Chapter 4
SQL Exercise

Department: Computer
Course: DBMS
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Discussion Questions (SQL based)

Exercise

Test your knowledge:

1. The following SELECT statement executes successfully:

```
SELECT last_name, job_id, salary AS Sal
FROM   employees;
```

   True/False

2. The following SELECT statement executes successfully:

```
SELECT *
FROM   job_grades;
```

   True/False

Exercise

Test your knowledge:

1. The following SELECT statement executes successfully:

```
SELECT last_name, job_id, salary AS Sal
FROM   employees;
```

True/False

2. The following SELECT statement executes successfully:

```
SELECT *
FROM   job_grades;
```

True/False

Exercise

Employees (employee_id, First_name, Last_name, address, DOB, salary, Dnumber)

3. There are four coding errors in the following statement. Can you identify them?

```
SELECT     employee_id, last_name
sal x 12   ANNUAL SALARY
FROM       employees;
```

Exercise

Employees (employee_id, First_name, Last_name, address, DOB, salary, Dnumber)

3. There are four coding errors in the following statement. Can you identify them?

```
SELECT     employee_id, last_name
sal x 12   ANNUAL SALARY
FROM       employees;
```

- The EMPLOYEES table does not contain a column called sal. The column is called SALARY.
- The multiplication operator is *, not x, as shown in line 2.
- The ANNUAL SALARY alias cannot include spaces. The alias should read ANNUAL_SALARY or should be enclosed in double quotation marks.
- A comma is missing after the LAST_NAME column.

Exercise

1. Because of budget issues, the HR department needs a report that displays the last name and salary of employees earning more than $12,000.

2. Create a report that displays the last name and department number for employee number 176.

6. Your first task is to determine the structure of the DEPARTMENTS table and its contents.

Exercise

1. Because of budget issues, the HR department needs a report that displays the last name and salary of employees earning more than $12,000.

```
SELECT  last_name, salary
FROM    employees
WHERE   salary > 12000;
```

2. Create a report that displays the last name and department number for employee number 176.

6. Your first task is to determine the structure of the DEPARTMENTS table and its contents.

Exercise

1. Because of budget issues, the HR department needs a report that displays the last name and salary of employees earning more than $12,000.

```
SELECT  last_name, salary
FROM    employees
WHERE   salary > 12000;
```

2. Create a report that displays the last name and department number for employee number 176.

```
SELECT  last_name, department_id
FROM    employees
WHERE   employee_id = 176;
```

6. Your first task is to determine the structure of the DEPARTMENTS table and its contents.

Exercise

1. Because of budget issues, the HR department needs a report that displays the last name and salary of employees earning more than $12,000.

```
SELECT  last_name, salary
FROM    employees
WHERE   salary > 12000;
```

2. Create a report that displays the last name and department number for employee number 176.

```
SELECT  last_name, department_id
FROM    employees
WHERE   employee_id = 176;
```

6. Your first task is to determine the structure of the DEPARTMENTS table and its contents.

```
DESCRIBE departments

SELECT *
FROM   departments;
```

Exercise

3. The HR department needs to find out salary for all employees whose salary is not in the 5000 and 12000 range.

4. Create a report to display the last name, job ID, and start date for the employees whose last names are Matos and Taylor. Order the query in ascending order by start date.

5. Display the last name and department number of all employees in departments 20 or 50 in ascending alphabetical order by name.

Exercise

3. The HR department needs to find out salary for all employees whose salary is not in the 5000 and 12000 range.

```
SELECT  last_name, salary
FROM    employees
WHERE   salary NOT BETWEEN 5000 AND 12000;
```

4. Create a report to display the last name, job ID, and start date for the employees whose last names are Matos and Taylor. Order the query in ascending order by start date.

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WHERE   salary NOT BETWEEN 5000 AND 12000;
```

4. Create a report to display the last name, job ID, and start date for the employees whose last names are Matos and Taylor. Order the query in ascending order by start date.

```
SELECT   last_name, job_id, hire_date
FROM     employees
WHERE    last_name IN ('Matos', 'Taylor')
ORDER BY hire_date;
```

5. Display the last name and department number of all employees in departments 20 or 50 in ascending alphabetical order by name.

Exercise

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```
SELECT   last_name, job_id, hire_date
FROM     employees
WHERE    last_name IN ('Matos', 'Taylor')
ORDER BY hire_date;
```

5. Display the last name and department number of all employees in departments 20 or 50 in ascending alphabetical order by name.

```
SELECT   last_name, department_id
FROM     employees
WHERE    department_id IN (20, 50)
ORDER BY last_name ASC;
```

Exercise

7. The HR department needs a report that displays the last name and hire date for all employees who were hired in 1994.

8. Create a report to display the last name and job title of all employees who do not have a manager.

9. Display the last name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.

Exercise

7. The HR department needs a report that displays the last name and hire date for all employees who were hired in 1994.

```
SELECT   last_name, hire_date
FROM     employees
WHERE    hire_date LIKE '%94';
```

8. Create a report to display the last name and job title of all employees who do not have a manager.

9. Display the last name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.

Exercise

7. The HR department needs a report that displays the last name and hire date for all employees who were hired in 1994.

```
SELECT   last_name, hire_date
FROM     employees
WHERE    hire_date LIKE '%94';
```

8. Create a report to display the last name and job title of all employees who do not have a manager.

```
SELECT   last_name, job_id
FROM     employees
WHERE    manager_id IS NULL;
```

9. Display the last name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.

Exercise

7. The HR department needs a report that displays the last name and hire date for all employees who were hired in 1994.

```
SELECT   last_name, hire_date
FROM     employees
WHERE    hire_date LIKE '%94';
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```
SELECT   last_name, job_id
FROM     employees
WHERE    manager_id IS NULL;
```

9. Display the last name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.

```
SELECT   last_name, salary, commission_pct
FROM     employees
WHERE    commission_pct IS NOT NULL
ORDER BY salary DESC, commission_pct DESC;
```

Questions for Students (In Class)

1. The HR department needs a query to display all unique job codes from the EMPLOYEES table.

2. list the last name and salary of employees who earn between $5,000 and $12,000, and are in department 20 or 50. Label the columns Employee and Monthly Salary, respectively.

3. The HR department wants to run reports based on a manager. Create a query that generates the employee ID, last name, salary, and department for that manager whose id is 10. The HR department wants the ability to sort the report on a salary basis.

4. Display all employee last names in which the third letter of the name is a.

5. Display the last name, job, and salary for all employees whose job is either that of a sales representative or a stock clerk, and whose salary is not equal to $2,500, $3,500, or $7,000.

6. Display the last name, salary, and commission for all employees whose commission amount is 20%.

Questions for Students (In Class)

7. Write a query to display the current date. Label the column Date.

8. Add a new row to your DEPARTMENTS table. Add Education as department number 500.

9. Remove the row that you inserted into the DEPARTMENTS table in step 8 and save the changes.

10. Connect as user ora21 and revoke the SELECT privilege from user ora22.

11. Create the DEPT2 table based on the following table instance chart. Confirm that the table is created.

Column Name	Data type	Length
ID	NUMBER	7
NAME	VARCHAR2	25

12. Modify the EMP2 table to allow for longer employee last names. Confirm your modification.

13. Drop the EMP2 table.

14.Drop the FIRST_NAME column from the EMPLOYEES2 table. Confirm your modification by checking the description of the table.

Solutions:

1.

```
Select Distinct job_id from  EMPLOYEES;
```

2.

```
SELECT last_name "Employee", salary "Monthly Salary"
FROM employees
WHERE salary BETWEEN 5000 AND 12000 AND
department_id IN (20, 50);
```

3.

```
SELECT employee_id, last_name, salary, department_id
FROM employees
WHERE manager_id = 10
ORDER BY salary;
```

4.

```
SELECT last_name
FROM  employees
WHERE last_name LIKE '__a%' ;
```

Solutions:

5.

```
SELECT
last_name, job_id, salary
FROM employees
WHERE job_id IN ('SA_REP', 'ST_CLERK') AND
salary NOT IN (2500, 3500, 7000);
```

6.

```
SELECT last_name , salary , commission_pct
FROM  employees
WHERE  commission_pct = 0.20 ;
```

7.

```
SELECT sysdate "Date"
FROM dual;
```

8.

```
INSERT INTO departments (department_id, department_name)
VALUES (500, 'Education');

COMMIT;
```

Solutions:

9.

```
DELETE FROM departments
WHERE department_id = 500;

COMMIT;
```

10.

```
REVOKE SELECT ON departments
FROM ora22;
```

11.

```
CREATE TABLE dept2
(id NUMBER(7),
name VARCHAR2(25));

DESCRIBE dept2 ;
```

Solutions:

12.

```
ALTER TABLE emp2
MODIFY (last_name VARCHAR2(50));

DESCRIBE emp2;
```

13.

```
DROP TABLE emp2;
```

14.

```
ALTER TABLE employees2
DROP COLUMN first_name;

DESCRIBE employees2 ;
```

Thank you