Chapter 12: Retrieving Descriptive information from your GIS Data

- Describe() function returns specific properties for an object based on its data type

Syntax

Describe (value)

Parameter	Explanation	Data Type
value	The specified data element or geoprocessing object to describe.	String

- Objects include Tables, Feature Classes, Geodatabases, Rasters, Coverage Feature Classes, Layer Files, Relationship Classes, Workspaces, and Datasets, as well as geoprocessing objects such as FeatureLayers and TableViews.
- Properties include data type, fields, indexes, and many others
- Describe properties are organized into a series of property groups.
- Any particular dataset will acquire the properties of at least one of these groups. For instance, if describing a geodatabase feature class, you could access properties from the GDB FeatureClass, FeatureClass, Table and Dataset property groups.
- All data, regardless of the data type, will always acquire the generic Describe Object properties

Properties

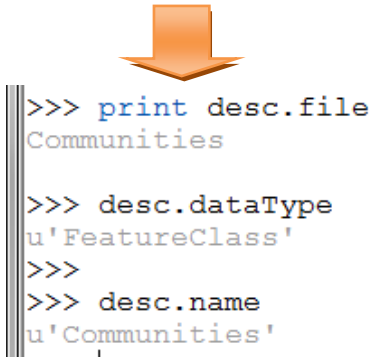
Property	Explanation	Data Type
baseName (Read Only)	The file base name	String
catalogPath (Read Only)	The path of the data	String
children (Read Only)	A list of sub elements	List
childrenExpanded (Read Only)	Indicates whether the children have been expanded	Boolean
dataType (Read Only)	The type of the element	String
extension (Read Only)	The file extension	String
file (Read Only)	The file name	String
fullPropsRetrieved (Read Only)	Indicates whether full properties have been retrieved	Boolean
metadataRetrieved (Read Only)	Indicates whether the metadata has been retrieved	Boolean
name (Read Only)	The user-assigned name for the element	String
path (Read Only)	The file path	String

- These generic properties are read only

```
import arcpy

# Create a Describe object from the GDB Feature Class
#
desc = arcpy.Describe(r"C:\Users\Me\Desktop\GIS Programming\Training\Data\Exercise2.gdb\Communities")

# Print GDB FeatureClass properties
```



```
>>> print desc.file
Communities

>>> desc.dataType
u'FeatureClass'
>>>
>>> desc.name
u'Communities'
```

Task:

Try a few other generic properties

Example: describeGDB

Properties

Property	Explanation	Data Type
areaFieldName (Read Only)	The name of the geometry area field.	String
lengthFieldName (Read Only)	The name of the geometry length field.	String

Display the GDB FeatureClass properties.

```
import arcpy

# Create a Describe object from the GDB Feature Class
#
desc = arcpy.Describe(r"C:\Users\Me\Desktop\GIS Programming\Training\Data\Exercise2.gdb\Communities")

# Print GDB FeatureClass properties
print "Area Field Name  : " + desc.areaFieldName
print "Length Field Name: " + desc.lengthFieldName
```

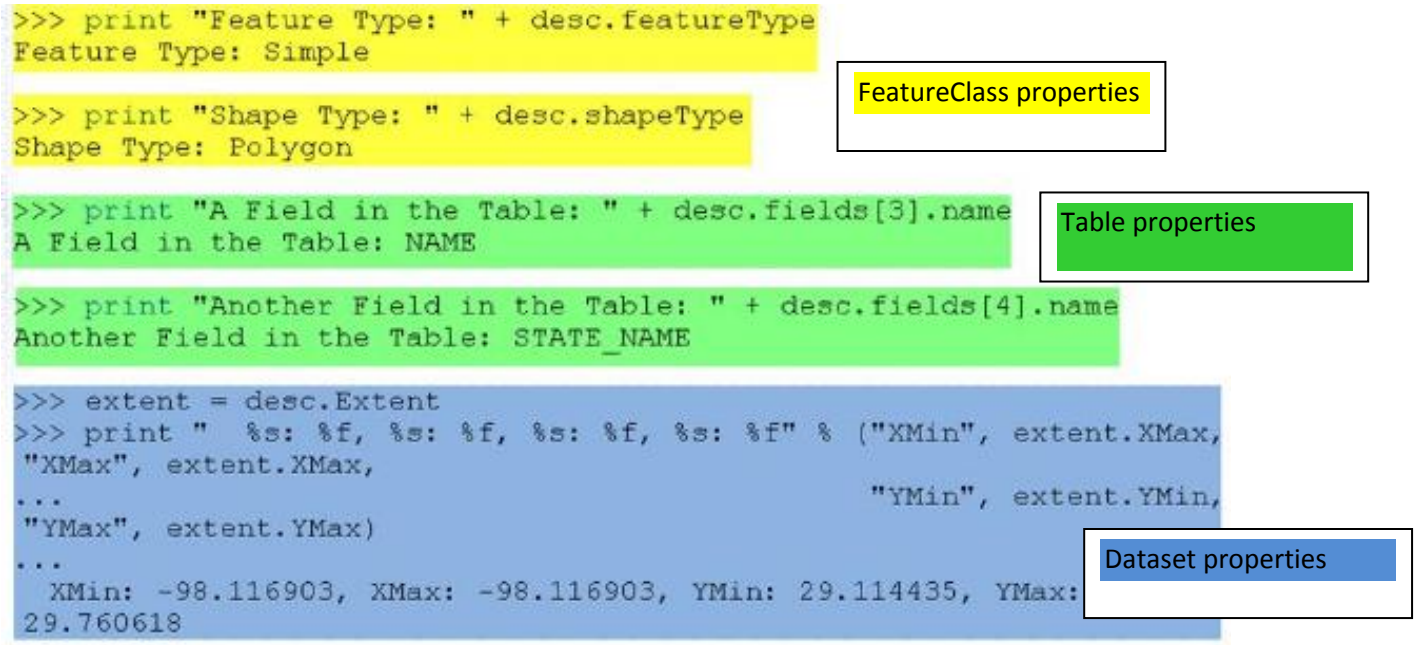
- Property groups

Describe Object Properties
CAD Drawing Dataset Properties
Coverage FeatureClass Properties
Coverage Properties
Dataset Properties
FeatureClass Properties
GDB FeatureClass Properties
GDB Table Properties
Geometric Network Properties
Layer Properties
Network Analyst Layer Properties
Network Dataset Properties
Prj File Properties
Raster Band Properties
Raster Catalog Properties
Raster Dataset Properties
RelationshipClass Properties
RepresentationClass Properties
Table Properties
TableView Properties
Tin Properties
Topology Properties
Workspace Properties

- FeatureClass properties group
    - Access to standard feature class properties
    - Access to Table Properties and Dataset Properties is also available.
    - Commonly used properties
        - featureType
            - simple, complex, annotation,…
        - shapeType
            - point, polygon, polyline,…
        - shapeFieldName

Example:

Shows different group of properties for the geodatabase feature class object



Task:

Write Python script to test the above commands, connecting to the Exercise2 geodatabase and accessing the Communities shapefile.

Questions:

- Explain 'desc.fields[3].name' in the above image.
- Will the output of 'desc.fields[3].name' always be the same. If so, state why. If not, also state why including what makes the output change?
- HINT: try using 'desc.fields.name'
- What command will you use to retrieve the spatial reference information e.g. WGS 1984 UTM Zone 20 N?

Take a look at other properties groups of Describe() at
http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#//000v00000026000000.htm

12.1 Exercise 12