4. Find the highest, lowest, sum, and average salary of all employees. Label the columns Maximum, Minimum, Sum, and Average, respectively. Round your results to the nearest whole number

```
SELECT
    ROUND(MAX(salary)) AS Maximum,
    ROUND(MIN(salary)) AS Minimum,
    ROUND(SUM(salary)) AS Sum,
    ROUND(AVG(salary)) AS Average
FROM employees;
```

Results | Explain | Describe | Saved SQL | History

MAXIMUM	MINIMUM	SUM	AVERAGE
60000	4000	224450	14963

5. Modify the above query to display the minimum, maximum, sum, and average salary for each job type.

```
SELECT
    job_id,
    ROUND(MIN(salary)) AS Minimum,
    ROUND(MAX(salary)) AS Maximum,
    ROUND(SUM(salary)) AS Sum,
    ROUND(AVG(salary)) AS Average
FROM employees
GROUP BY job_id;
```

Results | Explain | Describe | Saved SQL | History

JOB_ID	MINIMUM	MAXIMUM	SUM	AVERAGE
HR_REP	6000	9000	15000	7500
AD_VP	17000	17000	17000	17000
ST_CLERK	10000	10000	10000	10000
AD_ASST	4000	4250	12450	4150
SA_MAN	12000	12000	24000	12000
IT_PROG	7500	60000	67500	33750
SA_REP	7500	55000	78500	19625

6.Write a query to display the number of people with the same job. Generalize the query so that the user in the HR department is prompted for a job title.

```
SELECT
    job_id,
    COUNT(*) AS Number_of_People
FROM employees
WHERE UPPER(job_id) = UPPER(:job_title)
GROUP BY job_id;
```

Results | Explain | Describe | Saved SQL | History

JOB_ID	NUMBER_OF_PEOPLE
IT_PROG	2

7. Determine the number of managers without listing them. Label the column Number of Managers. Hint: Use the MANAGER_ID column to determine the number of managers.

```sql
SELECT
    COUNT(DISTINCT manager_id) AS Number_of_Managers
FROM employees
WHERE manager_id IS NOT NULL;
```

Results | Explain | Describe | Saved SQL | History

NUMBER_OF_MANAGERS
6

8. Find the difference between the highest and lowest salaries. Label the column DIFFERENCE.

```sql
SELECT
    (MAX(salary) - MIN(salary)) AS Difference
FROM employees;
```

Results | Explain | Describe | Saved SQL | History

DIFFERENCE
56000

9. Create a report to display the manager number and the salary of the lowest-paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is $6,000 or less. Sort the output in descending order of salary.

```sql
SELECT
    manager_id,
    MIN(salary) AS Lowest_Salary
FROM employees
WHERE manager_id IS NOT NULL
GROUP BY manager_id
HAVING MIN(salary) > 6000
ORDER BY Lowest_Salary DESC;
```

Results | Explain | Describe | Saved SQL | History

MANAGER_ID	LOWEST_SALARY
101	17000
105	12000
1000	10000
112	8000

10. Create a query to display the total number of employees and, of that total, the number of employees hired in 1995, 1996, 1997, and 1998. Create appropriate column headings.

```sql
SELECT
    COUNT(*) AS Total_Employees,
    SUM(CASE WHEN EXTRACT(YEAR FROM hire_date) = 1995 THEN 1 ELSE 0 END) AS Hired_1995,
    SUM(CASE WHEN EXTRACT(YEAR FROM hire_date) = 1996 THEN 1 ELSE 0 END) AS Hired_1996,
    SUM(CASE WHEN EXTRACT(YEAR FROM hire_date) = 1997 THEN 1 ELSE 0 END) AS Hired_1997,
    SUM(CASE WHEN EXTRACT(YEAR FROM hire_date) = 1998 THEN 1 ELSE 0 END) AS Hired_1998
FROM employees;
```

Results | Explain | Describe | Saved SQL | History

TOTAL_EMPLOYEES	HIRED_1995	HIRED_1996	HIRED_1997	HIRED_1998
15	0	0	0	0

11. Create a matrix query to display the job, the salary for that job based on department number, and the total salary for that job, for departments 20, 50, 80, and 90, giving each column an appropriate heading.

```sql
SELECT
    job_id,
    SUM(CASE WHEN department_id = 20 THEN salary ELSE 0 END) AS Dept20,
    SUM(CASE WHEN department_id = 50 THEN salary ELSE 0 END) AS Dept50,
    SUM(CASE WHEN department_id = 80 THEN salary ELSE 0 END) AS Dept80,
    SUM(CASE WHEN department_id = 90 THEN salary ELSE 0 END) AS Dept90,
    SUM(salary) AS Total_Salary
FROM employees
WHERE department_id IN (20, 50, 80, 90)
GROUP BY job_id;
```

Results | Explain | Describe | Saved SQL | History

JOB_ID	DEPT20	DEPT50	DEPT80	DEPT90	TOTAL_SALARY
HR_REP	15000	0	0	0	15000
ST_CLERK	0	10000	0	0	10000
SA_MAN	0	0	24000	0	24000
IT_PROG	7500	0	0	0	7500
SA_REP	0	0	23500	0	23500

12.Write a query to display each department's name, location, number of employees, and the average salary for all the employees in that department. Label the column name-Location, Number of people, and salary respectively. Round the average salary to two decimal places. i need sql code for these questions

```sql
SELECT
    d.department_name || ' - ' || l.city AS "Department-Location",
    COUNT(e.employee_id) AS "Number of People",
    ROUND(AVG(e.salary), 2) AS "Average Salary"
FROM employees e
JOIN departments d ON e.department_id = d.department_id
JOIN locations l ON d.location_id = l.location_id
GROUP BY d.department_name, l.city;
```

Results | Explain | Describe | Saved SQL | History

Department-Location	Number of People	Average Salary
Sales - Toronto	5	9500