	David Lee	IT	70000	29

products table:

id	name	category	price	stock
1	Laptop	Electronics	999.99	50
2	Phone	Electronics	599.99	100
3	Desk	Furniture	299.99	25
4	Chair	Furniture	149.99	40
5	Monitor	Electronics	249.99	75

Exercise 1: Basic SELECT

Write a query to select all columns from the employees table.

```
-- TODO: Write your query here
```

Expected Result: All employee records with all columns.

Exercise 2: Specific Columns

Write a query to select only the name and salary columns from the employees table.

```
-- TODO: Write your query here
```

Expected Result: Names and salaries of all employees.

Exercise 3: Filtering Data

Write a query to find all employees in the 'IT' department.

```
-- TODO: Write your query here
```

Expected Result: Alice Johnson and David Lee.

Exercise 4: Salary Filter

Write a query to find all employees with salary greater than 55000.

```
-- TODO: Write your query here
```

Expected Result: Alice Johnson and David Lee.

Exercise 5: Sorting Results

Write a query to select all employees, sorted by salary in descending order.

```
-- TODO: Write your query here
```

Expected Result: Employees listed from highest to lowest salary.

Exercise 6: Pattern Matching

Write a query to find all products whose name contains 'o'.

```
-- TODO: Write your query here
```

Expected Result: Phone and Monitor.

Exercise 7: Range Query

Write a query to find products with price between 200 and 600.

```
-- TODO: Write your query here
```

Expected Result: Phone, Desk, Chair, and Monitor.

Exercise 8: Count and Group

Write a query to count how many employees are in each department.

```
-- TODO: Write your query here
```

Expected Result: Sales: 2, IT: 2, HR: 1.

Solutions

Exercise 1 Solution:

```
SELECT * FROM employees;
```

Exercise 2 Solution:

```
SELECT name, salary FROM employees;
```

Exercise 3 Solution:

```
SELECT * FROM employees WHERE department = 'IT';
```

Exercise 4 Solution:

```
SELECT * FROM employees WHERE salary > 55000;
```

Exercise 5 Solution:

```
SELECT * FROM employees ORDER BY salary DESC;
```

Exercise 6 Solution:

```
SELECT * FROM products WHERE name LIKE '%o%';
```

Exercise 7 Solution:

```
SELECT * FROM products WHERE price BETWEEN 200 AND 600;
```

Exercise 8 Solution:

```
SELECT department, COUNT(*) as employee_count  
FROM employees  
GROUP BY department;
```

Bonus Exercises

Bonus 1: Complex Filtering

Find all employees in Sales or IT departments with salary > 50000.

```
SELECT * FROM employees  
WHERE (department = 'Sales' OR department = 'IT')  
AND salary > 50000;
```

Bonus 2: Top Results

Find the top 3 most expensive products.

```
SELECT * FROM products  
ORDER BY price DESC  
LIMIT 3;
```

Bonus 3: Average Calculation

Find the average salary of all employees.

```
SELECT AVG(salary) as average_salary  
FROM employees;
```