The objective of this lab is to:

1. Introduction to SQL language
2. Basic SQL queries.

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Instructions:

- Work on this lab individually. Discussion is not allowed.
- Evaluation of tasks will be conducted in lab.
- Anyone caught being indulged in the act of plagiarism would be awarded an "F" grade in this lab.
- **Max Time: 60mins.**

Kindly paste the query as well as result table screenshot as a result of each task

Task 01:   [08 Marks]

1. List all rows of the table DEPT.
   Solution:
   Select * from dept

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

2. List Department name and its location from the table DEPT.

   Solution:
   Select dname, loc from dept

DNAME	LOC
ACCOUNTING	NEW YORK
RESEARCH	DALLAS
SALES	CHICAGO
OPERATIONS	BOSTON

3. List all Employees' numbers and Employees' names from EMP.
   Solution:
   Select empno as "Employees Number" , ename as "Employees Name" from emp

Employees Number	Employees Name
7369	SMITH
7499	ALLEN
7521	WARD
7566	JONES
7654	MARTIN

4. Select all the unique jobs from employee table. Name the column as '**Distinct Jobs'**.
   Solution:
   Select distinct job as "Distinct Jobs" from emp

Distinct Jobs
CLERK
SALESMAN
ANALYST
MANAGER
PRESIDENT

1. List ENAME and their taxes (Tax = SAL * 0.2).
   Solution:
   Select ename , sal* 0.2 as Tax from emp

ENAME	TAX
SMITH	160
ALLEN	320
WARD	250
JONES	595
MARTIN	250
BLAKE	570
CLARK	490
SCOTT	600
KING	1000
TURNER	300

2. Display Per Day Salary of All Employees. Name the column as '**Per day salary**'
   Solution:
   Select round(sal/30) as "Per day salary" from emp

ROUND(SAL/30)
27
53
42
99
42
95
82

100
167
50

3. Find the difference between high salary and low salary from SALGRADE.
   Solution:
   Select hisal - losal as "Salary Difference" from salgrade

Salary Difference
999
6998
500
199
599

4. Display Working Days of each employee with their names. (**Hint:** use SYSDATE to get current date)
   Solution:
   Select ename, sysdate - hiredate as "Working days" from emp

ENAME	Working days
SMITH	15055.49652777777777777777777777778
ALLEN	14990.49652777777777777777777777778
WARD	14988.49652777777777777777777777778
JONES	14949.49652777777777777777777777778
MARTIN	14770.49652777777777777777777777778
BLAKE	14920.49652777777777777777777777778
CLARK	14881.49652777777777777777777777778
SCOTT	14333.49652777777777777777777777778

KING	14720.4965277777777777777777777777778
TURNER	14790.4965277777777777777777777777778

5. Display the employee's name, salary, salary + commission as total salary, salary increase by 25% and label this column new salary, bonus (new salary - salary).
   Note: Salary to be increased by 25% should be original salary.

Solution:

Select ename as "employee name", sal as salary, sal + comm as "total salary", sal + (25 / 100 * sal) as "new salary", (sal + (25 / 100 * sal)) - sal as bonus from emp;

employee name	SALARY	total salary	new salary	BONUS
ALLEN	1600	1900	2000	400
WARD	1250	1750	1562.5	312.5

6. Display grade and sum of high and low salary as Commulative Salary from Salgrade table.
   Solution:
   Select grade, hisal + losal as "Commulative Salary" from salgrade

GRADE	Commulative Salary
4	5001
5	13000
1	1900
2	2601
3	3401

Task 03: [16 Marks]

1. List the emps along with their hiredate having Per Day Salary less than Rs. 100.
   Solution:
   Select ename, hiredate from emp where sal/30 <100;

ENAME	HIREDATE

SMITH	12/17/1980
ALLEN	02/20/1981
WARD	02/22/1981
JONES	04/02/1981
MARTIN	09/28/1981
BLAKE	05/01/1981
CLARK	06/09/1981
TURNER	09/08/1981
ADAMS	01/12/1983
JAMES	12/03/1981

2. List the employees working under the manager having id=7566. (mgr = 7566)
   Solution:
   Select * from emp where mgr = 7566

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

3. Display the house rent (35% of salary), medical allowance (12% of salary) of each employee. Name the column as **House Rent** and **Medical Allowance** as well.
   Solution:
   Select 0.35 * sal as "House Rent" , 0.12*sal as "Medical Allowance" from emp

House Rent	Medical Allowance
280	96
560	192
437.5	150
1041.25	357

437.5	150
997.5	342
857.5	294
1050	360
1750	600
525	180

4. List the emps who are either 'CLERK' or 'ANALYST' in the Desc order with respect to salary.
   Solution:
   Select * from emp where job = 'CLERK' or job = 'ANALYST'
   order by sal desc

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

5. Display those employees who are not working in dept 30.
   Solution:
   Select * from emp where deptno <> 30

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7566	JONES	MANAGER	7839	04/02/1981	2975	-	20
7782	CLARK	MANAGER	7839	06/09/1981	2450	-	10
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10

| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |
| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |

6. Display the output in the following format. Rename the column Designation **(using alias)**

Designation
SMITH works as CLERK
ALLEN works as SALESMAN

Solution:

Select ename || ' works as ' || job as designation from emp

DESIGNATION
SMITH works as CLERK
ALLEN works as SALESMAN
WARD works as SALESMAN
JONES works as MANAGER
MARTIN works as SALESMAN
BLAKE works as MANAGER
CLARK works as MANAGER
SCOTT works as ANALYST

7. List all the employees except ''MANAGER" and display in ascending order w.r.t salary.
   Solution:
   Select * from emp where job <> 'MANAGER' order by sal asc

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	12/17/1980	800	-	20
7900	JAMES	CLERK	7698	12/03/1981	950	-	30

7876	ADAMS	CLERK	7788	01/12/1983	1100	-	20
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
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30
7902	FORD	ANALYST	7566	12/03/1981	3000	-	20
7788	SCOTT	ANALYST	7566	12/09/1982	3000	-	20
7839	KING	PRESIDENT	-	11/17/1981	5000	-	10

8. Display the output in the format (Ename + sal + Annual Salary + Per Day Salary)

Emp Salary Details
SMITH having Monthly Salary 800 and Annual Salary 9600 and Per Day Salary 26.6666666666666666666666666666666666667
ALLEN having Monthly Salary 1600 and Annual Salary 19200 and Per Day Salary 53.3333333333333333333333333333333333333

Solution:

Select ename || ' having Monthly Salary ' || sal || ' and Annual Salary ' || sal *12 || ' and Per Day Salary '|| sal/30 as "Emp salary Details" from emp

Emp salary Details
SMITH having Monthly Salary 800 and Annual Salary 9600 and Per Day Salary 26.6666666666666666666666666666666666667
ALLEN having Monthly Salary 1600 and Annual Salary 19200 and Per Day Salary 53.3333333333333333333333333333333333333
WARD having Monthly Salary 1250 and Annual Salary 15000 and Per Day Salary 41.6666666666666666666666666666666666667
JONES having Monthly Salary 2975 and Annual Salary 35700 and Per Day Salary 99.1666666666666666666666666666666666667

MARTIN having Monthly Salary 1250 and Annual Salary 15000 and Per Day Salary 41.66666666666666666666666666666666667

BLAKE having Monthly Salary 2850 and Annual Salary 34200 and Per Day Salary 95

CLARK having Monthly Salary 2450 and Annual Salary 29400 and Per Day Salary 81.66666666666666666666666666666666667

SCOTT having Monthly Salary 3000 and Annual Salary 36000 and Per Day Salary 100

KING having Monthly Salary 5000 and Annual Salary 60000 and Per Day Salary 166.66666666666666666666666666666666667

TURNER having Monthly Salary 1500 and Annual Salary 18000 and Per Day Salary 50

Task 04:   [3 Marks]

1. Will this statement execute successfully? (1 mark)
   SeLeCt dNaMe fRom EmP

Solution:

No, because the emp table has no attribute dname and SQL is a case insensitive language.

2. Identify all possible errors in the statement. (2 marks)
   Select ENAME as Name of Employee, Job, Sal, Sal x 12 as salary from emp.

Solution:

a. **SELECT ENAME AS "NAME OF EMPLOYEE", JOB, SAL, SAL*12 AS SALARY FROM EMP;**

Errors:
1. **Use inverted commas for name of employee as spaces are use in this name.**
2. **Multiplication x replaced by *.**