Practical-4

To implement single-row functions

Q-1 Write a query to display the current date. Label the column Date.

A

```
SQL> select sysdate as "Date" from dual;

Date
---------
07-FEB-24
```

Q-2 For each employee, display the employee number, salary, and salary increased by 15% and expressed as a whole number. Label the column New Salary.

A

```
SQL> select emp_no,emp_sal,ROUND(emp_sal*1.15) as "New Salary" from employee;

    EMP_NO    EMP_SAL New Salary
---------- ---------- ----------
       101        800        920
       102       1600       1840
       103       1100       1265
       104       3000       3450
       105       5000       5750
       106       2450       2818
       107       2975       3421

7 rows selected.
```

Q-3 Modify your query no (2) to add a column that subtracts the old salary from the new salary. Label the column Increase

A

```
SQL> select emp_no,emp_sal,ROUND(emp_sal*1.15) as "New Salary",ROUND(emp_sal*0.15) as "Increase" from employee;

   EMP_NO    EMP_SAL New Salary   Increase
--------- ---------- ---------- ----------
      101        800        920        120
      102       1600       1840        240
      103       1100       1265        165
      104       3000       3450        450
      105       5000       5750        750
      106       2450       2818        368
      107       2975       3421        446

7 rows selected.
```

Q-4	Write a query that displays the employee's names with the first letter capitalized and all other letters lowercase, and the length of the names, for all employees whose name starts with J, A, or M. Give each column an appropriate label. Sort the results by the employees' last names.
A	

```
SQL> SELECT INITCAP(emp_name) as "Name",LENGTH(emp_name) "Length" from employee
  2  where emp_name like 'A%' or emp_name like 'J%' or emp_name like 'M%'
  3  ORDER BY l_name;

Name                           Length
------------------------------ ----------
Anamika                             7
Anita                               5
Aman                                4
```

Q-5	Write a query that produces the following for each employee: <employee last name> earns <salary> monthly
A	

```
SQL> select l_name || ' earns ' || emp_sal || ' monthly.' as "Statement" from employee;

Statement
--------------------------------------------------------------------------------
Shah earns 800 monthly.
Gupta earns 1600 monthly.
Wales earns 1100 monthly.
Sharma earns 3000 monthly.
Patel earns 5000 monthly.
Joseph earns 2450 monthly.
Jha earns 2975 monthly.

7 rows selected.
```

Q-6	Display the name, date, number of months employed and day of the week on which the employee has started. Order the results by the day of the week starting with Monday.
A	

```
SQL> select emp_name,hiredate,ROUND(months_between(sysdate,hiredate)) as "Months Employed",
  2  to_char(hiredate,'DAY') as "Day" from employee order by "Day" desc;

EMP_NAME                       HIREDATE  Months Employed Day
------------------------------ --------- --------------- ----------------------------------
Anamika                        15-JUL-97             319 TUESDAY
Darshita                       30-NOV-95             338 THURSDAY
Snehal                         14-MAR-96             335 THURSDAY
Aman                           02-OCT-97             316 THURSDAY
Anita                          01-JAN-98             313 THURSDAY
Sneha                          26-SEP-97             316 FRIDAY
Smith                          09-AUG-96             330 FRIDAY

7 rows selected.
```

Q-7	Display the date of emp in a format that appears as Seventh of June 1994 12:00:00 AM.(ddspth)

A	`SQL> select to_char(hiredate,'ddspth') || ' of ' || to_char(hiredate,'fmMonth') ||`
	`  2  ', ' || to_char(hiredate,'YYYY') || ', ' || to_char(hiredate,'HH24:MI:SS AM') "Date" from employee;`
	
	`Date`
	`----------`
	`ninth of August, 1996, 00:00:00 AM`
	`fourteenth of March, 1996, 00:00:00 AM`
	`thirtieth of November, 1995, 00:00:00 AM`
	`second of October, 1997, 00:00:00 AM`
	`first of January, 1998, 00:00:00 AM`
	`twenty-sixth of September, 1997, 00:00:00 AM`
	`fifteenth of July, 1997, 00:00:00 AM`
	
	`7 rows selected.`

Q-8	Write a query to calculate the annual compensation of all employees (sal +comm.).

A	`SQL> select emp_sal + nvl(emp_comm,0) as "Compensation" from employee;`
	
	`Compensation`
	`------------`
	`800`
	`1900`
	`1600`
	`3000`
	`55000`
	`26950`
	`2975`
	
	`7 rows selected.`

Practical-5

Displaying data from multiple tables (join).

Q-1 Give details of customer ANIL.

A

```
SQL> select d1.a_no,d1.cname,d1.bname,d1.amount as "Account_Balance",d1.a_date,b1.loanno,b1.amount as "Loan_Amount"
  2  from deposit d1, borrow b1 where d1.cname = b1.cname and d1.cname = 'Anil';

A_NO  CNAME           BNAME      Account_Balance A_DATE    LOANNO Loan_Amount
----- --------------- ---------- --------------- --------- ------ -----------
101   Anil            Andheri               7000 01-JAN-06 201          1000
```

Q-2 Give name of customer who are borrowers and depositors and having living city Nagpur.

A

```
SQL> select c.cname from customer1 c,deposit d,borrow b where c.cname = d.cname and c.cname = b.cname and c.city ='Nagpur';

no rows selected
```

Q-3 Give city as their city name of customers having same living branch.

A

```
SQL> select distinct c.city as "City Name" from customer1 c inner join branch b on c.city = b.city;

City Name
--------------------
Delhi
Nagpur
Bombay
```

Q-4 Write a query to display the last name, department number, and department name for all employees.

A

```
SQL> select a.l_name,a.dept_name,a.dept_no from employee a,employee b where a.dept_no = b.dept_no and a.l_name=b.l_name;

L_NAME          DEPT_NAME                      DEPT_NO
--------------- ------------------------------ ----------
Shah            Machine Learning                       10
Gupta           Data Science                           25
Wales           Machine Learning                       20
Sharma          Virtual Reality                        10
Patel           Big Data Analytics                     10
Joseph          Big Data Analytics                     10
Jha             Artificial Intelligence                30

7 rows selected.
```

Q-5 Create a unique listing of all jobs that are in department 30. Include the location of the department in the output.

A

```
SQL> select job_id,location from employee where dept_no=30;

JOB_ID     LOCATION
---------- ---------------
it_prog    New York
```

Q-6	Write a query to display the employee's name, department number, and department name for all employees who work in NEW YORK.
A	

```
SQL> select emp_name,dept_no,dept_name from employee where location = 'New York';

EMP_NAME                       DEPT_NO DEPT_NAME
------------------------------ ---------- ------------------------------
Anamika                                30 Artificial Intelligence
```

Q-7	Display the employee's last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively.
A	

```
SQL> select l_name "Employee", emp_no "Emp#", manager_id "Mgr#" from employee;

Employee             Emp#       Mgr#
--------------- ---------- ----------
Naik                    108        105
Shah                    101        105
Gupta                   102
Wales                   103        105
Sharma                  104         12
Patel                   105        107
Joseph                  106        105
Jha                     107
```

Q-8	Create a query to display the name and hire date of any employee hired after employee "smith".
A	

```
SQL> select emp_name,hiredate from employee
  2  where hiredate > (select hiredate from employee where emp_name = 'Smith');

EMP_NAME                       HIREDATE
------------------------------ ---------
Aman                           02-OCT-97
Anita                          01-JAN-98
Sneha                          26-SEP-97
Anamika                        15-JUL-97

4 rows selected.
```

Appendix:

Table-1: Branch

Create table Branch(bname varchar2(20), city varchar2(20));

```
SQL> desc branch;
 Name                      Null?    Type
 ------------------------- -------- ----------------
 BNAME                              VARCHAR2(20)
 CITY                               VARCHAR2(20)
```

Insert into Branch values(‘&bname’, ‘&city’);

```
SQL> select * from branch;

BNAME                CITY
-------------------- --------------------
Ajni                 Nagpur
Karolbagh            Delhi
Chandi               Delhi
Dharampeth           Nagpur
M.g.road             Banglore
Andheri              Bombay
Virar                Bombay
Nehru Place          Delhi
Powai                Bombay

9 rows selected.
```

Table-2: Customer1

Create table customer1(cid number, cname varchar2(20), city varchar2(20));

```
SQL> desc customer1;
 Name                      Null?    Type
 ------------------------- -------- ----------------
 CID                                NUMBER
 CNAME                              VARCHAR2(20)
 CITY                               VARCHAR2(20)
```

Insert into customer1 values(&cid, '&cname', '&city');

```
SQL> select * from customer1;

       CID CNAME                CITY
---------- -------------------- --------------------
         1 Anil                 Calcutta
         2 Sunil                Delhi
         3 Mehul                Baroda
         4 Mandar               Patna
         5 Madhuri              Nagpur
         6 Pramod               Nagpur
         7 Sandip               Surat
         8 Shivani              Bombay
         9 Kranti               Bombay
        10 Naren                Bombay

10 rows selected.
```

Practical-6

To apply the concept of Aggregating Data using Group functions.

Q-1 List total deposit of customer having account date after 1-jan-96.

A

```
SQL> select sum(amount) from deposit where A_date > '01-jan-1996';

SUM(AMOUNT)
-----------
      39500

1 row selected.
```

Q-2 List total deposit of customers living in city Nagpur.

A

```
SQL> select sum(d.amount) from deposit d,customer1 c where d.cname = c.cname and c.city='Nagpur';

SUM(D.AMOUNT)
-------------


1 row selected.
```

Q-3 List maximum deposit of customers living in bombay.

A

```
SQL> select max(d.amount) from deposit d,customer1 c where d.cname = c.cname and c.city='Bombay';

MAX(D.AMOUNT)
-------------


1 row selected.
```

Q-4 Display 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.

A

```
SQL> select max(emp_sal) as "Maximum",min(emp_sal) as "Minimum",
  2  sum(emp_sal) as "Sum", Round(avg(emp_sal)) as "Average"  from employee;

   Maximum    Minimum        Sum    Average
---------- ---------- ---------- ----------
      5000        800      16925       2418

1 row selected.
```

Q-5	Write a query that displays the difference between the highest and lowest salaries. Label the column DIFFERENCE.

A	`SQL> select max(emp_sal) - min(emp_sal) as "Difference" from employee;`
	
	`Difference`
	`----------`
	`4200`
	
	`1 row selected.`

Q-6	Create a query that will display the total number of employees and, of that total, the number of employees hired in 1995, 1996, 1997, and 1998

A	`SQL> select count(emp_no) from employee group by extract(year from hiredate);`
	
	`COUNT(EMP_NO)`
	`------------`
	`2`
	`1`
	`3`
	`1`
	
	`4 rows selected.`

Q-7	Find the average salaries for each department without displaying the respective department numbers.

A	`SQL> select avg(emp_sal) from employee group by dept_name;`
	
	`AVG(EMP_SAL)`
	`------------`
	`950`
	`1600`
	`3000`
	`3725`
	`2975`
	
	`5 rows selected.`

Q-8	Write a query to display the total salary being paid to each job title, within each department.

A	`SQL> select sum(emp_sal) from employee group by dept_name, job_id;`
	
	`SUM(EMP_SAL)`
	`------------`
	`800`
	`1600`
	`1100`
	`3000`
	`5000`
	`2450`
	`2975`
	
	`7 rows selected.`

Q-9	Find the average salaries > 2000 for each department without displaying the respective department numbers.

A	`SQL> select avg(emp_sal) from employee group by dept_name having avg(emp_sal)>2000;`
	
	`AVG(EMP_SAL)`
	`------------`
	`3000`
	`3725`
	`2975`
	
	`3 rows selected.`

Q-10	Display the job and total salary for each job with a total salary amount exceeding 3000 and sorts the list by the total salary.

A	`SQL> select e.job_id,sum(e.emp_sal) from employee e, job j`
	`2 where e.job_id = j.job_id group by e.job_id having sum(e.emp_sal)>3000;`
	
	`JOB_ID SUM(E.EMP_SAL)`
	`---------- --------------`
	`comp_op 8000`

Q-11	List the branches having sum of deposit more than 5000 and located in city bombay.

A	`SQL> select d.bname from deposit d, branch b where d.bname = b.bname`
	`2 and b.city='Bombay' group by d.bname having sum (d.amount)>5000;`
	
	`BNAME`
	`----------`
	`Andheri`