Ekonomická fakulta
Faculty of Economics

Jihočeská univerzita v Českých Budějovicích
University of South Bohemia in České Budějovice

Geographic Information Systems 1
Lab 3: spatial queries

Renata Klufová
University of South Bohemia in České Budějovice, Faculty of Economics

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- menu `Analysis` → `Toolboxes` → `Data Management Tools` → `Generalization` → `Dissolve`
- based on identical attributes, it is possible to merge individual elements
- `Input Fetures` - input feature class (layer),
- `Output Feature Class` - output feature class,
- `Dissolve_Fields` - attributes according to which the merge will take place (one or more), if none is selected, all objects will be merged,
- `Statistics Fields` - attributes of the newly created layer based on the calculation using basic statistical functions (sum, maximum, average, ...)
- `Create Multipart Features` - whether to create only continuous elements or even elements consisting of several discontinuous parts

See more - How Dissolve works...

Select by Location

- menu `Map` - group of tools `Selection` → `Select By Location`
- the pane of spatial query design dialog opens
- the query schema is "I want to select/add to selection/remove from selection/select from selected the following checked layers that have some spatial relation to the selected layer"
- `Input Features` - set the layer in which we make the selection,
- `Relationship` - we set the type of spatial relationship with the layer with which we select the elements in the input layer,
- `Selection type` - we set the type of selection (new, add to selection, remove from selection);
- ATTENTION: if any elements in the given layer are already selected, it will perform the operation with this selection.

- Intersect,
- Intersect 3D,
- Within a Distance,
- Within a Distance 3D,
- Within a Distance geodesic,
- Share a Line Segment with,
- Contains/Completely Contains,
- Contains Clementini,
- Are Contained By/Are Completely within, úplně)
- Crossed by the Outline of,
- Boundary touches,
- Are Identical to,
- Have their Centroid in,

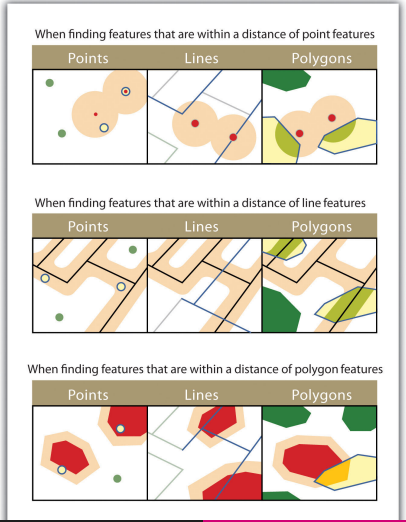
Watch the instructional video:

Select by Location - video

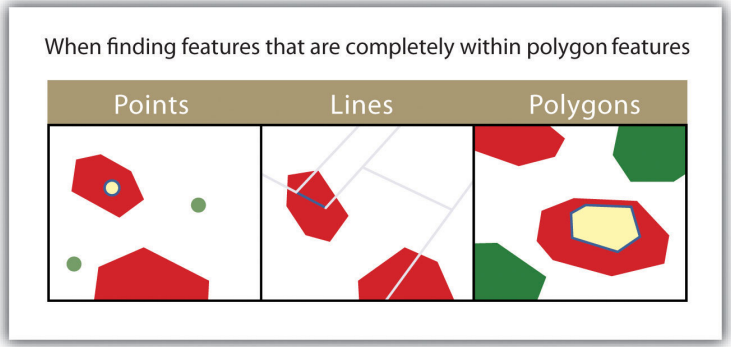
Graphic examples of spatial queries:

Select by Location - graphical examples

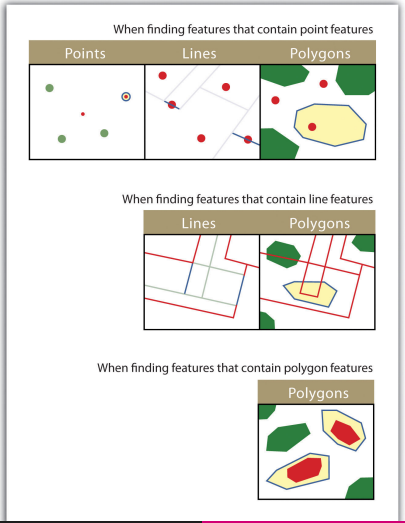
Within distance of



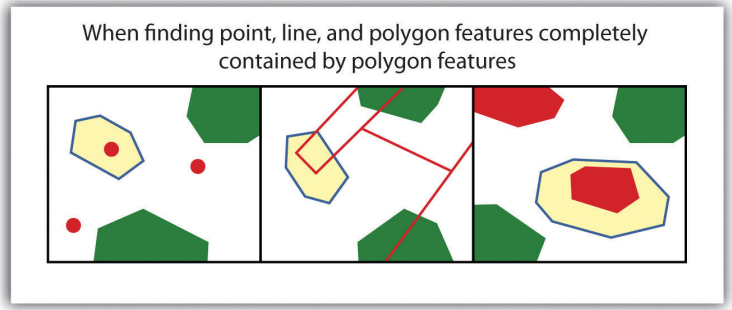
Completely within



Contain

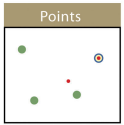

When finding features that contain point features
Points
Lines
Polygons
When finding features that contain line features
Lines
Polygons
When finding features that contain polygon features
Polygons

Completely contain

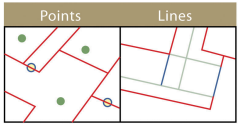


Contained by

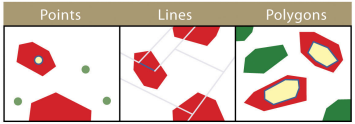
When finding features that are contained by point features



When finding features that are contained by line features

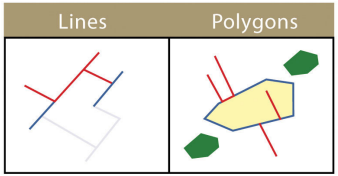


When finding features that are contained by polygon features

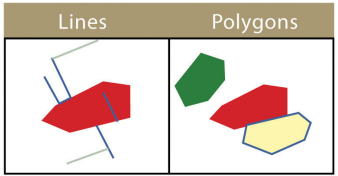


Touch the boundary

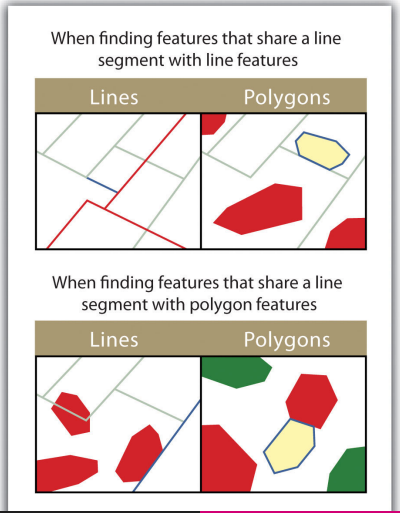
When finding features that touch the boundary of line features



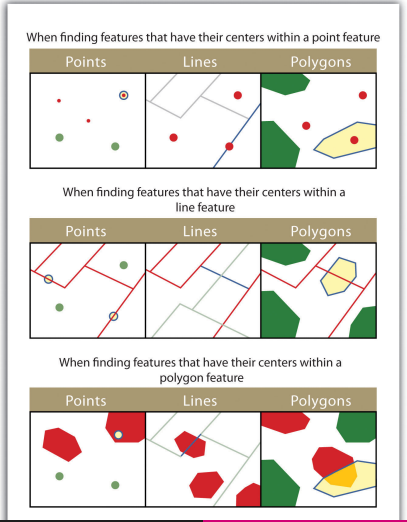
When finding features that touch the boundary of polygon features



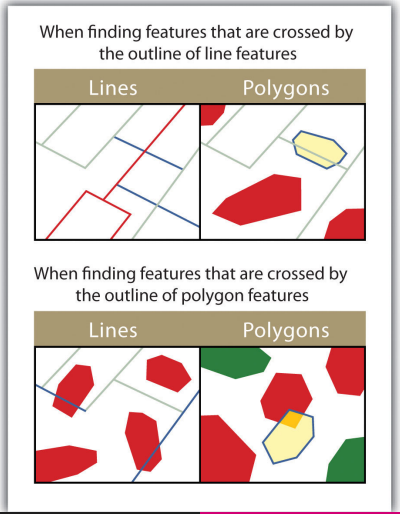
Share a line segment



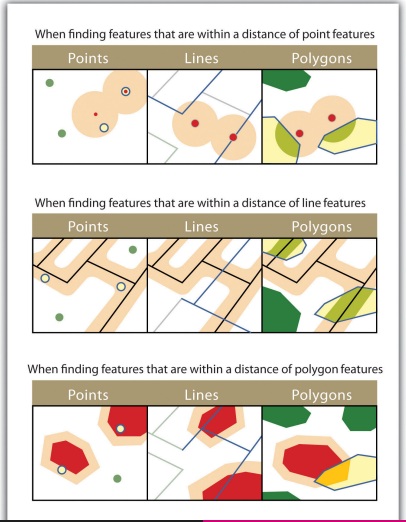
Have their center in



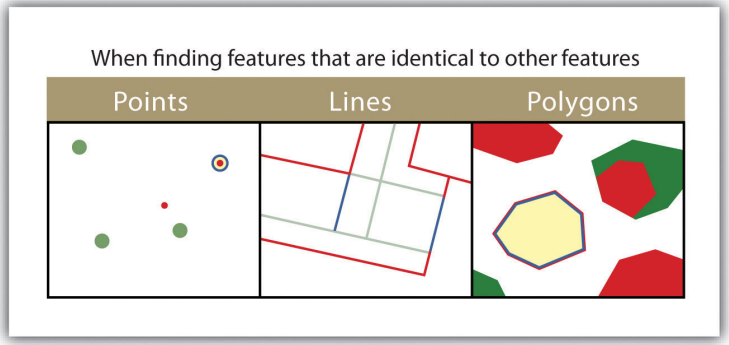
Crossed by the outline of



Within distance of



Are identical to



Buffer application in spatial query

- it is possible to add a buffer zone to the spatial relationship,
- in certain units it is thus possible to set essentially spatial relationship tolerance,
- e.g. for the relationship `Intersect` with a buffer set of 10 km, the elements do not have to intersect, but they only need to be within a distance of 10 km apart and already meets the condition.