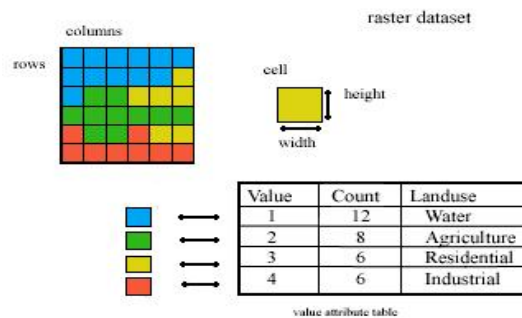


Raster Objects

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Rasters

Example:



Some definitions

RasterDataset – the datasource that is stored on a physical medium.

RasterWorkspace – where the rasterdataset is stored to be worked with.

RasterWorkspaceFactory – the class factory that creates and manages RasterWorkspace objects.

RasterBand – an array of pixels and their associated data (color, elevation, slope etc.)

RasterLayer – created from an existing raster, this is the visual display of raster data.

The Raster Object

- Used to display pixels on screen and retrieve pixel values.
- Is the collection of RasterBands in memory.
- Manages the display of stored pixels and their values.
- Whereas rasterdataset refers to raster values in memory, the object refers to the raster being displayed and its implementation in its virtual representation.

The RasterDataSet

- A raster is an array of pixels that are assigned a value signifying any number of things (color, landuse, etc.)
- File formats used include .tiff, .jpg, .grid, etc.
- Is a collection of RasterBands, which are arrays of pixels with along with their ancillary data.

RasterDataSets cont.

- Stored in a RasterWorkspace. This provides methods for managing the dataset.
- RasterWorkspaceFactory can create and manage RasterWorkSpace objects.

Code Example

```
Dim pRasWksFact As IWorkspaceFactory
Dim pRasWks As IRasterWorkspace
Dim pRasDS As IRasterDataset
Dim pRasBC As IRasterBandCollection
Dim pRasBand As IRasterBand

Set pRasWksFact = New RasterWorkspaceFactory
Set pRasWks = pRasWksFact.OpenFromFile("D:\Data\Rasters", ThisDocument.Parent.HWnd)
Set pRasDS = pRasWks.OpenRasterDataset("AerialPhoto.tif")
Set pRasBC = pRasDS
Set pRasBand = pRasBC.Item(0)
```

(taken from <http://edndoc.esri.com/arcobjects/8.3/ObjectModelOverviews/RasterModelOverview.htm>)

Visualizing Raster Data

- RasterLayer created from the raster data and added to map.
- Several different renderers for creating this layer, according to how you want the raster to be displayed: RasterRGBRenderer, RasterUniqueValueRenderer, etc.
- ILayerEffects and IRasterDisplayProps allow one to adjust properties such as brightness, transparency, etc.

References

- Raster object model overview:
<http://edndoc.esri.com/arcobjects/8.3/ObjectModelOverviews/RasterModelOverview.htm>
- Chang, 2008