

Using the Buffer() Function Enables MapInfo Professional Users to See Locations with Related Data

ANY RETAILER WILL TELL YOU THAT LOCATING CUSTOMERS IS A MISSION-CRITICAL ACTIVITY. WITH MAPINFO PROFESSIONAL®, USERS HAVE THE ABILITY TO CREATE BUFFERS TO LINK LOCATION DATA WITH CUSTOMER DATA AND VISUALIZE IT ON A MAP. WHILE THE MAPINFO PROFESSIONAL MENU ALLOWS FOR STANDARD BUFFER CREATION, A SIMPLER WAY TO CREATE BUFFERS AND RETAIN RELATED DATA IS AVAILABLE.

A common customer relationship management (CRM) task is locating customers who are within a particular distance from a company's store, warehouse or distribution center and joining that store data with the customer data. When two tables are represented graphically as symbols, it is a simple matter within MapInfo Professional to create buffers around the company stores and find all the customers that fall within the buffers. However, linking all the data can be a little tricky.

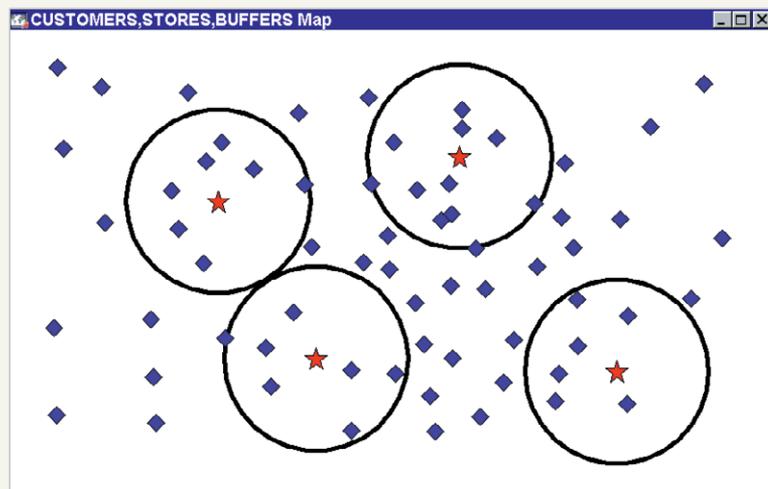
For example, our map represents our store locations as red stars and our customer locations as blue diamonds. The standard process to create buffers is as follows.

1. Go to Map>Layer Control and make the Cosmetic layer editable by placing a check mark under the pencil icon for that layer, and click OK.
2. Go to Query>SQL Select. From the Table dropdown, choose the Store table.
3. Uncheck the Browse Results box above the OK button, and click OK.
4. Go to Objects>Buffer and fill in the desired radius and smoothness of the buffers. For this example, use 10 and 100 respectively.
5. Select "One Buffer for Each Object". Click OK.
6. Go to Map>Save Cosmetic objects, and save the buffers to a new layer.

This creates a new "Buffer" table.

From here, it is easy to find the Customer table point objects that fall within the Buffer table objects by joining them through Query>SQL Select.

The store information can be transferred to the Buffer table with a SQL Select statement, but a simpler way to create the buffers would be to perform the following:



However, if we browse the Buffer table, it is hard to tell which original store location is associated with each buffer. The browser only contains one ID column populated with zeros.

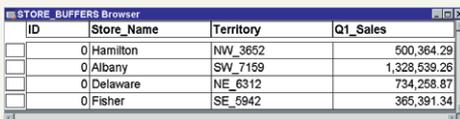
ID
0
0
0
0

1. Go to File>Save Copy as, and save a copy of the Store table. Call it Store_Buffers.
2. Go to File>Open Table and open the new Store_Buffers table.
3. Go to Options>Show MapBasic Window.
4. In the window, type: Update Store_Buffers set obj=Buffer(obj,100,10,"mi")
5. Then hit the Enter key on your keyboard.

6. Go to File>Save Table and save the changes made to the Store_Buffers table.

```
MapBasic  
update STORE_BUFFERS set obj = Buffer(obj,100,10,"mi")
```

This turns all the point objects in the Store_Buffers table into buffer objects with a radius of 10 miles and a smoothness of 100. If we browse the table, Store_Buffers will have all the columns and data of the original Store table that is represented by the points, or red stars in this example.



ID	Store_Name	Territory	Q1_Sales
0	Hamilton	NW_3652	500,364.29
0	Albany	SW_7159	1,328,539.26
0	Delaware	NE_6312	734,258.87
0	Fisher	SE_5942	365,391.34

When we perform a query through SQL Select and join the Customer table to the Store_Buffers table where Customer.obj is within Store_Buffers.obj, the resulting query will have all the columns and data from both base tables.

Now, it is easy to see what customer is related to which store location.

The parameters for the Buffer() function can be adjusted for resolution, radius size and units of measure such as “mi”, “ft” or “km”. Simply change the values within the parentheses:

Buffer(obj,Resolution of the buffer, Radius of the buffer,“Units of measure”).

Higher resolution values make smoother and more accurate buffers, but take longer to draw. As for the type of units available, see Appendix D, p. 619 of the *MapInfo Professional v6.5 User's Guide* for a more complete listing of choices.

Other MapInfo® MapBasic® functions can be found in the *MapBasic Reference Guide*, included on the MapInfo Professional v6.5 CD. ★

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