AVIROOP PAUL | 20051136

DBMS LAB RECORD

JANUARY 13TH, 2022

```
CREATE TABLE Deposit2005040 (
        ActNo varchar2(5),
        CName varchar2(20),
        BName varchar2(20),
        Amount number(8,2),
        Adate date
);

CREATE TABLE Branch2005040 (
        BName varchar2(20),
        City varchar2(20)
);

CREATE TABLE Customer2005040 (
        CName varchar2(20),
        City varchar2(20)
);

CREATE TABLE Borrow2005040 (
        LoanNo varchar2(5),
        CName varchar2(20),
        BName varchar2(20),
        Amount number(8,2)
);
```

DESC Deposit20051136;

```
SQL> desc deposit20051136
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ACTNO                                              VARCHAR2(5)
 CNAME                                              VARCHAR2(20)
 BNAME                                              VARCHAR2(20)
 AMOUNT                                             NUMBER(8,2)
 ADATE                                              DATE
```

DESC Branch20051136;

```
SQL> desc branch20051136
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 BNAME                                               VARCHAR2(20)
 CITY                                                VARCHAR2(20)
```

DESC Customer2005040;

```
SQL> desc customer20051136
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CNAME                                               VARCHAR2(20)
 CITY                                                VARCHAR2(20)
```

DESC Borrow2005040;

```
SQL> desc borrow20051136
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 LOANNO                                              VARCHAR2(5)
 CNAME                                               VARCHAR2(20)
 BNAME                                               VARCHAR2(20)
 AMOUNT                                              NUMBER(8,2)
```

INSERT INTO Deposit2005040 (ActNo, CName, BName, Amount, Adate)
VALUES ('102', 'Rahul', 'KAROLBAGH', '3500.00', '17-NOV-95');

```
SQL> select * from deposit20051136;

ACTNO CNAME                BNAME                AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
100   ANIL                 VRCE                       1000 01-MAR-95
101   SUNIL                AJNI                       5000 04-JAN-96
102   RAHUL                KAROLBAGH                  3500 17-NOV-95
103   MADHURI              CHANDNI                    1200 17-DEC-95
105   SANDIP               KAROLBAGH                  2000 31-MAR-96
104   Pramod               MGROAD                     3000 27-MAR-96
```

INSERT INTO Branch2005040 (BName, City)
VALUES ('MGROAD', 'BANGALORE');

```
SQL> select * from branch20051136;

BNAME                CITY
-------------------- --------------------
MGRoad               Bangalore
VRCE                 NAGPUR
AJNI                 NAGPUR
KAROLBAGH            DELHI
CHANDNI              DELHI
```

INSERT INTO Customer2005040 (CName, City)
VALUES ('PRAMOD', 'NAGPUR');

```
CNAME                CITY
-------------------- --------------------
Pramod               Nagpur
ANIL                 CALCUTTA
SUNIL                DELHI
RAHUL                BARODA
MADHURI              NAGPUR
```

INSERT INTO Borrow2005040 (LoanNo, CName, BName, Amount)
VALUES (375, 'PRAMOD', 'VIHAR', 8000.00);

```
SQL> select * from borrow20051136;

LOANN CNAME                BNAME                     AMOUNT
----- -------------------- -------------------- ----------
375   Pramod               Vihar                       8000
201   ANIL                 VRCE                        1000
206   RAHUL                AJNI                        5000
311   SUNIL                DHARAMPEETH                 3000
321   MADHURI              ANDHERI                     2000
```

JANUARY 20TH, 2022

Assignment -02

Thursday, January 20, 2022 6:51 PM

ID	FNAME	LNAME	AGE	GENDER	LOC
1	Raj	Kumar	23	M	IND
2	Ajay	Panda	26	M	AUS
3	Sivam	Prasad	22	M	ENG
4	Pinky	Singh	26	F	AUS
5	Rahul	Kumar	24	M	BAN
6	Aditya	Das	29	M	IND
7	Avik	Das	28	M	IND
8	Shital	Jena	23	F	ENG
9	Soham	Tiwari	26	M	NZ

1. Create a table Customer with following attributes:
   Customer ID, First name, Last name, age of customer, gender of customer and present address of customer.
2. Display the structure of the created customer table.
3. Insert the following values in the table.
4. Retrieve and display the customer table with all values of attributes.
5. Retrieve and display all customer names.
6. Display the gender of all customers.
7. Fetch the unique addresses from customer table.
8. Display the current age and the age of customers after 2 years.
9. Combine the first and last name of customers and display it.
10. Retrieve the IDs of customer who lives in IND.
11. Display the customer details whose age is more than 25 years.
12. Display the IDs of customer who don't live in ENG.
13. Display the customer IDs and gender who either lives in AUS or age is 26.
14. Fetch all customer details whose name end with 'Das'.
15. List all customer IDs whose name starts with 'S'.
16. List out the customer age whose first name has 'i' as the 3rd letter.
17. Retrieve the customer details whose age is between 24 years to 28 years.
18. List out the customer address whose name has a 'n' alphabet in it.

Q1.

```
SQL> create table cust20051136(
  2  CustID number(10),
  3  Fname varchar2(20),
  4  Lname varchar2(20),
  5  Age number(3),
  6  Gender char(1),
  7  LOC varchar2(10)
  8  );

Table created.
```

Q2.

```
SQL> desc cust20051136;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CUSTID                                             NUMBER(10)
 FNAME                                              VARCHAR2(20)
 LNAME                                              VARCHAR2(20)
 AGE                                                NUMBER(3)
 GENDER                                             CHAR(1)
 LOC                                                VARCHAR2(10)
```

Q3.

```
SQL> insert into cust20051136 values (1, 'Raj', 'Kumar', 23, 'M', 'IND');

1 row created.

SQL> insert into cust20051136 values (2, 'Ajay', 'Panda', 26, 'M', 'AUS');

1 row created.

SQL> insert into cust20051136 values (3, 'Sivam', 'Prasad', 22, 'M', 'ENG');

1 row created.

SQL> insert into cust20051136 values (4, 'Pinky', 'Singh', 26, 'F', 'AUS');

1 row created.

SQL> insert into cust20051136 values (5, 'Rahul', 'Kumar', 24, 'M', 'BAN');

1 row created.

SQL>
SQL> insert into cust20051136 values (6, 'Aditya', 'Das', 29, 'M', 'IND');

1 row created.

SQL> insert into cust20051136 values (7, 'Avik', 'Das', 28, 'M', 'IND');

1 row created.

SQL> insert into cust20051136 values (8, 'Shital', 'Jena', 23, 'F', 'ENG');

1 row created.

SQL> insert into cust20051136 values (9, 'Soham', 'Tiwari', 26, 'M', 'NZ');

1 row created.
```

Q4.

```
SQL> select * from cust20051136;

    CUSTID FNAME                LNAME                     AGE G LOC
---------- -------------------- -------------------- ---------- - ----------
         1 Raj                  Kumar                        23 M IND
         2 Ajay                 Panda                        26 M AUS
         3 Sivam                Prasad                       22 M ENG
         4 Pinky                Singh                        26 F AUS
         5 Rahul                Kumar                        24 M BAN
         6 Aditya               Das                          29 M IND
         7 Avik                 Das                          28 M IND
         8 Shital               Jena                         23 F ENG
         9 Soham                Tiwari                       26 M NZ

9 rows selected.
```

Q5.

```
SQL> select FNAME, LNAME from cust20051136;

FNAME                LNAME
-------------------- --------------------
Raj                  Kumar
Ajay                 Panda
Sivam                Prasad
Pinky                Singh
Rahul                Kumar
Aditya               Das
Avik                 Das
Shital               Jena
Soham                Tiwari

9 rows selected.
```

Q6.

```
SQL> select FNAME, LNAME, GENDER from cust20051136;

FNAME                LNAME                G
-------------------- -------------------- -
Raj                  Kumar                M
Ajay                 Panda                M
Sivam                Prasad               M
Pinky                Singh                F
Rahul                Kumar                M
Aditya               Das                  M
Avik                 Das                  M
Shital               Jena                 F
Soham                Tiwari               M

9 rows selected.
```

Q7.

```
SQL> select distinct LOC from cust20051136;

LOC
----------
AUS
NZ
ENG
IND
BAN
```

Q8.

```
SQL> select AGE, AGE+2 "NewAge" from cust20051136;

       AGE     NewAge
---------- ----------
        23         25
        26         28
        22         24
        26         28
        24         26
        29         31
        28         30
        23         25
        26         28

9 rows selected.
```

Q9.

```
SQL> select FNAME ||'  '||LNAME from cust20051136;

FNAME||''||LNAME
----------------------------------------
Raj  Kumar
Ajay  Panda
Sivam  Prasad
Pinky  Singh
Rahul  Kumar
Aditya  Das
Avik  Das
Shital  Jena
Soham  Tiwari

9 rows selected.
```

Q10.

```
SQL> select custID from cust20051136 where LOC='IND';

    CUSTID
----------
         1
         6
         7
```

Q11.

```
SQL> select * from cust20051136 where AGE>25;

    CUSTID FNAME               LNAME                     AGE G LOC
---------- ------------------- ------------------- ---------- - ----------
         2 Ajay                Panda                       26 M AUS
         4 Pinky               Singh                       26 F AUS
         6 Aditya              Das                         29 M IND
         7 Avik                Das                         28 M IND
         9 Soham               Tiwari                      26 M NZ
```

Q12.

```
SQL> select custID from cust20051136 where LOC!='ENG';

    CUSTID
----------
         1
         2
         4
         5
         6
         7
         9

7 rows selected.
```

Q13.

```
SQL> select custID,GENDER from cust20051136 where LOC='AUS' OR AGE=26;

    CUSTID G
---------- -
         2 M
         4 F
         9 M
```

Q14

```
SQL> select * from cust20051136 where Lname='Das';

    CUSTID FNAME               LNAME                     AGE G LOC
---------- ------------------- ------------------- ---------- - ----------
         6 Aditya              Das                         29 M IND
         7 Avik                Das                         28 M IND
```

Q15.

```
SQL> select custID from cust20051136 where Fname like 'S%';

    CUSTID
----------
         3
         8
         9
```

Q16.

```
SQL> select AGE from cust20051136 where Fname like '__i%';

       AGE
----------
        29
        28
        23
```

Q17.

```
SQL> select * from cust20051136 where AGE between 24 and 28;

    CUSTID FNAME                LNAME                     AGE G LOC
---------- -------------------- -------------------- ---------- - ----------
         2 Ajay                 Panda                      26 M AUS
         4 Pinky                Singh                      26 F AUS
         5 Rahul                Kumar                      24 M BAN
         7 Avik                 Das                        28 M IND
         9 Soham                Tiwari                     26 M NZ
```

Q18.

```
SQL> select LOC  from cust20051136 where Fname like '%n%';

LOC
----------
AUS
```

JANUARY 27TH, 2022

ASSIGNMENT-2

1. Retrieve the details from the table DEPOSIT(roll number)
2. Calculate TA(10% of amount),DA(20% of amount) and TOTAL of each customer from BORROW(roll number) table also project CNAME & AMOUNT.
3. Retrieve the customer name, account no of DEPOSIT(roll number).
4. Retrieve the name of the customer living in NAGPUR.
5. Retrieve the name of the customers who opened account after 17-NOV-95.
6. Retrieve the account number and amount of the customer having account opened between 01-12-95 and 01-06.96.
7. Retrieve all the records from the table DEPOSIT(roll number) where CNAME begins with C..
8. Retrieve all the records from the table BORROW(roll number) where 2nd character of CNAME is U.
9. Retrieve all the records from the table DEPOSIT(roll number) where branch name is CHANDNI or MGROAD.
10. Retrieve all the records from the table DEPOSIT(roll number) where branch name is not in CHANDNI or MGROAD.
11. Retrieve all the records from the table BORROW(roll number) where amount in between 2000 and 3000.
12. Retrieve all the records from DEPOSIT(roll number). where amount > 1000 and arrange the customer name in ascending order.
13. Retrieve all the records from BOOROW(roll number) where amount>1000 and arrange customer name in ascending and branch name in descending order.
14. Find out the tables which are created by the user.
15. Retrieve customer details from BORROW(roll number) table where the third character of the customer name is either 'A' or 'D'.
16. Retrieve all the records from the table BORROW(roll number) where amount is not between 2000 and 8000.
17. Find out the unique records from the table DEPOSIT(roll number).

```
SQL> select * from deposit20051136;

ACTNO CNAME                BNAME                     AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
100   ANIL                 VRCE                       1000 01-MAR-95
101   SUNIL                AJNI                       5000 04-JAN-96
102   RAHUL                KAROLBAGH                  3500 17-NOV-95
103   MADHURI              CHANDNI                    1200 17-DEC-95
105   SANDIP               KAROLBAGH                  2000 31-MAR-96
104   Pramod               MGROAD                     3000 27-MAR-96

6 rows selected.
```

```
SQL> select cname, amount, 0.1*amount "TA", 0.2*amount "DA", amount+0.1*amount+0.2*amount "Total" from borrow20051136;

CNAME                AMOUNT         TA         DA      Total
-------------------- ---------- ---------- ---------- ----------
Pramod                 8000        800       1600      10400
ANIL                   1000        100        200       1300
RAHUL                  5000        500       1000       6500
SUNIL                  3000        300        600       3900
MADHURI                2000        200        400       2600
```

```
SQL> select actno, cname from deposit20051136;

ACTNO CNAME
----- --------------------
100   ANIL
101   SUNIL
102   RAHUL
103   MADHURI
105   SANDIP
104   Pramod

6 rows selected.
```

```
SQL> select cname from customer20051136 where CITY='NAGPUR' OR CITY='Nagpur';

CNAME
--------------------
Pramod
MADHURI
```

```
SQL> select cname from deposit20051136 where ADATE>'17-NOV-95';

CNAME
--------------------
SUNIL
MADHURI
SANDIP
Pramod
```

```
SQL> select actno, amount from deposit20051136 where ADATE between '01-DEC-95' and '01-JUN-96';

ACTNO     AMOUNT
----- ----------
101         5000
103         1200
105         2000
104         3000
```

```
SQL> select * from deposit20051136 where CNAME like 'C%';

no rows selected
```

```
SQL> select * from borrow20051136 where CNAME like '_U%';

LOANN CNAME                BNAME                    AMOUNT
----- -------------------- -------------------- ----------
311   SUNIL                DHARAMPEETH                3000
```

```
SQL> select * from deposit20051136 where BNAME!='CHANDNI' OR BNAME!='MGROAD';

ACTNO CNAME                BNAME                    AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
100   ANIL                 VRCE                       1000 01-MAR-95
101   SUNIL                AJNI                       5000 04-JAN-96
102   RAHUL                KAROLBAGH                  3500 17-NOV-95
103   MADHURI              CHANDNI                    1200 17-DEC-95
105   SANDIP               KAROLBAGH                  2000 31-MAR-96
104   Pramod               MGROAD                     3000 27-MAR-96
```

```
SQL> select * from deposit20051136 where BNAME='CHANDNI' OR BNAME='MGROAD';

ACTNO CNAME                BNAME                    AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
103   MADHURI              CHANDNI                    1200 17-DEC-95
104   Pramod               MGROAD                     3000 27-MAR-96
```

```
SQL> select * from borrow20051136 where amount between 2000 and 3000;

LOANN CNAME                BNAME                    AMOUNT
----- -------------------- -------------------- ----------
311   SUNIL                DHARAMPEETH                3000
321   MADHURI              ANDHERI                    2000
```

```
SQL> select * from deposit20051136 where amount>1000 order by CNAME;

ACTNO CNAME                BNAME                    AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
103   MADHURI              CHANDNI                    1200 17-DEC-95
104   Pramod               MGROAD                     3000 27-MAR-96
102   RAHUL                KAROLBAGH                  3500 17-NOV-95
105   SANDIP               KAROLBAGH                  2000 31-MAR-96
101   SUNIL                AJNI                       5000 04-JAN-96
```

```
SQL> select * from borrow20051136 where amount>1000 order by CNAME, BNAME desc;

LOANN CNAME                BNAME                    AMOUNT
----- -------------------- -------------------- ----------
321   MADHURI              ANDHERI                    2000
375   Pramod               Vihar                      8000
206   RAHUL                AJNI                       5000
311   SUNIL                DHARAMPEETH                3000
```

```
SQL> select * from borrow20051136 where CNAME like '__A%' or CNAME like '__D%';

LOANN CNAME                BNAME                    AMOUNT
----- -------------------- -------------------- ----------
321   MADHURI              ANDHERI                    2000
```

```
SQL> select * from borrow20051136 where amount<2000 or amount>8000;

LOANN CNAME                BNAME                    AMOUNT
----- -------------------- -------------------- ----------
201   ANIL                 VRCE                       1000
```

```
SQL> select * from deposit20051136;

ACTNO CNAME                BNAME                    AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
100   ANIL                 VRCE                       1000 01-MAR-95
101   SUNIL                AJNI                       5000 04-JAN-96
102   RAHUL                KAROLBAGH                  3500 17-NOV-95
103   MADHURI              CHANDNI                    1200 17-DEC-95
105   SANDIP               KAROLBAGH                  2000 31-MAR-96
104   Pramod               MGROAD                     3000 27-MAR-96
```

```
SQL> select distinct amount from deposit20051136;

    AMOUNT
----------
      1000
      5000
      1200
      3500
      2000
      3000
```

FEBRUARY 3RD, 2022

```
SQL> update deposit20051136
  2  set amount=amount*0.1
  3  where bname='VRCE';

1 row updated.

SQL> select * from deposit20051136;

ACTNO CNAME                BNAME                    AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
100   ANIL                 VRCE                        100 01-MAR-95
101   SUNIL                AJNI                       5000 04-JAN-96
102   RAHUL                KAROLBAGH                  3500 17-NOV-95
103   MADHURI              CHANDNI                    1200 17-DEC-95
105   SANDIP               KAROLBAGH                  2000 31-MAR-96
104   Pramod               MGROAD                     3000 27-MAR-96
```

```
SQL> update deposit20051136
  2  set amount=amount+amount*0.1
  3  where bname='VRCE' AND cname='ANIL';

1 row updated.

SQL> select * from deposit20051136;

ACTNO CNAME                BNAME                    AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
100   ANIL                 VRCE                       1210 01-MAR-95
101   SUNIL                AJNI                       5000 04-JAN-96
102   RAHUL                KAROLBAGH                  3500 17-NOV-95
103   MADHURI              CHANDNI                    1200 17-DEC-95
105   SANDIP               KAROLBAGH                  2000 31-MAR-96
104   Pramod               MGROAD                     3000 27-MAR-96
```

```
SQL> create table STUDENT (
  2  name varchar(20),
  3  rollno number(10),
  4  branch varchar2(20),
  5  city varchar2(20));

Table created.

SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 NAME                                               VARCHAR2(20)
 ROLLNO                                             NUMBER(10)
 BRANCH                                             VARCHAR2(20)
 CITY                                               VARCHAR2(20)
```

```
SQL> insert into student values('Vijaya', 150, 'CSE', 'Chennai');

1 row created.

SQL> insert into student values('Sita', 202, 'ETC', 'Kolkata');

1 row created.

SQL> insert into student values('Ravi', 300, 'EEE', 'Delhi');

1 row created.

SQL> insert into student values('Basu', 165, 'ETC', 'Chennai');

1 row created.

SQL> insert into student values('Rasmi', 107, 'ETC', 'RKL');

1 row created.

SQL> insert into student values('Karan', 111, 'CSE', 'CTC');

1 row created.

SQL> insert into student values('Rekha', 117, 'BME', 'BBSR');

1 row created.
```

```
SQL> select * from student;

NAME                    ROLLNO BRANCH              CITY
-------------------- --------- -------------------- --------------------
Vijaya                     150 CSE                  Chennai
Sita                       202 ETC                  Kolkata
Ravi                       300 EEE                  Delhi
Basu                       165 ETC                  Chennai
Rasmi                      107 ETC                  RKL
Karan                      111 CSE                  CTC
Rekha                      117 BME                  BBSR

7 rows selected
```

```
SQL> select count(branch) from student;

COUNT(BRANCH)
-------------
            7

SQL> select count(branch) from student where branch='CSE';

COUNT(BRANCH)
-------------
            2

SQL> select count(branch) from student where branch='ETC';

COUNT(BRANCH)
-------------
            3

SQL> select count(branch) from student where branch='EEE';

COUNT(BRANCH)
-------------
            1

SQL> select count(branch) from student where branch='BME';
```

```
SQL> select count(branch) from student where branch='BME';

COUNT(BRANCH)
-------------
            1

SQL> select count(branch) from student where branch like 'E%';

COUNT(BRANCH)
-------------
            4

SQL> delete from student where branch='ETC';

3 rows deleted.
```

```
SQL> select * from student;

NAME                    ROLLNO BRANCH               CITY
-------------------- ---------- -------------------- --------------------
Vijaya                      150 CSE                  Chennai
Ravi                        300 EEE                  Delhi
Karan                       111 CSE                  CTC
Rekha                       117 BME                  BBSR
```

```
SQL> rename student to studentinformation;

Table renamed.

SQL> alter table studentinformation add marks number(8);

Table altered.
```

```
SQL> desc studentinformation;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 NAME                                               VARCHAR2(20)
 ROLLNO                                             NUMBER(10)
 BRANCH                                             VARCHAR2(20)
 CITY                                               VARCHAR2(20)
 MARKS                                              NUMBER(8)
```

```
SQL> alter table studentinformation modify name varchar2(25);

Table altered.

SQL> alter table studentinformation drop column marks;

Table altered.

SQL> desc studentinformation;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 NAME                                               VARCHAR2(25)
 ROLLNO                                             NUMBER(10)
 BRANCH                                             VARCHAR2(20)
 CITY                                               VARCHAR2(20)

SQL> delete from studentinformation;

4 rows deleted.
```

```
SQL> desc studentinformation;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 NAME                                               VARCHAR2(25)
 ROLLNO                                             NUMBER(10)
 BRANCH                                             VARCHAR2(20)
 CITY                                               VARCHAR2(20)

SQL> drop table studentinformation;

Table dropped.
```

```
SQL> select sum(amount) from deposit20051136;

SUM(AMOUNT)
-----------
      15910

SQL> select sum(amount) from deposit20051136 where adate>'04-JAN-96';

SUM(AMOUNT)
-----------
       5000

SQL> select count(bname) from deposit20051136;

COUNT(BNAME)
------------
           6
```

```
SQL> select max(amount) from deposit20051136 where bname='VRCE';

MAX(AMOUNT)
-----------
       1210
```

FEBRUARY 19TH, 2022

```
SQL> select sysdate from dual;

SYSDATE
---------
17-FEB-22

SQL> select * from dual;

D
-
X

SQL> select 4*5 from dual;

         4*5
----------
          20

SQL> select last_day(sysdate) from dual;

LAST_DAY(
---------
28-FEB-22

SQL> select months_between(sysdate, '17-feb-22') from dual;

MONTHS_BETWEEN(SYSDATE,'17-FEB-22')
-----------------------------------
                                  0

SQL> select months_between(sysdate, '17-feb-23') from dual;

MONTHS_BETWEEN(SYSDATE,'17-FEB-23')
```

```
-----------------------------------
                                   -12

SQL> select months_between(sysdate, '17-feb-21') from dual;

MONTHS_BETWEEN(SYSDATE,'17-FEB-21')
-----------------------------------
                                    12

SQL> clear
SQL> clear;
SQL> select 10 * 10 from dual;

         10*10
----------
           100

SQL> select sysdate from dual;

SYSDATE
---------
17-FEB-22

SQL> select abs(-20) from dual;

   ABS(-20)
----------
            20

SQL> select power(10,10) from dual;

POWER(10,10)
------------
   1.0000E+10

SQL> select sqrt(25) from dual;

   SQRT(25)
----------
              5

SQL> select round(23.565, 1) from dual;

ROUND(23.565,1)
---------------
                23.6

SQL> select lower('TRIDENT') from dual;
```

```
LOWER('
-------
trident

SQL> select upper('trident') from dual;

UPPER('
-------
TRIDENT

SQL> select substr('Oracle', 0, 3) from dual;

SUB
---
Ora

SQL> select extract(month from sysdate) from dual;

EXTRACT(MONTHFROMSYSDATE)
-------------------------
                        2

SQL> select months_between('01-jan-07', '01-may-07') from dual;

MONTHS_BETWEEN('01-JAN-07','01-MAY-07')
---------------------------------------
                                     -4

SQL> select abs(months_between('01-jan-07', '01-may-07')) from dual;

ABS(MONTHS_BETWEEN('01-JAN-07','01-MAY-07'))
--------------------------------------------
                                           4

SQL> select round(56.23, -1) from dual;

ROUND(56.23,-1)
---------------
             60

SQL> select round(56.23, -2) from dual;

ROUND(56.23,-2)
---------------
            100

SQL> select round(56.23, -3) from dual;
```

```
ROUND(56.23,-3)
---------------
              0

SQL> select mod(1600, 300) AS remainder from dual;

  REMAINDER
----------
        100



SQL> select * from customer20051136;

CNAME                CITY
-------------------- --------------------
Pramod               Nagpur
ANIL                 CALCUTTA
SUNIL                DELHI
RAHUL                BARODA
MADHURI              NAGPUR

SQL> select * from cust20051136;

    CUSTID FNAME                LNAME                AGE G LOC
---------- -------------------- -------------------- ---------- - ----------
         1 Raj                  Kumar                 23 M IND
         2 Ajay                 Panda                 26 M AUS
         3 Sivam                Prasad                22 M ENG
         4 Pinky                Singh                 26 F AUS
         5 Rahul                Kumar                 24 M BAN
         6 Aditya               Das                   29 M IND
         7 Avik                 Das                   28 M IND
         8 Shital               Jena                  23 F ENG
         9 Soham                Tiwari                26 M NZ

9 rows selected.

SQL> select max(age) from cust20051136;

   MAX(AGE)
----------
        29

SQL> select min(age) from cust20051136;

   MIN(AGE)
```

22

FEBRUARY 24TH, 2022

```
SQL> create table faculty(
  2  ID number(2), fname varchar(20) constraint a1 not null,
  3  lname varchar(20), age number(2) constraint s2 check (age>20 and age<60),
  4  address varchar(3) constraint a3 not null, dept varchar(10));

Table created.

SQL> drop table faculty;

Table dropped.

SQL> create table faculty(
  2  ID varchar(3), fname varchar(20) constraint a1 not null,
  3  lname varchar(20), age number(2) constraint s2 check (age>20 and age<60),
  4  address varchar(3) constraint a3 not null, dept varchar(10));

Table created.

SQL> desc faculty;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                                 VARCHAR2(3)
 FNAME                                     NOT NULL VARCHAR2(20)
 LNAME                                              VARCHAR2(20)
 AGE                                                NUMBER(2)
 ADDRESS                                   NOT NULL VARCHAR2(3)
 DEPT                                               VARCHAR2(10)

SQL> drop table faculty;

Table dropped.

SQL> create table faculty(
  2  ID varchar(3), fname varchar(20) constraint a1 not null,
  3  lname varchar(20), age number(2) constraint s2 check (age>20 and age<60),
```

```
  4    address varchar(3) constraint a3 not null, dept varchar(10), constraint a4 primary key(ID));

Table created.

SQL> desc faculty;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL VARCHAR2(3)
 FNAME                                     NOT NULL VARCHAR2(20)
 LNAME                                              VARCHAR2(20)
 AGE                                                NUMBER(2)
 ADDRESS                                   NOT NULL VARCHAR2(3)
 DEPT                                               VARCHAR2(10)

SQL> insert into faculty values ('A01', 'Nick', 'Jones', 34,'AUS', 'CSE');

1 row created.

SQL> insert into faculty values ('A02', 'Albert', 'Cruz', 43,'NZ', 'ELEC');

1 row created.

SQL> insert into faculty(ID, fname, lname, age, address) values ('A03', 'Priti', 'Roy', 46,'IND');

1 row created.

SQL> insert into faculty values ('A04', 'Rakesh', 'Ranjan', 54,'IND','IT');

1 row created.

SQL> insert into faculty values ('A05', 'Jyoti', 'Das', 28,'IND','MECH');

1 row created.

SQL> insert into faculty values ('B01', 'Maria', 'Jones', 25,'ENG','CIVIL');

1 row created.

SQL> insert into faculty values ('B02', 'Alen', 'Wright', 42,'NZ','CSE');

1 row created.

SQL> insert into faculty values ('B03', 'Blake', 'Taylor', 39,'AUS','ELEC');

1 row created.

SQL> insert into faculty values ('B04', 'Scott', 'Orton', 48,'USA','LAW');
```

```
1 row created.

SQL> insert into faculty values ('B05', 'Kris', 'Gopal', 59,'IND','IT');

1 row created.

SQL> insert into faculty values ('C01', 'Aryan', 'Mohanty', 23,'IND','CIVIL');

1 row created.


SQL> insert into faculty(ID, fname, age, address, dept) values ('C02', 'Samuel', 31,'SL','LAW');

1 row created.

SQL> insert into faculty values ('C03', 'Abir', 'Abrahim', 36,'IND','MECH');

1 row created.

SQL> select * from faculty;

ID   FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
A01 Nick                 Jones                 34 AUS CSE
A02 Albert               Cruz                  43 NZ    ELEC
A03 Priti                Roy                   46 IND
A04 Rakesh               Ranjan                54 IND IT
A05 Jyoti                Das                   28 IND MECH
B01 Maria                Jones                 25 ENG CIVIL
B02 Alen                 Wright                42 NZ    CSE
B03 Blake                Taylor                39 AUS ELEC
B04 Scott                Orton                 48 USA LAW
B05 Kris                 Gopal                 59 IND IT
C01 Aryan                Mohanty               23 IND CIVIL

ID   FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
C02 Samuel                                     31 SL    LAW
C03 Abir                 Abrahim               36 IND MECH

13 rows selected.

SQL> select * from faculty where address='AUS';

ID   FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
A01 Nick                 Jones                 34 AUS CSE
B03 Blake                Taylor                39 AUS ELEC
```

```
SQL> select ID from faculty where dept='CSE';

ID
---
A01
B02

SQL> select fname from faculty where age>40;

FNAME
--------------------
Albert
Priti
Rakesh
Alen
Scott
Kris

6 rows selected.

SQL> select * from faculty where fname like '%i%';

ID  FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
A01 Nick                 Jones                 34 AUS CSE
A03 Priti                Roy                   46 IND
A05 Jyoti                Das                   28 IND MECH
B01 Maria                Jones                 25 ENG CIVIL
B05 Kris                 Gopal                 59 IND IT
C03 Abir                 Abrahim               36 IND MECH

6 rows selected.


SQL> alter table faculty add(salary number(8) default 20000);

Table altered.

SQL> select fname from faculty order by age desc;

FNAME
--------------------
Kris
Rakesh
Scott
Priti
Albert
```

```
Alen
Blake
Abir
Nick
Samuel
Jyoti

FNAME
--------------------
Maria
Aryan

13 rows selected.

SQL> select dept from faculty where lname=NULL;

no rows selected

SQL> select dept from faculty where lname='NULL';

no rows selected

SQL> select dept from faculty where lname='';

no rows selected

SQL> select dept from faculty where lname is null;

DEPT
----------
LAW

SQL> select ID from faculty where lname like '%n';

ID
---
A04
B04

SQL> select count(ID) from faculty where address='IND';

  COUNT(ID)
----------
         6

SQL> update faculty set salary=40000 where age>40;

6 rows updated.
```

SQL> select * from faculty;

ID	FNAME	LNAME	AGE	ADD	DEPT	SALARY
A01	Nick	Jones	34	AUS	CSE	20000
A02	Albert	Cruz	43	NZ	ELEC	40000
A03	Priti	Roy	46	IND		40000

ID	FNAME	LNAME	AGE	ADD	DEPT	SALARY
A04	Rakesh	Ranjan	54	IND	IT	40000
A05	Jyoti	Das	28	IND	MECH	20000
B01	Maria	Jones	25	ENG	CIVIL	20000

ID	FNAME	LNAME	AGE	ADD	DEPT	SALARY
B02	Alen	Wright	42	NZ	CSE	40000
B03	Blake	Taylor	39	AUS	ELEC	20000
B04	Scott	Orton	48	USA	LAW	40000

ID	FNAME	LNAME	AGE	ADD	DEPT	SALARY

```
----------
B05 Kris                 Gopal                          59 IND IT
        40000

C01 Aryan                Mohanty                        23 IND CIVIL
        20000

C02 Samuel                                              31 SL    LAW
        20000


ID    FNAME                LNAME                          AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
       SALARY
----------
C03 Abir                 Abrahim                        36 IND MECH
        20000


13 rows selected.

SQL> select * from faculty;

ID    FNAME                LNAME                          AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
       SALARY
----------
A01 Nick                 Jones                          34 AUS CSE
        20000

A02 Albert               Cruz                           43 NZ    ELEC
        40000

A03 Priti                Roy                            46 IND
        40000


ID    FNAME                LNAME                          AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
       SALARY
----------
A04 Rakesh               Ranjan                         54 IND IT
        40000

A05 Jyoti                Das                            28 IND MECH
        20000

B01 Maria                Jones                          25 ENG CIVIL
```

```
        20000


ID    FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
      SALARY
----------
B02 Alen                   Wright                42 NZ    CSE
        40000

B03 Blake                  Taylor               39 AUS ELEC
        20000

B04 Scott                  Orton                 48 USA LAW
        40000


ID    FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
      SALARY
----------
B05 Kris                   Gopal                59 IND IT
        40000

C01 Aryan                  Mohanty               23 IND CIVIL
        20000

C02 Samuel                                       31 SL    LAW
        20000


ID    FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
      SALARY
----------
C03 Abir                   Abrahim               36 IND MECH
        20000


13 rows selected.

SQL> set page width 500;
SP2-0158: unknown SET option "page"
SQL> set page-width 500;
SP2-0158: unknown SET option "page-width"
SQL> set page 500;
SP2-0158: unknown SET option "page"
SQL> set pagesize 500;
```

SQL> select * from faculty;

ID	FNAME	LNAME	AGE	ADD	DEPT	SALARY
A01	Nick	Jones	34	AUS	CSE	20000
A02	Albert	Cruz	43	NZ	ELEC	40000
A03	Priti	Roy	46	IND		40000
A04	Rakesh	Ranjan	54	IND	IT	40000
A05	Jyoti	Das	28	IND	MECH	20000
B01	Maria	Jones	25	ENG	CIVIL	20000
B02	Alen	Wright	42	NZ	CSE	40000
B03	Blake	Taylor	39	AUS	ELEC	20000
B04	Scott	Orton	48	USA	LAW	40000
B05	Kris	Gopal	59	IND	IT	40000
C01	Aryan	Mohanty	23	IND	CIVIL	20000
C02	Samuel		31	SL	LAW	20000
C03	Abir	Abrahim	36	IND	MECH	20000

13 rows selected.

```
SQL> set rowsize 500;
SP2-0158: unknown SET option "rowsize"
SQL> select * from faculty where dept='MECH';

ID    FNAME                LNAME                AGE ADD DEPT
--- -------------------- -------------------- ---------- --- ----------
       SALARY
----------
A05 Jyoti                Das                  28 IND MECH
        20000

C03 Abir                 Abrahim              36 IND MECH
        20000


SQL> update faculty set dept='LAW' where ID='A03';

1 row updated.

SQL> select unique(id) from faculty;

ID
---
A01
A02
A03
A04
A05
B01
B02
B03
B04
B05
C01
C02
C03

13 rows selected.

SQL> select unique(dept) from faculty;

DEPT
----------
LAW
IT
ELEC
CIVIL
CSE
```

```
MECH

6 rows selected.

SQL> select ID from faculty where address='US' or address='NZ';

ID
---
A02
B02

SQL> select ID from faculty where address='AUS' or address='NZ';

ID
---
A01
A02
B02
B03

SQL> update faculty set salary=60000 where dept!='LAW';

10 rows updated.

SQL> select max(age), min(age) from faculty;

   MAX(AGE)      MIN(AGE)
---------- ----------
         59             23

SQL> insert into faculty values ('D01','Aviroop', 'Paul', 22, 'IND', 'CSE', 50000);

1 row created.

SQL> select ascii(fname) from faculty where age=28;

ASCII(FNAME)
------------
          74

SQL> select fname||' '||lname from faculty where ID='B03';

FNAME||''||LNAME
----------------------------------------
Blake Taylor


SQL> select ID, avg(age) from faculty group by ID;
```

```
ID        AVG(AGE)
--- ----------
A03               46
B03               39
B05               59
A04               54
C02               31
D01               22
A02               43
B02               42
C01               23
A05               28
B01               25
B04               48
C03               36
A01               34

14 rows selected.


SQL> select avg(age) from faculty where age>30 group by ID;

   AVG(AGE)
----------
             46
             39
             59
             54
             31
             43
             42
             48
             36
             34

10 rows selected.

SQL> select ID, avg(age) from faculty where age>30 group by ID;

ID        AVG(AGE)
--- ----------
A03               46
B03               39
B05               59
A04               54
C02               31
```

```
A02             43
B02             42
B04             48
C03             36
A01             34

10 rows selected.

SQL>
```

MARCH 3RD, 2022

```
CREATE TABLE book (ID VARCHAR2(20), TITLE VARCHAR2(50)    NOT NULL, PUBLISHER VARCHAR2(30)
NOT NULL, AUTHOR VARCHAR2(30), COPIES NUMBER, AMT NUMBER);


insert into book values(1,'DBMS','Springer','Albert',12,3000);
insert into book values(2,'OS','IEEE','Pearson',9,7000);
insert into book values(3,'DBMS','IEEE','Korth',15,9000);
insert into book values(4,'NETWORKING','ELSEVIER','Chae',NULL,2000);
insert into book values(5,'ALGORITHM','IEEE','Spleen',7,4000);
insert into book values(6,'ALGORITHM','ELSEVIER','Patrick',10,5000);
insert into book values(7,'OS','ELSEVIER','Ginik',3,6000);
insert into book values(8,'DBMS','IEEE','Crawlin',NULL,9000);
insert into book values(9,'DBMS','PEARSON','Peter',18,16000);
insert into book values(10,'AUTOMATA','PEARSON','Galvin',8,6000);
insert into book values(11,'AUTOMATA','IEEE','Mark',NULL,14000);
insert into book values(12,'OS','Springer','Alice',7,5000);


select count(distinct author) from book;
select author from book where title = 'OS';
select copies from book where title = 'DBMS' and publisher = 'IEEE';
select sum((copies * amt))"total revenue" from book;
select id from book order by (copies * amt) desc;
select id from book where author like '_a%';

SELECT DISTINCT PUBLISHER FROM book;

select id,copies,(copies * amt)"revenue" from book where id = 9;

SELECT count(TITLE) FROM book WHERE COPIES is NOT NULL;
```

```
Set linesize200;

select * from book where (copies * amt) = (select max(copies * amt) from book);

select distinct publisher,copies from book;

select distinct publisher,copies from book where copies > 10;

select publisher,(copies * amt)"Revenue" from book where publisher = 'ELSEVIER' and (amt * copies) is
not null;

select max(amt * copies)"Maximum Revenue",min(amt * copies)"Minimum Revenue", AVG(amt *
copies)"Average Revenue" from book;

SELECT CURRENT_TIMESTAMP from DUAL;

SELECT TITLE ||'    '|| PUBLISHER FROM BOOK;

select substr(author_first_name,3) from books;

select avg(copies * amt) from books group by title;
```

MARCH 31ST , 2022

```
Microsoft Windows [Version 10.0.22000.556]
(c) Microsoft Corporation. All rights reserved.

C:\Users\KIIT>sqlplus

SQL*Plus: Release 11.2.0.2.0 Production on Thu Mar 31 09:16:51 2022

Copyright (c) 1982, 2014, Oracle.    All rights reserved.

Enter user-name: Aviroop
Enter password:

Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production

SQL> create table Book (
  2    ;
```

```
*
ERROR at line 2:
ORA-00904: : invalid identifier


SQL> desc book;
ERROR:
ORA-04043: object book does not exist


SQL> select * from book;
select * from book
                  *
ERROR at line 1:
ORA-00942: table or view does not exist


SQL> create table book{
  2  ;
create table book{
                     *
ERROR at line 1:
ORA-00911: invalid character


SQL> create table book(
  2  ID varchar(5),
  3  Title varchar(20),
  4  Author varchar(30),
  5  YOP number,
  6  Publisher varchar(30)
  7  );

Table created.

SQL> create table article(
  2  ID varchar(5),
  3  Title varchar(20),
  4  Author varchar(30),
  5  YOP number,
  6  Publisher varchar(30)
  7  );

Table created.

SQL> insert into book values ('B01', 'DBMS', 'Navathe', 2017, 'Pearson');
```

```
1 row created.

SQL> insert into book values ('B02', 'SE', 'Rajib Mall', 2015, 'EEE');

1 row created.

SQL> insert into book values ('B03', 'C Prog.', 'Y Kantekar', 2009, 'TMH');

1 row created.

SQL> insert into book values ('B04', 'OS', 'Galvin', 2015, 'TMH');

1 row created.

SQL> insert into book values ('B05', 'DSA', 'Forouzan', 2017, 'Pearson');

1 row created.

SQL> insert into article values ('A01', 'Testing', 'Rajib Mall', 2017, 'Springer');

1 row created.

SQL> insert into article values ('A02', 'Pointers', 'Balagurusamy', 2012, 'IEEE');

1 row created.

SQL> insert into article values ('A03', 'BST', 'Amiya Rath', 2015, 'Elsevier');

1 row created.

SQL> insert into article values ('A04', 'ML', 'Ajay Jena', 2018, 'IEEE');

1 row created.

SQL> insert into article values ('A05', 'TCP', 'Rajib Mall', 2017, 'Springer');

1 row created.

SQL> select * from book;

ID    TITLE                AUTHOR                                    YOP
----- -------------------- ------------------------------ ----------
PUBLISHER
------------------------------
B01   DBMS                 Navathe                                   2017
Pearson

B02   SE                   Rajib Mall                                2015
```

EEE

B03 C Prog. Y Kantekar 2009
TMH

ID TITLE AUTHOR YOP
----- ------------------- ------------------------------ ----------
PUBLISHER

B04 OS Galvin 2015
TMH

B05 DSA Forouzan 2017
Pearson

SQL> select * from article;

ID TITLE AUTHOR YOP
----- ------------------- ------------------------------ ----------
PUBLISHER

A01 Testing Rajib Mall 2017
Springer

A02 Pointers Balagurusamy 2012
IEEE

A03 BST Amiya Rath 2015
Elsevier

ID TITLE AUTHOR YOP
----- ------------------- ------------------------------ ----------
PUBLISHER

A04 ML Ajay Jena 2018
IEEE

A05 TCP Rajib Mall 2017
Springer

SQL> select * from book intersect select * from article;

no rows selected

```
SQL> select book.author from book intersect select article.author from article;

AUTHOR
------------------------------
Rajib Mall

SQL> select book.author from book union select article.author from article;

AUTHOR
------------------------------
Ajay Jena
Amiya Rath
Balagurusamy
Forouzan
Galvin
Navathe
Rajib Mall
Y Kantekar

8 rows selected.

SQL> select book.author from book minus select article.author from article;

AUTHOR
------------------------------
Forouzan
Galvin
Navathe
Y Kantekar

SQL> select article.author from article minus select book.author from book;

AUTHOR
------------------------------
Ajay Jena
Amiya Rath
Balagurusamy

SQL> select * from book cross join article;

ID        TITLE                          AUTHOR                                                  YOP
----- -------------------- ------------------------------ ----------
PUBLISHER                                    ID        TITLE
------------------------------ ----- --------------------
AUTHOR                                                 YOP PUBLISHER
------------------------------ ---------- ------------------------------
B01       DBMS                           Navathe                                                 2017
Pearson                                      A01       Testing
```

Rajib Mall 2017 Springer

B01 DBMS Navathe 2017
Pearson A02 Pointers
Balagurusamy 2012 IEEE

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------

B01 DBMS Navathe 2017
Pearson A03 BST
Amiya Rath 2015 Elsevier

B01 DBMS Navathe 2017
Pearson A04 ML

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------
Ajay Jena 2018 IEEE

B01 DBMS Navathe 2017
Pearson A05 TCP
Rajib Mall 2017 Springer

B02 SE Rajib Mall 2015

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------
EEE A01 Testing
Rajib Mall 2017 Springer

B02 SE Rajib Mall 2015
EEE A02 Pointers
Balagurusamy 2012 IEEE

ID TITLE AUTHOR YOP
----- -------------------- ------------------------------ ----------
PUBLISHER ID TITLE
------------------------------ ----- --------------------
AUTHOR YOP PUBLISHER
------------------------------ ---------- ------------------------------
B02 SE Rajib Mall 2015
EEE A03 BST
Amiya Rath 2015 Elsevier

B02 SE Rajib Mall 2015
EEE A04 ML
Ajay Jena 2018 IEEE

ID TITLE AUTHOR YOP
----- -------------------- ------------------------------ ----------
PUBLISHER ID TITLE
------------------------------ ----- --------------------
AUTHOR YOP PUBLISHER
------------------------------ ---------- ------------------------------

B02 SE Rajib Mall 2015
EEE A05 TCP
Rajib Mall 2017 Springer

B03 C Prog. Y Kantekar 2009
TMH A01 Testing

ID TITLE AUTHOR YOP
----- -------------------- ------------------------------ ----------
PUBLISHER ID TITLE
------------------------------ ----- --------------------
AUTHOR YOP PUBLISHER
------------------------------ ---------- ------------------------------
Rajib Mall 2017 Springer

B03 C Prog. Y Kantekar 2009
TMH A02 Pointers
Balagurusamy 2012 IEEE

B03 C Prog. Y Kantekar 2009

ID TITLE AUTHOR YOP
----- -------------------- ------------------------------ ----------
PUBLISHER ID TITLE
------------------------------ ----- --------------------
AUTHOR YOP PUBLISHER
------------------------------ ---------- ------------------------------

TMH A03 BST
Amiya Rath 2015 Elsevier

B03 C Prog. Y Kantekar 2009
TMH A04 ML
Ajay Jena 2018 IEEE

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------
B03 C Prog. Y Kantekar 2009
TMH A05 TCP
Rajib Mall 2017 Springer

B04 OS Galvin 2015
TMH A01 Testing
Rajib Mall 2017 Springer

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------

B04 OS Galvin 2015
TMH A02 Pointers
Balagurusamy 2012 IEEE

B04 OS Galvin 2015
TMH A03 BST

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------
Amiya Rath 2015 Elsevier

B04 OS Galvin 2015
TMH A04 ML
Ajay Jena 2018 IEEE

B04 OS Galvin 2015

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------
TMH A05 TCP
Rajib Mall 2017 Springer

B05 DSA Forouzan 2017
Pearson A01 Testing
Rajib Mall 2017 Springer

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------
B05 DSA Forouzan 2017
Pearson A02 Pointers
Balagurusamy 2012 IEEE

B05 DSA Forouzan 2017
Pearson A03 BST
Amiya Rath 2015 Elsevier

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------
AUTHOR YOP PUBLISHER
---------- ---------- ----------

B05 DSA Forouzan 2017
Pearson A04 ML
Ajay Jena 2018 IEEE

B05 DSA Forouzan 2017
Pearson A05 TCP

ID TITLE AUTHOR YOP
----- ---------- ---------- ----------
PUBLISHER ID TITLE
---------- ----- ----------

```
AUTHOR                                                  YOP PUBLISHER
------------------------------ ---------- --------------------------------
Rajib Mall                                              2017 Springer


25 rows selected.

SQL> create table student_31_3(
  2  SID varchar(5),
  3  sname varchar(20),
  4  sem number,
  5  dept varchar(10)
  6  );

Table created.

SQL> create table course_31_3(
  2  cid number,
  3  cname varchar(20),
  4  incharge varchar(5)
  5  );

Table created.

SQL> create table enroll_31_3(
  2  sid number,
  3  sname varchar(20),
  4  cid number,
  5  cname varchar(20)
  6  );

Table created.

SQL> drop student_31_3;
drop student_31_3
      *
ERROR at line 1:
ORA-00950: invalid DROP option


SQL> drop table student_31_3;

Table dropped.

SQL> create table student_31_3(
  2  SID number,
  3  sname varchar(20),
  4  sem number,
```

```
  5    dept varchar(10)
  6    );

Table created.

SQL> insert into student_31_3(
  2    100, 'abc', 1, 'it');
100, 'abc', 1, 'it')
*
ERROR at line 2:
ORA-00928: missing SELECT keyword


SQL> insert into student_31_3 values(
  2    100, 'abc', 1, 'it');

1 row created.

SQL> insert into student_31_3(101, 'xyz', 2, 'cse');
insert into student_31_3(101, 'xyz', 2, 'cse')
                                     *
ERROR at line 1:
ORA-00928: missing SELECT keyword


SQL> insert into student_31_3 values(101, 'xyz', 2, 'cse');

1 row created.

SQL> insert into student_31_3 values(102, 'pqr', 3, 'mech');

1 row created.

SQL> insert into student_31_3 values(103, 'mns', 4, 'elec');

1 row created.

SQL> insert into student_31_3 values(104, 'efg', 5, 'eee');

1 row created.

SQL> insert into course_31_3 values(1, 'it','abc');

1 row created.

SQL> insert into course_31_3 values(2, 'cse','xyz');

1 row created.
```

```
SQL> insert into course_31_3 values(3, 'mech','mns');

1 row created.

SQL> insert into course_31_3 values(4, 'eee','pqr');

1 row created.

SQL> insert into course_31_3 values(5, 'elec','def');

1 row created.

SQL> insert into enroll_31_3(sid, sname) values(100, 'abc');

1 row created.

SQL> insert into enroll_31_3(sid, sname) values(101, 'xyz');

1 row created.

SQL> insert into enroll_31_3(sid, sname) values(103, 'pqr');

1 row created.

SQL> insert into enroll_31_3 values(102, 'mns', 5, elec);
insert into enroll_31_3 values(102, 'mns', 5, elec)
                                               *
ERROR at line 1:
ORA-00984: column not allowed here


SQL> insert into enroll_31_3 values(102, 'mns', 5, 'elec');

1 row created.

SQL> insert into enroll_31_3 values(104, 'efg', 4, 'eee');

1 row created.

SQL> select * from student_31_3;

       SID SNAME                                SEM DEPT
---------- -------------------- ---------- ----------
       100 abc                               1 it
       101 xyz                              2 cse
       102 pqr                               3 mech
       103 mns                               4 elec
```

```
        104 efg                                    5 eee

SQL> select * from course_31_3;

        CID CNAME                      INCHA
---------- -------------------- -----
         1 it                          abc
         2 cse                         xyz
         3 mech                         mns
         4 eee                         pqr
         5 elec                        def

SQL> select * from enroll_31_3;

        SID SNAME                              CID CNAME
---------- -------------------- ---------- --------------------
        100 abc
        101 xyz
        103 pqr
        102 mns                                 5 elec
        104 efg                                4 eee

SQL> select * from student_31_3 left join enroll_31_3 on student_31_3.sid=enroll_31_3.sid;

        SID SNAME                              SEM DEPT                 SID
---------- -------------------- ---------- ---------- ----------
SNAME                                  CID CNAME
-------------------- ---------- --------------------
        100 abc                                 1 it                    100
abc

        101 xyz                                 2 cse                   101
xyz

        103 mns                                 4 elec                  103
pqr


        SID SNAME                              SEM DEPT                 SID
---------- -------------------- ---------- ---------- ----------
SNAME                                  CID CNAME
-------------------- ---------- --------------------
        102 pqr                                 3 mech                  102
mns                                     5 elec

        104 efg                                 5 eee                   104
efg                                    4 eee
```

```
SQL> select * from student_31_3 right join enroll_31_3 on student_31_3.sid=enroll_31_3.sid;

       SID SNAME                          SEM DEPT                 SID
---------- -------------------- ---------- ---------- ----------
SNAME                          CID CNAME
-------------------- ---------- --------------------
       100 abc                             1 it                  100
abc

       101 xyz                             2 cse                 101
xyz

       102 pqr                             3 mech                102
mns                                    5 elec


       SID SNAME                          SEM DEPT                 SID
---------- -------------------- ---------- ---------- ----------
SNAME                          CID CNAME
-------------------- ---------- --------------------
       103 mns                             4 elec                103
pqr

       104 efg                             5 eee                 104
efg                                    4 eee

SQL> select * from student_31_3 full join enroll_31_3 on student_31_3.sid=enroll_31_3.sid;

       SID SNAME                          SEM DEPT                 SID
---------- -------------------- ---------- ---------- ----------
SNAME                          CID CNAME
-------------------- ---------- --------------------
       100 abc                             1 it                  100
abc

       101 xyz                             2 cse                 101
xyz

       103 mns                             4 elec                103
pqr


       SID SNAME                          SEM DEPT                 SID
---------- -------------------- ---------- ---------- ----------
SNAME                          CID CNAME
-------------------- ---------- --------------------
```

```
        102 pqr                         3 mech                  102
mns                             5 elec

        104 efg                         5 eee                   104
efg                             4 eee


SQL>
```

APRIL 7TH, 2022

```
Microsoft Windows [Version 10.0.22000.556]
(c) Microsoft Corporation. All rights reserved.

C:\Users\KIIT>sqlplus

SQL*Plus: Release 11.2.0.2.0 Production on Thu Apr 7 09:55:19 2022

Copyright (c) 1982, 2014, Oracle.    All rights reserved.

Enter user-name: Aviroop
Enter password:

Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production

SQL> create table supplier(sid number, sname varchar(20), location varchar(50));

Table created.

SQL> create table part(pid number, pname varchar(20), color varchar(50));

Table created.

SQL> create table cata(sid number, pid number, cost number);

Table created.

SQL> insert into supplier values(
  2    100, 'SS', 'ab');
```

```
1 row created.

SQL> insert into supplier values(101, 'sb', 'ac');

1 row created.

SQL> insert into supplier values(102, 'sc', 'ad');

1 row created.

SQL> insert into supplier values(103, 'sd', 'ae');

1 row created.

SQL> insert into supplier values(104, 'se', 'af');

1 row created.

SQL> insert into part values(200, 'pa', 'red');

1 row created.

SQL> insert into part values(201, 'pb', 'blue');

1 row created.

SQL> insert into part values(202, 'pc', 'green');

1 row created.

SQL> insert into part values(203, 'pd', 'yellow');

1 row created.

SQL> insert into part values(204, 'pd', 'orange');

1 row created.

SQL> insert into cata values(100,200,10);

1 row created.

SQL> insert into cata values(101,201,20);

1 row created.

SQL> insert into cata values(102,202,30);
```

```
1 row created.

SQL> insert into cata values(103,203,40);

1 row created.

SQL> insert into cata values(104,204,50);

1 row created.

SQL> insert into cata values(105,205,60);

1 row created.

SQL> insert into cata values(106,206,70);

1 row created.

SQL> insert into cata values(107,207,80);

1 row created.

SQL> insert into cata values(108,208,90);

1 row created.

SQL> insert into cata values(109,209,100);

1 row created.

SQL> insert into cata values(110,210,110);

1 row created.

SQL> insert into cata values(111,211,120);

1 row created.

SQL> insert into cata values(112,213,130);

1 row created.

SQL> insert into cata values(113,213,140);

1 row created.

SQL> insert into cata values(114,214,150);
```

```
1 row created.

SQL> update cata set pid=212 where sid=112;

1 row updated.

SQL> update part set pname='pe' where pid=204;

1 row updated.

SQL> select * from supplier;

       SID SNAME
---------- --------------------
LOCATION
--------------------------------------------------
       100 SS
ab

       101 sb
ac

       102 sc
ad


       SID SNAME
---------- --------------------
LOCATION
--------------------------------------------------
       103 sd
ae

       104 se
af


SQL> select * from supplier;

       SID SNAME
---------- --------------------
LOCATION
--------------------------------------------------
       100 SS
ab

       101 sb
ac
```

```
        102 sc
ad


        SID SNAME
---------- --------------------
LOCATION
--------------------------------------------------
        103 sd
ae

        104 se
af


SQL> set linesize 200;
SQL> select * from supplier;

        SID SNAME                LOCATION
---------- -------------------- --------------------------------------------------
        100 SS                   ab
        101 sb                   ac
        102 sc                   ad
        103 sd                   ae
        104 se                   af

SQL> select * from part;

        PID PNAME                COLOR
---------- -------------------- --------------------------------------------------
        200 pa                   red
        201 pb                   blue
        202 pc                   green
        203 pd                   yellow
        204 pe                   orange

SQL> select * from cata;

        SID        PID       COST
---------- ---------- ----------
        100        200         10
        101        201         20
        102        202         30
        103        203         40
        104        204         50
        105        205         60
        106        206         70
```

```
       107        207         80
       108        208         90
       109        209        100
       110        210        110

       SID        PID       COST
---------- ---------- ----------
       111        211        120
       112        212        130
       113        213        140
       114        214        150

15 rows selected.

SQL> select sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where
color='red';
select sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where color='red'
       *
ERROR at line 1:
ORA-00918: column ambiguously defined


SQL> select sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where
part.color='red';
select sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where
part.color='red'
       *
ERROR at line 1:
ORA-00918: column ambiguously defined


SQL> select sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid;
select sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid
       *
ERROR at line 1:
ORA-00918: column ambiguously defined


SQL> select supplier.sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid
where color='red';

       SID
----------
       100

SQL> select supplier.sid, supplier.location from supplier join cata on supplier.sid=cata.sid join part on
part.pid=cata.pid where color='green';
```

```
       SID LOCATION
---------- --------------------------------------------------
       102 ad

SQL> select supplier.sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid
where color='yellow' or color='green';

       SID
----------
       102
       103

SQL> select supplier.sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid
where color='red' or color='blue';

       SID
----------
       100
       101

SQL> select supplier.sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid
where color='yellow' and color='green';

no rows selected

SQL> select supplier.sid from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid
where color='green' or location='BBSR';

       SID
----------
       102

SQL> select * from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where
color='red';

       SID SNAME                          LOCATION
           SID              PID             COST              PID PNAME                          COLOR
---------- -------------------- -------------------------------------------------- ---------- ---------- ---------- ---------- -------------
------- --------------------------------------------------
       100 SS                             ab
           100              200              10              200 pa                             red

SQL> select * from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where
color='red';

       SID SNAME                          LOCATION
SID              PID             COST              PID PNAME                          COLOR
```

---------- -------------------- -- ---------- ---------- ---------- ---------- -------------
------- --
100 SS ab
100 200 10 200 pa red

SQL> select * from unique(supplier) join cata on supplier.sid=cata.sid join part on part.pid=cata.pid
where color='red';
select * from unique(supplier) join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where
color='red'
*
ERROR at line 1:
ORA-00903: invalid table name

SQL> select * from supplier join cata on supplier.sid=cata.sid join part on part.pid=cata.pid where
color='red';

SID SNAME LOCATION
SID PID COST PID PNAME COLOR
---------- -------------------- -- ---------- ---------- ---------- ---------- -------------
------- --
100 SS ab
100 200 10 200 pa red

SQL> select supplier.sid, supplier.sname, supplier.location from supplier join cata on
supplier.sid=cata.sid join part on part.pid=cata.pid where color='red';

SID SNAME LOCATION
---------- -------------------- --
100 SS ab

SQL> select supplier.sid, supplier.sname, supplier.location from supplier join cata on
supplier.sid=cata.sid join part on part.pid=cata.pid where color!='green';

SID SNAME LOCATION
---------- -------------------- --
100 SS ab
101 sb ac
103 sd ae
104 se af

SQL> select * from deposit20051136;

ACTNO CNAME BNAME AMOUNT ADATE
----- -------------------- -------------------- ---------- ---------
100 ANIL VRCE 1210 01-MAR-95
101 SUNIL AJNI 5000 04-JAN-96
102 RAHUL KAROLBAGH 3500 17-NOV-95

```
103     MADHURI                 CHANDNI                         1200 17-DEC-95
105     SANDIP                  KAROLBAGH                       2000 31-MAR-96
104     Pramod                  MGROAD                          3000 27-MAR-96

6 rows selected.

SQL> select cname from deposit20051136 where bname=(select bname from deposit20051136 where
cname='SUNIL');

CNAME
--------------------
SUNIL

SQL> select * from customer20051136;

CNAME                           CITY
-------------------- --------------------
Pramod                          Nagpur
ANIL                           CALCUTTA
SUNIL                          DELHI
RAHUL                           BARODA
MADHURI                         NAGPUR

SQL> select deposit20051136.actno, deposit20051136.amount from deposit20051136 join
customer20051136 on deposit20051136.cname=customer20051136.cname where city='Nagpur' or
city='NAGPUR';

ACTNO         AMOUNT
----- ----------
103             1200
104             3000

SQL> select deposit20051136.city from deposit20051136 join customer20051136 on
deposit20051136.cname=customer20051136.cname where bname='KAROLBAGH';
select deposit20051136.city from deposit20051136 join customer20051136 on
deposit20051136.cname=customer20051136.cname where bname='KAROLBAGH'
           *
ERROR at line 1:
ORA-00904: "DEPOSIT20051136"."CITY": invalid identifier


SQL> select cust20051136.city from deposit20051136 join customer20051136 on
deposit20051136.cname=customer20051136.cname where bname='KAROLBAGH';
select cust20051136.city from deposit20051136 join customer20051136 on
deposit20051136.cname=customer20051136.cname where bname='KAROLBAGH'
           *
ERROR at line 1:
ORA-00904: "CUST20051136"."CITY": invalid identifier
```

```
SQL> select customer20051136.city from deposit20051136 join customer20051136 on
deposit20051136.cname=customer20051136.cname where bname='KAROLBAGH';

CITY
--------------------
BARODA

SQL> select customer20051136 from deposit20051136 where bname=(select bname from
deposit20051136 where cname='SUNIL' or cname='ANIL');
select customer20051136 from deposit20051136 where bname=(select bname from deposit20051136
where cname='SUNIL' or cname='ANIL')
               *
ERROR at line 1:
ORA-00904: "CUSTOMER20051136": invalid identifier


SQL> select customer20051136.city from deposit20051136 where bname=(select bname from
deposit20051136 where cname='SUNIL' or cname='ANIL');
select customer20051136.city from deposit20051136 where bname=(select bname from
deposit20051136 where cname='SUNIL' or cname='ANIL')
               *
ERROR at line 1:
ORA-00904: "CUSTOMER20051136"."CITY": invalid identifier


SQL> select customer20051136.city from customer20051136 join deposit20051136 on
customer20051136.cname=deposit20051136.cname where bname=(select bname from
deposit20051136 where cname='SUNIL' or cname='ANIL');
select customer20051136.city from customer20051136 join deposit20051136 on
customer20051136.cname=deposit20051136.cname where bname=(select bname from
deposit20051136 where cname='SUNIL' or cname='ANIL')

*
ERROR at line 1:
ORA-01427: single-row subquery returns more than one row


SQL> select customer20051136.city from customer20051136 join deposit20051136 on
customer20051136.cname=deposit20051136.cname where cname='SUNIL' or cname='ANIL';
select customer20051136.city from customer20051136 join deposit20051136 on
customer20051136.cname=deposit20051136.cname where cname='SUNIL' or cname='ANIL'

*
ERROR at line 1:
ORA-00918: column ambiguously defined
```

SQL> select * from branch20051136;

BNAME	CITY
MGRoad	Bangalore
VRCE	NAGPUR
AJNI	NAGPUR
KAROLBAGH	DELHI
CHANDNI	DELHI

SQL> select branch20051136.city from branch20051136 where bname=(select bname from deposit20051136 where cname='SUNIL' or cname='ANIL');
select branch20051136.city from branch20051136 where bname=(select bname from deposit20051136 where cname='SUNIL' or cname='ANIL')
*

ERROR at line 1:
ORA-01427: single-row subquery returns more than one row

SQL> select branch20051136.city from branch20051136 where bname=(select bname from deposit20051136 where cname='SUNIL' or cname='ANIL');

APRIL 28TH, 2022

Q1.

```
declare
a number(2);
b number(2);
c number(2);
begin
  a:=&a;
  b:=&b;
  c:=a+b;
  dbms_output.put_line(a|| '+' ||b|| '=' ||c);
end;
/
```

Q2.

```
declare
a number:=&a;
b number:=&b;
```

```
c number:=&c;
begin
  dbms_output.put_line('a= '||a||' b= '||b||' c= '||c);
  if a>b AND a>c
  then
  dbms_output.put_line('a is greatest');
  else
  if b>a AND b>c
  then
  dbms_output.put_line('b is greatest');
  else
  dbms_output.put_line('c is greatest');
  end if;
  end if;
end;
/
```

Q3.

```
declare
n number(5);
begin
  n:=&n;
  if(mod(n,2)=0)
  then
  dbms_output.put_line('even');
  else
  dbms_output.put_line('odd');
  end if;
end;
/
```

Q4.

```
declare
n number;
i number;
rev number:=0;
r number;
begin
  n:=&n;
  while n>0
  loop
    r:=mod(n,10);
    rev:=(rev*10)+r;
    n:=trunc(n/10);
  end loop;
      dbms_output.put_line('Reversed: '||rev);
end;
/
```

Q5.

```
declare
n number:=&n;
i number;
m number:=0;
f number:=0;
begin
  m:=n/2;
  for i in 2 .. m  loop
      if (mod(n,i)=0) then
        dbms_output.put_line('not prime');
        f:=1;
        exit;
      end if;
  end loop;
  if (f=0) then
    dbms_output.put_line('prime');
  end if;
end;
/
```

Q6.

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

Q7.

```
declare
n number:=&n;
r number;
s number:=0;
temp number;
begin
  temp:=n;
  while n>0
  loop
    r:=mod(n,10);
    s:=(s*10)+r;
    n:=trunc(n/10);
    if (temp=s) then
      dbms_output.put_line('Palindrome');
```

```
    else
    dbms_output.put_line('not palindrome');
    end if;
  end loop;
end;
/
```