ORACLE SQL SINGLE TABLE QUERIES

Server used: Oracle Application Express (APEX)

Client used: Oracle Application Express (APEX)

Database used: The generic EMP Table (Employee Table) and DEPT Table (Department Table) from the Sample Datasets using the

SQL Workshop > Utilities > Sample Datasets

The Situation: We need to retrieve the requested data making use of the SELECT clause.

The Objective: Use APEX to:

Leverage your SQL skills to extract and analyze data from the EMP & DEPT tables to answer all questions being asked my management. Each question will require you to write a SQL query along with a FROM clause (maybe along with a WHERE clause based on the requested data).
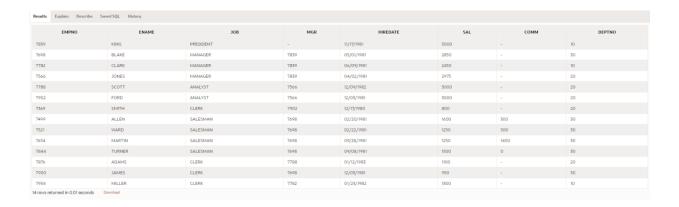
Questions and Answers:

Q1. Please retrieve all data from the EMP table.

SQL Code:

SELECT *

FROM EMP;

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30
7521	WARD	SALESMAN	7698	02/22/1981	1250	500	30
7654	MARTIN	SALESMAN	7698	09/28/1981	1250	1400	30
7844	TURNER	SALESMAN	7698	09/08/1981	1500	0	30
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
7900	JAMES	CLERK	7698	12/03/1981	950	-	30
7934	MILLER	CLERK	7782	01/23/1982	1300	-	10

14 rows returned in 0.01 seconds   Download

Q2. Please retrieve the JOB column alone from the EMP table.

SQL Code:

SELECT JOB

FROM EMP;

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History

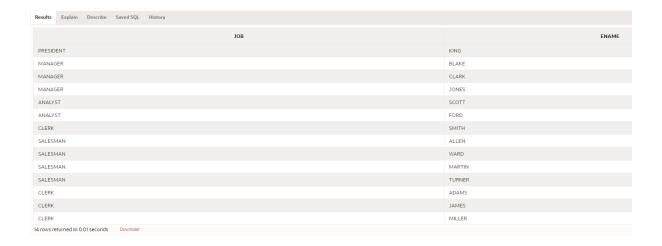| JOB |
| --- |
| PRESIDENT |
| MANAGER |
| MANAGER |
| MANAGER |
| ANALYST |
| ANALYST |
| CLERK |
| SALESMAN |
| SALESMAN |
| SALESMAN |
| SALESMAN |
| CLERK |
| CLERK |
| CLERK |

14 rows returned in 0.01 seconds   Download

Q3. Please retrieve the JOB & ENAME columns alone from the EMP table.

SQL Code:

SELECT JOB, ENAME

FROM EMP;

Screenshot Of Output:

JOB	ENAME
PRESIDENT	KING
MANAGER	BLAKE
MANAGER	CLARK
MANAGER	JONES
ANALYST	SCOTT
ANALYST	FORD
CLERK	SMITH
SALESMAN	ALLEN
SALESMAN	WARD
SALESMAN	MARTIN
SALESMAN	TURNER
CLERK	ADAMS
CLERK	JAMES
CLERK	MILLER

14 rows returned in 0.01 seconds   Download

Q4. Please retrieve all data from the DEPT table.

SQL Code:

SELECT *

FROM DEPT;

Screenshot Of Output:

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

4 rows returned in 0.02 seconds   Download

Q5. Please retrieve the unique jobs from the EMP table.

SQL Code:

SELECT DISTINCT JOB

FROM EMP;

Screenshot Of Output:

	JOB
Results	Explain	Describe	Saved SQL	History

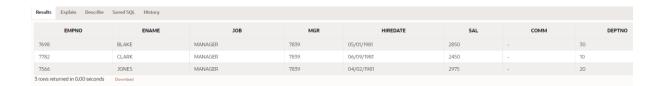| JOB |
|---|
| ANALYST |
| CLERK |
| SALESMAN |
| MANAGER |
| PRESIDENT |

5 rows returned in 0.00 seconds   Download

Q6. Please retrieve all records only for managers from the EMP table

SQL Code:

SELECT *
FROM EMP
WHERE JOB = 'MANAGER';

Screenshot Of Output:

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20

3 rows returned in 0.00 seconds   Download

Q7. Please retrieve all records only for Salesman who have a Salary of 1600 and Commission greater than 200 from the EMP table.

SQL Code:

SELECT *
FROM EMP
WHERE JOB = 'SALESMAN'
AND SAL = 1600
AND COMM > 200;

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History				
EMPNO	**ENAME**	**JOB**	**MGR**	**HIREDATE**	**SAL**	**COMM**	**DEPTNO**
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30

1 rows returned in 0.00 seconds   Download

Q8. Please retrieve all records excluding Salesman from the EMP table

SQL Code:
SELECT *
FROM EMP
WHERE JOB != 'SALESMAN';

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History				
EMPNO	**ENAME**	**JOB**	**MGR**	**HIREDATE**	**SAL**	**COMM**	**DEPTNO**
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
7900	JAMES	CLERK	7698	12/03/1981	950	-	30
7954	MILLER	CLERK	7782	01/23/1982	1300	-	10

10 rows returned in 0.00 seconds   Download

Q9. Please retrieve all records excluding Salesman with Salary less than 2000 from the EMP table

SELECT *
FROM EMP
WHERE JOB != 'SALESMAN'
AND SAL < 2000;

Results	Explain	Describe	Saved SQL	History				
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	
7369	SMITH	CLERK	7902	12/17/1980	800	-	20	
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20	
7900	JAMES	CLERK	7698	12/03/1981	950	-	30	
7934	MILLER	CLERK	7782	01/23/1982	1300	-	10	

4 rows returned in 0.00 seconds   Download

Q10. Please retrieve all records excluding Salesman with Salary less than 3000 (including 3000) from the EMP table

SELECT *
FROM EMP
WHERE JOB != 'SALESMAN'
AND SAL <=3000;

Results	Explain	Describe	Saved SQL	History				
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30	
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10	
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20	
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20	
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20	
7369	SMITH	CLERK	7902	12/17/1980	800	-	20	
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20	
7900	JAMES	CLERK	7698	12/03/1981	950	-	30	
7934	MILLER	CLERK	7782	01/23/1982	1300	-	10	

9 rows returned in 0.00 seconds   Download

Q11. Please retrieve all records where the commission is greater than salary from the EMP table

SELECT *

FROM EMP

WHERE COMM > SAL;

Screenshot Of Output:

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7654	MARTIN	SALESMAN	7698	09/28/1981	1250	1400	30

1 rows returned in 0.00 seconds   Download

Q12. Please retrieve all records for non-managers where the salary is greater than 2500 and are from Department 20 from the EMP table

SQL Code:

SELECT *

FROM EMP

WHERE JOB != 'MANAGER'

AND SAL > 2500

AND DEPTNO = 20;

Screenshot Of Output:

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20

2 rows returned in 0.00 seconds   Download

Q13. Please retrieve all records for both analysts and clerks from the EMP table

SQL Code:

SELECT *

FROM EMP

WHERE JOB = 'CLERK' OR JOB = 'ANALYST';

Screenshot Of Output:

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
7900	JAMES	CLERK	7698	12/03/1981	950	-	30
7934	MILLER	CLERK	7782	01/23/1982	1300	-	10

6 rows returned in 0.00 seconds   Download

Q14. Please retrieve the employee names and hire date for people in both department nos 10 & 30 from the EMP table

SQL Code:

SELECT ENAME, HIREDATE

FROM EMP

WHERE DEPTNO IN (10,30);

Screenshot Of Output:

ENAME	HIREDATE
KING	11/17/1981
CLARK	06/09/1981
MILLER	01/23/1982
BLAKE	05/01/1981
ALLEN	02/20/1981
WARD	02/22/1981
MARTIN	09/28/1981
TURNER	09/08/1981
JAMES	12/03/1981

9 rows returned in 0.00 seconds   Download

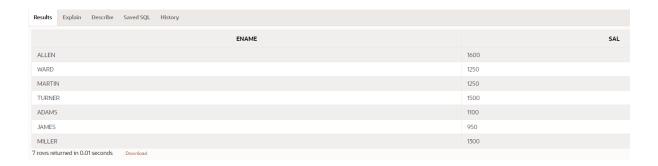Q15. Please retrieve the employee names and salaries for people with salaries between 1000 & 2000 from the EMP table

SQL Code:

SELECT ENAME, SAL

FROM EMP

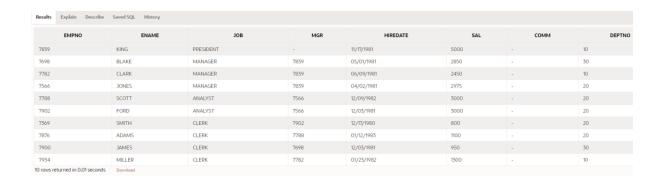WHERE SAL BETWEEN 950 AND 1600;

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History			

ENAME	SAL
ALLEN	1600
WARD	1250
MARTIN	1250
TURNER	1500
ADAMS	1100
JAMES	950
MILLER	1300

7 rows returned in 0.01 seconds   Download

Q16. Please retrieve all employees who do not have any commission from the EMP table

SQL Code:

SELECT *

FROM EMP

WHERE COMM IS NULL;

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History				

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
7900	JAMES	CLERK	7698	12/03/1981	950	-	30
7934	MILLER	CLERK	7782	01/23/1982	1300	-	10

10 rows returned in 0.01 seconds   Download

Q17. Please retrieve all employees who don't make any commission and have a salary greater than 1100 but less than 5000. Exclude those employees that a salary equal to 1500 from the EMP table
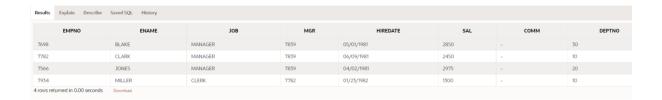
SELECT *

FROM EMP

WHERE (COMM IS NULL OR NULL =0)

AND SAL > 1100

AND SAL < 5000

AND SAL != 1500;

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History				
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7934	MILLER	CLERK	7782	01/23/1982	1300	-	10

4 rows returned in 0.00 seconds   Download

Q18.Please retrieve all employees that are salesman and that make either 300 dollars in commission or greater than 1000 dollars in commission

SQL Code:

SELECT *

FROM EMP

WHERE JOB = 'SALESMAN' AND

(COMM = 300 OR COMM > 1000);

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History				
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30
7654	MARTIN	SALESMAN	7698	09/28/1981	1250	1400	30

2 rows returned in 0.00 seconds   Download

Q19.Please retrieve all employees which have a job name ending with 'GER' from the EMP table

SQL Code:

SELECT *

FROM EMP

WHERE JOB LIKE '%GER';

Screenshot Of Output:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
Results	Explain	Describe	Saved SQL	History				
	7698	BLAKE	MANAGER	7839	05/01/1981	2850	-	30
	7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
	7566	JONES	MANAGER	7839	04/02/1981	2975	-	20

3 rows returned in 0.00 seconds   Download

Q20. Please retrieve the records in the below mentioned format by making use of concatenation from the EMP table. The column name should be "JOB DESCRIPTION"

JOB DESCRIPTION

KING has the Job of PRESIDENT

BLAKE has the Job of MANAGER

SQL Code:

SELECT ENAME || ' has the Job of ' || JOB AS "JOB DESCRIPTION"

FROM EMP;

Screenshot Of Output:

Results	Explain	Describe	Saved SQL	History

JOB DESCRIPTION
KING has the Job of PRESIDENT
BLAKE has the Job of MANAGER
CLARK has the Job of MANAGER
JONES has the Job of MANAGER
SCOTT has the Job of ANALYST
FORD has the Job of ANALYST
SMITH has the Job of CLERK
ALLEN has the Job of SALESMAN
WARD has the Job of SALESMAN
MARTIN has the Job of SALESMAN
TURNER has the Job of SALESMAN
ADAMS has the Job of CLERK

Q21. Please retrieve the employee names and salaries for people with salaries arranged in descending order the EMP table

SQL Code:

SELECT ENAME, SAL

FROM EMP

ORDER BY SAL DESC;

Screenshot Of Output:

| Results | Explain | Describe | Saved SQL | History |

ENAME	SAL
KING	5000
SCOTT	3000
FORD	3000
JONES	2975
BLAKE	2850
CLARK	2450
ALLEN	1600
TURNER	1500
MILLER	1300
MARTIN	1250
WARD	1250
ADAMS	1100
JAMES	950
SMITH	800

Q22. Please retrieve the employee names, hire dates and salaries for people with hire date arranged in ascending order and then by salaries arranged in descending order the EMP table

SQL Code:

SELECT ENAME, HIREDATE, SAL

FROM EMP

ORDER BY HIREDATE ASC, SAL DESC;

Screenshot Of Output:

Results   Explain   Describe   Saved SQL   History

ENAME	HIREDATE	SAL
SMITH	12/17/1980	800
ALLEN	02/20/1981	1600
WARD	02/22/1981	1250
JONES	04/02/1981	2975
BLAKE	05/01/1981	2850
CLARK	06/09/1981	2450
TURNER	09/08/1981	1500
MARTIN	09/28/1981	1250
KING	11/17/1981	5000
FORD	12/03/1981	3000
JAMES	12/03/1981	950
MILLER	01/23/1982	1300
SCOTT	12/09/1982	3000
ADAMS	01/12/1983	1100

Lessons Learnt:

1) Retrieving Data using the SELECT clause
2) Using the WHERE Clause in a query
3) Using Operators in the WHERE Clause
4) Using WHERE, AND & OR with Operators
5) Using BETWEEN, IN and NULL
6) Query Filtering and Operator Precedence
7) Concatenation queries
8) Aliasing query results
9) Ordering query results