Lab Assignment-02

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QUES 1: Practice SQL Fundamental Commands on the table shown below:

Roll	Name	City	Age	CGPA
101	Ram	Bhubaneswar	19	9.0
102	Hari	Bhubaneswar		6.7
103	Uday	Jharkhand	20	8.97
104	Vikas	Uttar Pradesh	19	8.5
105	Sweta	Ranchi	19	9.2
106	Yogesh	Rajastan	18	7.9
210	Smriti	Delhi	20	8.99
211	Sudam	Cuttack	21	8.6
212	Vikas	Kolkota	23	5.98
165	Manish		19	9.15

SOLUTION:

TABLE CREATION:

```
SQL> insert into student_table values(101,'Ram','Bhubaneswar',19,9.0);

SQL> insert into student_table(Roll,Name,City,CGPA) values(102,'Hari','Bhubaneswar',6.7);

SQL> insert into student_table values(103,'Uday','Jharkhand',20,8.97);

SQL> insert into student_table values(104,'Vikas','Uttar Pradesh',19,8.5);

SQL> insert into student_table values(105,'Sweta','Ranchi',19,9.2);

SQL> insert into student_table values(106,'Yogesh','Rajasthan',18,7.9);

SQL> insert into student_table values(210,'Smriti','Delhi',20,8.99);

SQL> insert into student_table values(211,'Sundam','Cuttack',21,8.6);

SQL> insert into student_table values(212,'Vikas','Kolkata',23,5.98);

SQL> insert into student_table(Roll,Name,Age,CGPA) values(165,'Manish',19,9.15);
```

```
SQL> select * from student_table;

    ROLL NAME            CITY                        AGE       CGPA
---------- --------------- --------------------- ---------- ----------
     101 Ram             Bhubaneswar                19          9
     102 Hari            Bhubaneswar                           6.7
     103 Uday            Jharkhand                  20       8.97
     104 Vikas           Uttar Pradesh              19        8.5
     105 Sweta           Ranchi                     19        9.2
     106 Yogesh          Rajasthan                  18        7.9
     210 Smriti          Delhi                      20       8.99
     211 Sundam          Cuttack                    21        8.6
     212 Vikas           Kolkata                    23       5.98
     165 Manish                                     19       9.15

10 rows selected.
```

SELECT STATEMENT:

SQL> select Roll,CGPA from student_table;

```
SQL> select Roll,CGPA from student_table;

      ROLL        CGPA
---------- ----------
       101          9
       102        6.7
       103       8.97
       104        8.5
       105        9.2
       106        7.9
       210       8.99
       211        8.6
       212       5.98
       165       9.15

10 rows selected.
```

DISPLAYING DISTINCT ROWS:

SQL> select distinct city from student_table;

```
SQL> select distinct city from student_table;

CITY
--------------------
Jharkhand
Rajasthan
Delhi
Ranchi
Bhubaneswar
Uttar Pradesh
Kolkata
Cuttack

9 rows selected.
```

USE OF ARITHEMATIC EXPRESSIONS:

SQL> select Name,Age,Age+3 from student_table;

```
SQL> select Name,Age,Age+3 from student_table;

NAME                    AGE      AGE+3
--------------- ---------- ----------
Ram                      19         22
Hari
Uday                     20         23
Vikas                    19         22
Sweta                    19         22
Yogesh                   18         21
Smriti                   20         23
Sundam                   21         24
Vikas                    23         26
Manish                   19         22

10 rows selected.
```

USE OF ALIAS:

SQL> select Name,Age,Age+3 "Passing Age" from student_table;

```
SQL> select Name,Age,Age+3 "Passing Age" from student_table;

NAME                    AGE Passing Age
--------------- ---------- -----------
Ram                      19          22
Hari
Uday                     20          23
Vikas                    19          22
Sweta                    19          22
Yogesh                   18          21
Smriti                   20          23
Sundam                   21          24
Vikas                    23          26
Manish                   19          22

10 rows selected.
```

CONCATENATION:

SQL> select Name||' '||City from student_table;

```
SQL> select Name||' '||City from student_table;

NAME||''||CITY
---------------------------------------
Ram Bhubaneswar
Hari Bhubaneswar
Uday Jharkhand
Vikas Uttar Pradesh
Sweta Ranchi
Yogesh Rajasthan
Smriti Delhi
Sundam Cuttack
Vikas Kolkata
Manish

10 rows selected.
```

SQL> select Name||' '||City as "Address" from student_table;

```
SQL> select Name||' '||City as "Address" from student_table;

Address
---------------------------------------
Ram Bhubaneswar
Hari Bhubaneswar
Uday Jharkhand
Vikas Uttar Pradesh
Sweta Ranchi
Yogesh Rajasthan
Smriti Delhi
Sundam Cuttack
Vikas Kolkata
Manish

10 rows selected.
```

SELECTING SPECIFIC RECORDS:

SQL> select * from student_table where City='Bhubaneswar';

```
SQL> select * from student_table where City='Bhubaneswar';

    ROLL NAME            CITY                      AGE        CGPA
---------- --------------- -------------------- ---------- ----------
    101 Ram              Bhubaneswar                19           9
    102 Hari             Bhubaneswar                           6.7
```

RELATIONAL OPERATORS:

SQL> select * from student_table where Age>ANY(20,23,19);

```
SQL> select * from student_table where Age>ANY(20,23,19)
  2  ;

    ROLL NAME            CITY                      AGE        CGPA
---------- --------------- -------------------- ---------- ----------
    103 Uday             Jharkhand                  20        8.97
    210 Smriti           Delhi                      20        8.99
    211 Sundam           Cuttack                    21         8.6
    212 Vikas            Kolkata                    23        5.98
```

SQL> select * from student_table where Age>ALL(20,18);

```
SQL> select * from student_table where Age>ALL(20,18);

    ROLL NAME            CITY                      AGE        CGPA
---------- --------------- -------------------- ---------- ----------
    211 Sundam           Cuttack                    21         8.6
    212 Vikas            Kolkata                    23        5.98
```

SQL> select * from student_table where Age>=ALL(20,18);

```
SQL> select * from student_table where Age>=ALL(20,18);

    ROLL NAME            CITY                      AGE        CGPA
---------- --------------- -------------------- ---------- ----------
    103 Uday             Jharkhand                  20        8.97
    210 Smriti           Delhi                      20        8.99
    211 Sundam           Cuttack                    21         8.6
    212 Vikas            Kolkata                    23        5.98
```

LOGICAL OPERATORS:

SQL> select * from student_table where City='Bhubaneswar' AND Age=19;

```
SQL> select * from student_table where City='Bhubaneswar' AND Age=19;

    ROLL NAME            CITY                      AGE        CGPA
---------- --------------- -------------------- ---------- ----------
    101 Ram              Bhubaneswar                19           9
```

```
SQL> select * from student_table where NOT(Age=20 OR Age=21);
```

```
SQL> select * from student_table where NOT(Age=20 OR Age=21);

      ROLL NAME            CITY                       AGE       CGPA
---------- --------------- -------------------- ---------- ----------
       101 Ram             Bhubaneswar                  19          9
       104 Vikas           Uttar Pradesh                19        8.5
       105 Sweta           Ranchi                       19        9.2
       106 Yogesh          Rajasthan                    18        7.9
       212 Vikas           Kolkata                      23       5.98
       165 Manish                                       19       9.15

6 rows selected.
```

LIKE OPERATOR:

```
SQL> select * from student_table where Name LIKE 'S%';
```

```
SQL> select * from student_table where Name LIKE 'S%';

      ROLL NAME            CITY                       AGE       CGPA
---------- --------------- -------------------- ---------- ----------
       105 Sweta           Ranchi                       19        9.2
       210 Smriti          Delhi                        20       8.99
       211 Sundam          Cuttack                      21        8.6
```

```
SQL> select * from student_table where Name LIKE 'S____';
```

```
SQL> select * from student_table where Name LIKE 'S____';

      ROLL NAME            CITY                       AGE       CGPA
---------- --------------- -------------------- ---------- ----------
       105 Sweta           Ranchi                       19        9.2
```

```
SQL> select * from student_table where Name LIKE '%i%';
```

```
SQL> select * from student_table where Name LIKE '%i%';

      ROLL NAME            CITY                       AGE       CGPA
---------- --------------- -------------------- ---------- ----------
       102 Hari            Bhubaneswar                            6.7
       104 Vikas           Uttar Pradesh                19        8.5
       210 Smriti          Delhi                        20       8.99
       212 Vikas           Kolkata                      23       5.98
       165 Manish                                       19       9.15
```

```
SQL> select * from student_table where Name LIKE '_i%';
```

```
SQL> select * from student_table where Name LIKE '_i%';

      ROLL NAME            CITY                       AGE       CGPA
---------- --------------- -------------------- ---------- ----------
       104 Vikas           Uttar Pradesh                19        8.5
       212 Vikas           Kolkata                      23       5.98
```

SPECIAL OPERATORS:

SQL> select * from student_table where City IN('Delhi','Cuttack','Ranchi');

```
SQL> select * from student_table where City IN('Delhi','Cuttack','Ranchi');

     ROLL NAME              CITY                         AGE       CGPA
---------- ----------------  --------------------- ---------- ----------
       105 Sweta             Ranchi                        19        9.2
       210 Smriti            Delhi                         20       8.99
       211 Sundam            Cuttack                       21        8.6
```

SQL> select * from student_table where Age BETWEEN 20 AND 22;

```
SQL> select * from student_table where Age BETWEEN 20 AND 22;

     ROLL NAME              CITY                         AGE       CGPA
---------- ----------------  --------------------- ---------- ----------
       103 Uday              Jharkhand                     20       8.97
       210 Smriti            Delhi                         20       8.99
       211 Sundam            Cuttack                       21        8.6
```

SQL> select Name from student_table where Age IS NULL;

```
SQL> select Name from student_table where Age IS NULL;

NAME
----------------
Hari
```

ORDER BY CLAUSE USING COLUMN NAME:

SQL> select * from student_table ORDER BY Age;

```
SQL> select * from student_table ORDER BY Age;

     ROLL NAME              CITY                         AGE       CGPA
---------- ----------------  --------------------- ---------- ----------
       106 Yogesh            Rajasthan                     18        7.9
       101 Ram               Bhubaneswar                   19          9
       105 Sweta             Ranchi                        19        9.2
       165 Manish                                          19       9.15
       104 Vikas             Uttar Pradesh                 19        8.5
       210 Smriti            Delhi                         20       8.99
       103 Uday              Jharkhand                     20       8.97
       211 Sundam            Cuttack                       21        8.6
       212 Vikas             Kolkata                       23       5.98
       102 Hari              Bhubaneswar                              6.7

10 rows selected.
```

SQL> select * from student_table ORDER BY CGPA,Age DESC;

```
SQL> select * from student_table ORDER BY CGPA,Age DESC;

     ROLL NAME              CITY                         AGE       CGPA
---------- ----------------  --------------------- ---------- ----------
       212 Vikas             Kolkata                       23       5.98
       102 Hari              Bhubaneswar                              6.7
       106 Yogesh            Rajasthan                     18        7.9
       104 Vikas             Uttar Pradesh                 19        8.5
       211 Sundam            Cuttack                       21        8.6
       103 Uday              Jharkhand                     20       8.97
       210 Smriti            Delhi                         20       8.99
       101 Ram               Bhubaneswar                   19          9
       165 Manish                                          19       9.15
       105 Sweta             Ranchi                        19        9.2

10 rows selected.
```

ORDER BY CLAUSE USING COLUMN NUMBER:

SQL> select * from student_table ORDER BY 3;

```
SQL> select * from student_table ORDER BY 3;

     ROLL NAME              CITY                         AGE        CGPA
---------- ---------------- --------------------- ---------- ----------
       101 Ram              Bhubaneswar                   19          9
       102 Hari             Bhubaneswar                              6.7
       211 Sundam           Cuttack                       21        8.6
       210 Smriti           Delhi                         20       8.99
       103 Uday             Jharkhand                     20       8.97
       212 Vikas            Kolkata                       23       5.98
       106 Yogesh           Rajasthan                     18        7.9
       105 Sweta            Ranchi                        19        9.2
       104 Vikas            Uttar Pradesh                 19        8.5
       165 Manish                                         19       9.15

10 rows selected.
```

SQL> select * from student_table ORDER BY 4;

```
SQL> select * from student_table ORDER BY 4;

     ROLL NAME              CITY                         AGE        CGPA
---------- ---------------- --------------------- ---------- ----------
       106 Yogesh           Rajasthan                     18        7.9
       101 Ram              Bhubaneswar                   19          9
       105 Sweta            Ranchi                        19        9.2
       165 Manish                                         19       9.15
       104 Vikas            Uttar Pradesh                 19        8.5
       210 Smriti           Delhi                         20       8.99
       103 Uday             Jharkhand                     20       8.97
       211 Sundam           Cuttack                       21        8.6
       212 Vikas            Kolkata                       23       5.98
       102 Hari             Bhubaneswar                              6.7

10 rows selected.
```

ADDING A NEW COLUMN:

SQL> alter table student_table add(Address NUMBER(20));

```
SQL> alter table student_table add(Address NUMBER(20));

Table altered.

SQL> desc student_Table;
 Name
 -----------------------------------------------------------
 ---------------------------
 ROLL
 NAME
 CITY
 AGE
 CGPA
 ADDRESS
```

MODIFYING AN EXISTING COLUMN:

SQL> alter table student_table modify(Address varchar2(20));

```
SQL> alter table student_table modify(Address varchar2(20));

Table altered.

SQL> desc student_Table;
 Name
 ---------------------------------------------------------------
 -----------------------------
 ROLL
 NAME
 CITY
 AGE
 CGPA
 ADDRESS
```

DROPPING A COLUMN:

SQL> alter table student_table drop column Address;

```
SQL> alter table student_table drop column Address;

Table altered.

SQL> desc student_Table;
 Name
 ---------------------------------------------------------------
 -----------------------------
 ROLL
 NAME
 CITY
 AGE
 CGPA
```

RENAMING A COLUMN:

SQL> alter table student_table rename column Roll to ID;

```
SQL> alter table student_table rename column Roll to ID;

Table altered.

SQL> desc student_Table;
 Name
 ---------------------------------------------------------------
 -----------------------------
 ID
 NAME
 CITY
 AGE
 CGPA
```

UPDATE STATEMENT:

SQL> update student_table SET branch='CSE' where Roll=101;

```
SQL> update student_table SET branch='CSE' where Roll=101;

1 row updated.

Commit complete.
SQL> select * from student_table;

      ROLL NAME            CITY                        AGE       CGPA BRANC
---------- --------------- -------------------- ---------- ---------- -----
       101 Ram             Bhubaneswar                  19          9 CSE
       102 Hari            Bhubaneswar                             6.7
       103 Uday            Jharkhand                    20       8.97
       104 Vikas           Uttar Pradesh                19        8.5
       105 Sweta           Ranchi                       19        9.2
       106 Yogesh          Rajasthan                    18        7.9
       210 Smriti          Delhi                        20       8.99
       211 Sundam          Cuttack                      21        8.6
       212 Vikas           Kolkata                      23       5.98
       165 Manish                                       19       9.15

10 rows selected.
```

DROP COMMAND:

SQL> drop table student_table;

```
SQL> drop table student_table;

Table dropped.
```

TRUNCATE COMMAND:

SQL> truncate table student_table;

```
SQL> truncate table student_table;

Table truncated.
```

DELETE COMMAND:

SQL> delete from student_table where Roll=101;

```
SQL> delete from student_table where Roll=101;

1 row deleted.

Commit complete.
SQL> select * from student_table;

     ROLL NAME              CITY                      AGE       CGPA BRANC
---------- ---------------- --------------------- ---------- ---------- -----
      102 Hari              Bhubaneswar                        6.7 CSE
      103 Uday              Jharkhand                  20      8.97 CSE
      104 Vikas             Uttar Pradesh              19       8.5 CSE
      105 Sweta             Ranchi                     19       9.2 CSE
      106 Yogesh            Rajasthan                  18       7.9 CSE
      210 Smriti            Delhi                      20      8.99 CSE
      211 Sundam            Cuttack                    21       8.6 CSE
      212 Vikas             Kolkata                    23      5.98 CSE
      165 Manish                                       19      9.15 CSE

9 rows selected.
```

SQL> delete from student_table;

```
SQL> delete from student_table;

9 rows deleted.

Commit complete.
SQL> select * from student_table;

no rows selected
```

RENAME COMMAND:

SQL> rename student_table to student_table1;

```
SQL> rename student_table to student_table1;

Table renamed.
```

VIEWING ALL USER OBJECTS:

SQL> select * from tab;

```
TNAME                          TABTYPE  CLUSTERID
------------------------------ -------- ----------
BIN$+87CkraLQpSnoJf17nJgnQ==$0 TABLE
BIN$GnfKKvRIQ+iDZK7eT4NFcw==$0 TABLE
BIN$MFLe189sR3qn+05QWPLUDg==$0 TABLE
BIN$Nw+HmE3cTLCSyL+P0baAKw==$0 TABLE
CLASS                          TABLE
COUNTRIES                      TABLE
DEPARTMENTS                    TABLE
EMPLOYEES                      TABLE
EMP_DETAILS_VIEW               VIEW
JOBS                           TABLE
JOB_HISTORY                    TABLE
LOCATIONS                      TABLE
REGIONS                        TABLE
STUDENT                        TABLE
STUDENT_TABLE1                 TABLE

15 rows selected.
```

VIEWING ALL USER TABLES:

SQL> select table_name from user_tables;

```
SQL> select table_name from user_tables;

TABLE_NAME
-------------------------------
REGIONS
LOCATIONS
DEPARTMENTS
JOBS
EMPLOYEES
JOB_HISTORY
CLASS
STUDENT_TABLE1
COUNTRIES
STUDENT

10 rows selected.
```

CREATE TABLE FROM ANOTHER TABLE:

SQL> create table Person(Roll,Name,Age) as select Roll,Name,Age from student_table1;

```
SQL> create table Person(Roll,Name,Age) as select Roll,Name,Age from student_table1;

Table created.

SQL> select * from Person;

      ROLL NAME                       AGE
---------- --------------- ----------
       102 Hari
       103 Uday                        20
       104 Vikas                       19
       105 Sweta                       19
       106 Yogesh                      18
       210 Smriti                      20
       211 Sundam                      21
       212 Vikas                       23
       165 Manish                      19

9 rows selected.
```

INSERTING DATA INTO A TABLE FROM ANOTHER TABLE:

SQL> insert into Person select Roll,Name,Age from student_table where Roll=103;

```
SQL> insert into Person select Roll,Name,Age from student_table where Roll=103;

1 row created.

Commit complete.
SQL> select * from Person;

      ROLL NAME                      AGE
---------- ---------------- ----------
       102 Hari
       103 Uday                        20
       104 Vikas                       19
       105 Sweta                       19
       106 Yogesh                      18
       210 Smriti                      20
       211 Sundam                      21
       212 Vikas                       23
       165 Manish                      19
       103 Uday                        20

10 rows selected.
```

SQL> insert into Person select Roll,Name,Age from student_table;

```
SQL> insert into Person select Roll,Name,Age from student_table;

9 rows created.

Commit complete.
SQL> select * from Person;

      ROLL NAME                      AGE
---------- ---------------- ----------
       102 Hari
       103 Uday                        20
       104 Vikas                       19
       105 Sweta                       19
       106 Yogesh                      18
       210 Smriti                      20
       211 Sundam                      21
       212 Vikas                       23
       165 Manish                      19
       103 Uday                        20
       102 Hari
       103 Uday                        20
       104 Vikas                       19
       105 Sweta                       19
       106 Yogesh                      18
       210 Smriti                      20
       211 Sundam                      21
       212 Vikas                       23
       165 Manish                      19

19 rows selected.
```

ROWID:

SQL> select ROWID, Roll from student_table;

```
ROWID                     ROLL
------------------        ----------
AAAJg9AAEAAAAGLAAA           102
AAAJg9AAEAAAAGLAAB           103
AAAJg9AAEAAAAGLAAC           104
AAAJg9AAEAAAAGLAAD           105
AAAJg9AAEAAAAGLAAE           106
AAAJg9AAEAAAAGLAAF           210
AAAJg9AAEAAAAGLAAG           211
AAAJg9AAEAAAAGLAAH           212
AAAJg9AAEAAAAGLAAI           165

9 rows selected.
```

SQL> delete from student_table where ROWID='AAAJg9AAEAAAAGLAAI';

```
SQL> delete from student_table where ROWID='AAAJg9AAEAAAAGLAAI';

1 row deleted.

Commit complete.
SQL> select ROWID, Roll from student_table;

ROWID                     ROLL
------------------        ----------
AAAJg9AAEAAAAGLAAA           102
AAAJg9AAEAAAAGLAAB           103
AAAJg9AAEAAAAGLAAC           104
AAAJg9AAEAAAAGLAAD           105
AAAJg9AAEAAAAGLAAE           106
AAAJg9AAEAAAAGLAAF           210
AAAJg9AAEAAAAGLAAG           211
AAAJg9AAEAAAAGLAAH           212

8 rows selected.
```