

# BRNO UNIVERSITY OF TECHNOLOGY

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Lecture: Advanced Database System

## **1. Database**

Create two tables in the database, one table named estate2 is a spatial database table, and one named product is a multimedia database table. Insert specific spatial coordinate values into the estate2 table.

## **2. Login Form**

Run the Oracle\_project file to enter the login interface. The login account password here is the same as the account and password used to log in to the Oracle database. If the login is successful, the username textfiled and password textfiled will be cleared. You can directly tag Image Form and Spatial Form.

If you encounter problems during the operation, you can click the help button to view related content.

If you need to log in to another person's account and password, you need to log out of the logged in account first.

## **3. Image Form**

There are six operations in the Image Form, namely RefreshLayoutList, Similar, Delete, Insert, ShowAllImage, Rotation.

In order to insert image information in the empty panel, you need to click Insert first to insert the image into the table product of the Oracle database. In order to ensure that there is an inserted value, you can return to the data of the product in the database to view, you can see that 5 images have been inserted.

After that, just press RefreshLayoutList so that the inserted image can be displayed on the panel, and we can perform subsequent operations on the image on the panel.

The ShowAllImage operation is to display all the added images on the panel.

The similar operation compares all the inserted images with similar comparison, so it runs very slowly.

The delete function is to delete the added image, which can be viewed in the data information of the product table.

The rotation button function needs to call the trigger of the product table, but so far, it has not been called successfully, so it cannot be used.

## 4. Spatial Form

Click the Loading button to load and display the coordinate values inserted in the table estate2 in the database.

Like Image Form, there are six operations:

getLengthofBuilding,  
getDistanceFromBuilding,  
doUnionOperator,  
getAreaofBuilding,  
deleteBuildingwithname,  
getNearestNeighborFromBuilding.

getLengthOfBuilding:

Select a coordinate (a building of type A\_1 is the main body) to obtain a set of data--The length of buliding.

SQL: select SDO\_GEOM.SDO\_LENGTH(shape, 0.005) as length from ESTATE2 where type = ?

The next operation is to take A\_1 as the main body, calculate the distance or area from A\_1 and so on.

getDistancesFromBuilding:

SQL: select a1.type as n1, a2.type as n2, SDO\_GEOM.SDO\_DISTANCE(a1.shape, a2.shape, 0.005) as distance from ESTATE2 a1, ESTATE2 a2 where a1.type = ? AND a1.type <> a2.type ORDER BY distance")

doUnionOperation:

SQL: select distinct a1.type n1, a2.type n2 from ESTATE2 a1, ESTATE2 a2 WHERE a1.type<>a2.type AND SDO\_RELATE(a1.shape, a2.shape,'MASK=OVERLAPBDYINTERSECT+CONTAINS+INSIDE') = 'TRUE' ORDER BY a1.type

getAreaOfBuilding:

SQL: select SDO\_GEOM.SDO\_AREA(shape, 0.005) as area from ESTATE2 where type = ?

deleteBuildingWithName:

SQL: DELETE FROM ESTATE2 WHERE type = ?

getNNearestNeighboursFromBuilding:

SQL: select type, SDO\_NN\_DISTANCE(1) as distance from ESTATE2 where  
SDO\_NN(shape, (SELECT x.shape FROM ESTATE2 x WHERE x.type='"+name+"'),  
'sdo\_batch\_size=1', 1) = 'TRUE' AND ROWNUM <= ? AND type <> ? ORDER BY  
distance