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Subject → DBMS Assignment

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1. Data Definition Language (DDL) commands

1.1 Create a table called Emp.

Ans: create table emp1 (empno number (6) primary key not null, ename varchar2 (20), job varchar2 (20), mgr number (4), deptno number (3), sal number (7,2));

1.2 Add a column commission to the emp table commission numeric null allowed.

Ans: alter table emp1 add (comm number (5));

1.3 Modify the column width of the job field of emp table.

Ans: alter table emp1 modify (job varchar2 (21));

1.4 Create dept table

Ans: create table depart (deptno number (3), dname varchar2 (15), loc varchar2 (20));

1.5 Add constraints to the emp table that empno as the primary key and deptno as the foreign key.

Ans: alter table depart modify (deptno primary key);

1.6 Add constraints to the emp table to check the empno value while entering (i.e) empno > 100

Ans: alter table empl add foreign key (deptno) reference depart(deptno);

1.7 Salary value by default is 5000, otherwise as entered values.

Ans: alter table empl add check (empno>100);

18 Add columns Dob to the emp table.

Ans:- alter table empl modify sal default 5000;

2. Data Manipulation Language (DML) commands

2.1 Insert 3 records into dept table.

Ans: insert into depart values (10, 'MANAGE', 'Main Block');
insert into depart values (20, 'Develop', 'manufacturing');
insert into depart values (30, 'Sales', 'Head office');

2.2 Insert 10 records into emp table.

Ans: insert into empl values (7369, 'smith', 'clerk', 7566, 20, 800.0, '17-dec-1980');

insert into empl values (7399, 'asant', 'salesman', 7566, 20, 1600, 300, '20-feb-1981');

insert into empl values (7380, 'black', 'salesman', 7698, 30, 1600, 500, '20-feb-1982');

Insert into empl values (7521, 'ward', 'salesman', 7839, 20, 5975, 500, '02-apr-1981');

insert into empl values (7698, 'blake', 'manager', 7839, 30, 9850, 1400, '01-may-1979');

insert into empl values (7611, 'scott', 'hod', 7839, 10, 3000, NULL, '12-jun-1976');

2.3 Update the emp table to set the default commission of all employees to Rs 1000/- who are working as managers

Ans:- update empl set comm = 1000 where job = 'manager';

2.4 Create a pseudo table employee with the same structure as the table emp and insert rows into the table using select clauses

Ans:- 1. Create a table employees as emp.
2. Use select clause to perform this.

2.5 Delete only those who are working as Supervisors.

Ans delete from empl where job = 'supervisor';

2.6 Delete the rows whose empno is 7599.

Ans: delete from empl where empno = 7599

27. List the records in the emp table order by salary in ascending order.

Ans select * from emp1 order by sal;

2.8 List the records in the emp table order by salary in descending order.

Ans: select * from emp1 order by sal desc;

2.9 Display only those employees whose deptno is 30.

Ans. Select * from emp where deptno = 30;

2.10 Display deptno from the table employee avoiding the duplicated values.

Ans: select distinct deptno from emp1;

2.11 List the records in sorted order of their employees.

Ans: select * from emp1 order by ename.

3. In Built Functions

Problem 3.1 Select all employees from department number 7369, 7499.

Ans: select * from emp where deptno in (7369, 7499);

3.2 Display all the details of the record whose employee name starts with 'S'.

Ans:- select * from employee where empname like 'S%';

3.3 Display all the details of the records whose employee name does not starts with 'S'

Ans:- select * from employee where empname not like 'S%';

3.4 Display the rows whose empno ranges from 7500 to 7600

Ans:- select * from employee where empno between 7500 and 7600;

3.5 Display the rows whose empno not in range from 7500 to 7600.

Ans:- select * from employee where empno not between 7500 and 7600;

3.6 Calculate the square root of the salary of all employees.

Ans:- select sqrt(sal) from emp;

3.7 Count the total records in the emp table.

Ans:- select count(*) from emp;

3.8 Calculate the total and average salary amount of the emptable.

Ans:- select sum(sal), avg(sal) from emp;

3.9 Determine the max and min salary and rename the column as max_salary and min_salary.

Ans:- select min(sal) "min_sal", max(sal) "max_sal" from emp;

3.10 Display total salary spent for employees.

Ans:- select sum(sal) from emp;

3.11 Display total salary spent for each job category.

Ans:- select job, sum(sal) from emp group by job;

3.12 Display the month name of date "14-jul-09" in full.

Ans:- select to_char(to_date('14-jul-09'), 'month') from dual;

3.13 Display the dob of all employees in the format "dd-mm-yy".

Ans:- select to_date(doj, 'DD-mm-YY') from emp;

3.14 Display the date two months after the Dob of employees.

Ans:- select add_months(dob, 2) from emp;

3.15 Display the last date of that month in "05-Oct-09".

Ans:- select last_day ('05-oct-09') from dual;

3.16 Display the rounded date in the year format, month format, day format in the employees

Ans:- select round (to_date (dob), 'month') from emp;
select round (to_date (dob), 'year') from emp;
select round (to_date (dob), 'day') from emp;

3.17 Display the date 60 days before current date.

Ans:- select (sysdate-60) from dual;

3.18 List all employees which starts with either B or C

Ans:- select ename from emp where ename like 'B%' or ename like 'C%';

3-19 List all employees names, salary and 15% rise in salary.

Ans:- select ename, sal, sal + 0.15* sal from emp.

3.20 Display lowest paid employee details under each manager.

Ans:- select ename, sal, mgr from emp where sal in (select min(sal) from emp group by mgr);

3.21 Display number of employees working in each department and their department name.

Ans:- select dname, count(ename) from emp, dept where emp.deptno = dept.deptno group by dname.

3.22 Display the employee names whose name contains up to 5 characters.

Ans:- select empname from emp where length (empname) <= 5;

3-23 List all employee names and their manager whose manager is 77499 or 7566 or 7611.

Ans: select ename from emp where mgr in (77499, 7566, 7789);

3-24 Find how many job titles are available in employee table.

Ans:- select count(distinct job) from emp;

3-25 What is difference between maximum and minimum salaries of employees in the organization?

Ans:- select max(sal)-min(sal) from emp;

3-26 Find no. of dept in employee table.

Ans:- select count(distinct deptno) from emp;

3-27. Display the names and dob of all employees whose were born in feburary.

Ans:- select empname, dob from emp where to_char(dob, 'mon')='Feb';

4. Nested Queries & Joins in RDBMS

4.1

Ans:- select ENAME, DNAME from EMP, DEPT where DNAME = 'MAINTAINANCE' OR DNAME = 'DEVELOPMENT';

4.2

Ans:- select ename FROM emp WHERE sal > (select MEN(sal) FROM emp) AND JOB LIKE ('M%');

4.3

Ans:- Select ename FROM EMP where job = (SELECT job FROM emp WHERE ENAME = 'JONES');

4.4

Ans:- select * from emp WHERE sal > ANY (select sal From emp WHERE DEPTNO = 30);

4.5

Ans:- select * from emp where job = (select job from emp where ename = 'Jones') AND sal >= (select sal from emp where ENAME = 'FORD');

4.6

Ans: SELECT ename, job from emp WHERE DEPTNO =10 AND JOB IN (SELECT JOB from emp, dept WHERE EMP.DEPTNO = DEPT.DEPTNO AND Dname = 'MANAGEMENT');

4.7

Ans:- SELECT * from emp WHERE sal > (SELECT AVG (SAL) FROM emp);

4.8

Ans. SELECT ENAME, JOB, DNAME FROM EMP, DEPT WHERE EMP.DEPTNO = DEPT.DEPTNO;

4.9

Ans:- SELECT * FROM EMP WHERE job in (SELECT job FROM emp, dept WHERE emp.deptno = dept.deptno and: LOC = 'MAIN BLOCK');

4.10

Ans. SELECT * from emp WHERE DEPTNO =10 AND JOB IN (SELECT JOB FROM emp, dept WHERE EMP. DEPTNO = DEPT. DEPTNO AND Dname = 'development');

4.11

Ans: SELECT * FROM EMP WHERE job = (SELECT job FROM emp WHERE ENAME = 'FORD') AND SAL = (SELECT SAL FROM emp WHERE ENAME = 'FORD');

4.12

Ans: Select Dname From Dept.DeptNo where 2<= (select count (ename) from emp where job = 'salesman' AND DeptNO = Dept.DeptNO);

4.13

Ans: Select * From emp where deptno = 30 and job = any (select job from emp where deptno = 30);

4.14

Ans: select ename from emp where sal > Any (select sal from emp where deptno in (20,30));

4.15

Ans: select max(sal) from emp where sal > any (select sal from emp where sal > 5000);

select dept.dname, max(emp.sal) from emp, dept where emp.sal > 9000 group by dept.dname;

4.16

Ans: select dept.name, max(emp.sal) from emp, dept where emp.sal > 1000 and emp.sal < 5000 group by dept.dname;

4.17

Ans: select * from Dept full outer join AccDept on Dept.Deptno = Accdept.deptno;

4.19

Ans: select ename, dname from emp left join dept on emp.deptno = dept.deptno;

4.20

Ans: select ename, dname from emp right join dept on emp.deptno = dept.deptno;

4.21

Ans: select ename, dname from emp full outer join dept on emp.deptno = dept.deptno

4.24

Ans:- select ename, job, dname, loc from emp natural join dept;

5. Set operations & Views in RDBMS

5.1

Ans → select deptno from dept union select deptno from accdept;

5.2

Ans → select deptno from dept union all select deptno from accdept;

5.3

Ans → select deptno from dept intersect select deptno from accdept;

5.4

Ans → select deptno from dept minus select deptno from accdept;

5.5

Ans → create view manager1 as select * from emp where job = 'manager';

5.6

Ans → create view general as select empno, ename, emp.deptno from emp;

dept where emp.deptno = dept.deptno;

5.7

Ans:- create view all1 as select empno, ename, emp.deptno, dname from emp, dept where emp.deptno = dept.deptno;

5.8

Ans:- Select view-name from user_views;

5.9

Ans:- insert into manager values (7201, 'CLAVE', 20, 'computer');

5.10

Ans:- drop view all1;

6. Control structures

6.1

Ans:-

```
declare
a number (10);
b number (10);
begin
a := &a;
b := &b;
dbms_output.put_line('The PREV values
of A AND B WERE');
dbms_output.put_line(a);
dbms_output.put_line(b);
a := a+b;
b := a-b;
a := a-b;
dbms_output.put_line('The VALUES OF
A AND B ARE');
dbms_output.put_line(a);
dbms_output.put_line(b);
end;
```

6.2

Ans:-

```
declare
a number(10);
b number(10);
c number(10);
begin
dbms_output.put_line('THE PREV VALUES
OF A AND B WERE');
dbms_output.put_line(a);
dbms_output.put_line(b);
a:=&a;
b:=&b;
c:=a;
a:=b;
b:=c;
dbms_output.put_line('The values of A
AND B ARE');
dbms_output.put_line(a);
dbms_output.put_line(b);
end;
```

6.3

Ans:
```
declare
a number;
b number;
begin
a := &a;
b := &b;
if a=b then
dbms_output.put_line('BOTH ARE EQUAL');
elsif a>b then
dbms_output.put_line('A IS GREATER');
else
dbms_output.put_line('B IS GREATER');
endif;
end;
```

6.4

Ans:-
```
declare
java number(10);
dbms number(10);
cio number(10);
se number(10);
es number(10);
ppl number(10);
```

```
total number(10);
avgs number(10);
per number(10);
begin
dbms_output.put_line('Enter the marks');
java:=&java;
dbms:=&dbms;
co:=&co;
se:=&se;
es:=&es;
ppl:=&ppl;
total:=(java+dbms+co+se+es+ppl);
per:=(total/600)*100;
if java<40 or dbms<40 or co<40 or se<40
or es<40 or ppl<40 then
dbms_output.put_line('FAIL');
if per>75 then
dbms_output.put_line('Grade A');
elsif per>65 and per<=75 then
dbms_output.put_line('Grade B');
elsif per>55 and per<=65 then
dbms_output.put_line('Grade C');
else
```

```
dbms_output.put_line ('INVALID INPUT');
end if;
dbms_output.put_line('PERCENTAGE IS'||per);
dbms_output.put_line ('Total is'|| total);
end;
```

6.5

Ans→

```
declare
a number;
d number:=0;
sum1 number:=0;
begin
a:=&a;
while a>0
loop
d:=mod(a,10);
sum1:=sum1+d;
a:=trunc(a/10);
end loop;
dbms_output.put_line('sum is'|| sum1);
end;
```

6.6

Ans:-
```
declare
a number;
rev number;
d number;
begin
a:=&a;
rev:=0;
while a>0
loop
d:=mod(a,10);
rev:=(rev*10)+d;
a:=trunc(a/10);
end loop;
dbms_output.put_line('no is'||rev);
end;
```

6.7

Ans:-
```
declare
a number;
c number:=0;
i number;
begin
a:=&a;
```

```
for i in 1..a
loop
if (mod(a,i)=0) then
c:=c+1;
end if;
end loop;
if c=2 then
dbms_output.put_line('a is a prime number');
else
dbms_output.put_line('a is not a prime number');
end if;
end;
```

6.8

Ans:

```
declare
n number;
f number:=1;
begin
n:=&n;
for i in 1..n
loop
f:=f*i;
end loop;
dbms_output.put_line('the factorial is' || f);
end;
```

6.9

Ans: SQL > @AREAOFCIRCLE.SQL
13 /
PL/SQL procedure successfully completed.
SQL > SELECT * FROM AREAS;

RADIUS	AREA
3	28.26
4	50.24
5	78.5
6	113.04

```
create table areas (radius number(10), area
 number (6,2));
Table created.
-- PROGRAM
declare
pi constant number(4,2) := 3.14;
radius number(5):=3;
area number (6,2);
begin
while radius <= 7 loop
area := pi * power (radius,2);
insert into area values (radius, area);
```

```
radius := radius + 1;
end loop;
end;
```

6.10

Ans: create table acct (name varchar2(10), cur_bal number(10), acctno number (6,2));
insert into stud values ('&sname', &rollno, &marks);
select * from acct;

ACCTNO	NAME	CUR_BAL
777	Sirius	10000
765	john	1000
855	Sam	500
353	peter	800

```
PROGRAM
declare
mano number(5);
mcb number(6,2);
minibal constant number(7,2) := 1000.00;
fine number(6,2) := 100.00;
begin
```

```
mano := &mano;
select cur_bal into mcb from acct where
acctno = mano;
if mcb< minibal then
update acct set cur_bal = cur_bal - fine
where acctno = mano;
end if;
end;
```

7. Procedures and Funtions

7.1

Ans:-
```
create or replace procedure salary
(deptid number) as
begin
update emp set sal = sal + 1000 where
sal > 5000 AND deptno = deptid;
end;
```

7.2

Ans:-
```
create or replace procedure salary1
(empid number) as begin
update emp set sal = sal + sal * (0.1)
where empno = empid;
end;
```

7.3

Ans:-
```
create or replace procedure get_sal
(deptnumber) as
begin
for s in (select * from emp where deptno = deptno)
loop
dbms_output.put_line(s.sal);
end loop;
end;
```

7.4 create or replace procedure get_nature (dept number) as
begin
for s in (select * from emp where deptno=dept)
loop
dbms_output.put_line (s.job);
end loop;
end;

7.5
Ans: create or replace procedure dep_name (deptId number) as
begin
select dept.dname from dept, emp where emp.deptno = dept.deptno;
end;

8. Triggers

8.1

Ans: CREATE TRIGGER lcase_insert
BEFORE INSERT ON emp For EACH ROW
SET NEW.language = LOWER(NEW.language);

8.2

Ans:- insert into emp (cnt)
Select count(*) from employee where salary > 10000;

8.3

Ans:- CREATE TRIGGER emp;
BEGIN
If (to_char(sysdate,'dy') IN ('wed','WED'))
THEN
RAISE_APPLICATION_ERROR(-20002,'record
cannot be deleted');
END IF;
END;

8.4

Ans:- CREATE TRIGGER emp;
BEGIN
IF(to_char(sysdate,'dy') IN ('ravi','RAVI'))

```
RAISE_APPLICATION_ERROR(-20003,'record
cannot be deleted for ravi');
END IF;
END;
```

8.5

Ans:

```
CREATE TRIGGER emp;
for each row n
begin
Begin
if (n.emp=14) then
Then
RAISE_APPLICATION_ERROR(-20003,'cannot
Insert into this emp');
END IF;
END;
```