**PAPER – II                 PRACTICAL NO. : 04**

**AIM** : **CREATE A TABLE THAT STORES SPATIAL DATA AND ISSUES QUERIES ON IT.**

**ROLL NO. : 02                                BATCH : M.SC PART-I**

**DATE :   /  /22**

**Create a spatial database table that stores the number, name and location, which consists of four different areas say abc, pqr, mno and xyz. Fire the following queries**

1. **Find the topological intersection of two geometries.**
2. **Find whether two geometric figures are equivalent to each other.**
3. **Find the areas of all different locations.**
4. **Find the area of only one location.**
5. **Find the distance between two geometries.**

**CODE :**

**1) Creating tables**

Create table university(no number(3) primary key,name varchar2(20),shape MDSYS.SDO\_GEOMETRY);

**2) Inserting Values In The Tables**

INSERT INTO university VALUES(1,'abc',

MDSYS.SDO\_GEOMETRY(

2003, -- 2-dimensional polygon

NULL,

NULL,

MDSYS.SDO\_ELEM\_INFO\_ARRAY(1,1003,3), -- one rectangle (1003 =exterior)

MDSYS.SDO\_ORDINATE\_ARRAY(1,1, 5,7)

-- only 2 points needed to

-- define rectangle (lower left and upper right) with

-- Cartesian-coordinate data

)

)

/

INSERT INTO university VALUES(2,'pqr',

MDSYS.SDO\_GEOMETRY(

2003, -- 2-dimensional polygon

NULL,

NULL,

MDSYS.SDO\_ELEM\_INFO\_ARRAY(1,1003,1),

-- one polygon (exterior polygon ring)

MDSYS.SDO\_ORDINATE\_ARRAY(5,1, 8,1, 8,6, 5,7, 5,1)

)

)

/

INSERT INTO university VALUES(3,'mno',

MDSYS.SDO\_GEOMETRY(

2003, -- 2-dimensional polygon

NULL,

NULL,

MDSYS.SDO\_ELEM\_INFO\_ARRAY(1,1003,1),

-- one polygon (exterior polygon ring)

MDSYS.SDO\_ORDINATE\_ARRAY(3,3, 6,3, 6,5, 4,5, 3,3)

)

)

/

INSERT INTO university VALUES(4,’xyz’,

MDSYS.SDO\_GEOMETRY(

2003, -- 2-dimensional polygon

NULL,NULL,MDSYS.SDO\_ELEM\_INFO\_ARRAY(1,1003,4), -- one circle

MDSYS.SDO\_ORDINATE\_ARRAY(8,7, 10,9, 8,11)

)

)

/

INSERT INTO USER\_SDO\_GEOM\_METADATA VALUES (’ university’,’shape’,

MDSYS.SDO\_DIM\_ARRAY(

MDSYS.SDO\_DIM\_ELEMENT(’X’, 0, 20, 0.005),

MDSYS.SDO\_DIM\_ELEMENT(’Y’, 0, 20, 0.005)

),

NULL -- SRID

)

CREATE INDEX university\_idx

ON university (shape) INDEXTYPE IS MDSYS.SPATIAL\_INDEX;

**QUERIES :**

**1. Topological intersection of two geometries.**

SELECT SDO\_GEOM.SDO\_INTERSECTION(c\_a.shape, c\_c.shape, 0.005)

FROM university c\_a, university c\_c WHERE c\_a.name = 'abc' AND c\_c.name = 'mno';

SDO\_GEOM.SDO\_INTERSECTION(C\_A.SHAPE,C\_C.SHAPE,0.005)(SDO\_GTYPE, SDO\_SRID, SDO\_PO

--------------------------------------------------------------------------------

SDO\_GEOMETRY(2003, NULL, NULL, SDO\_ELEM\_INFO\_ARRAY(1, 1003, 1), SDO\_ORDINATE\_ARR

AY(4, 5, 3, 3, 5, 3, 5, 5, 4, 5))

**2. Do two geometries have any spatial relationship?**

SELECT SDO\_GEOM.RELATE(c\_b.shape, 'anyinteract', c\_d.shape, 0.005)

FROM university c\_b, university c\_d WHERE c\_b.name = 'pqr' AND c\_d.name = 'xyz';

SDO\_GEOM.RELATE(C\_B.SHAPE,'ANYINTERACT',C\_D.SHAPE,0.005)

--------------------------------------------------------------------------

FALSE

SELECT SDO\_GEOM.RELATE(c\_b.shape, 'anyinteract', c\_a.shape, 0.005)

FROM university c\_b, university c\_a WHERE c\_b.name = 'pqr' AND c\_a.name = 'abc';

SDO\_GEOM.RELATE(C\_B.SHAPE,'ANYINTERACT',C\_A.SHAPE,0.005)

--------------------------------------------------------------------------------

TRUE

**3. Return the areas of all different locations.**

SELECT name, SDO\_GEOM.SDO\_AREA(shape, 0.005) FROM university;

NAME                 SDO\_GEOM.SDO\_AREA(SHAPE,0.005)

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abc                                              24

pqr                                            16.5

mno                                               5

xyz      12.5663706

**4. Return the area of just abc.**

select c.name,SDO\_GEOM.SDO\_AREA(c.shape,0.005) FROM university c WHERE c.name=’abc’;

NAME                 SDO\_GEOM.SDO\_AREA(C.SHAPE,0.005)

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abc                                                24d

**5. Return the distance between two geometries**.

select SDO\_GEOM.SDO\_DISTANCE(c\_b.shape,c\_d.shape,0.005) FROM university c\_b,university c\_d WHERE c\_b.name=’pqr’ and c\_d.name=’xyz’;

SDO\_GEOM.SDO\_DISTANCE(C\_B.SHAPE,C\_D.SHAPE,0.005)

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                                      .846049894