Geoprocessor Programming Model

ArcGIS 9.1

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Use CreateObject to create an object that may be used as a tool or method parameter.

GpDispatch *p. 28*

Properties

- MaxSeverity
- MessageCount
- OverwriteOutput: Boolean
- ParameterCount
- TemporaryMapLayers: Boolean
- Toolbox

- AddError (Message)
- AddMessage (Message)
- AddReturnMessage (Index)
- AddToolbox (Toolbox)
- AddWarning (Message)
- Command (CommandLineString)
- CopyParameter (fromIndex, toIndex)
- CheckProduct(ProductCode)
- ProductInfo(ProductCode)
- SetProduct(ProductCode)
- CheckExtension(ExtensionCode)
- CheckOutExtension(ExtensionCode)
- CheckInExtension(ExtensionCode)
- CreateObject (ObjectName, ExtraArg): Object
- Describe (InputValue): Object
- Exists (InputValue): Boolean
- GetMessage (Index)
- GetMessages (severity)
- GetParameter (Index): Object
- GetParameterAsText (Index)
- GetSeverity (Index)
- GetReturnCode (Index)
- GetSystemEnvironment (envName)
- ListFields (InputValue, wildCard, fieldType): Object
- ListIndexes (InputValue, wildCard): Object
- ListRasters (wildCard, rasterType): Object
- ListTables (wildCard, tableType): Object
- ListWorkspaces (wildCard, workspaceType): Object
- ListDatasets (wildCard, featureType): Object
- ListFeatureClasses (wildCard, featureType): Object
- ListEnvironments (wildCard): Object
- ListToolboxes (wildCard): Object
- ListTools (wildCard): Object
- ParseFieldName (FieldName, Workspace)
- ParseTableName (TableName, Workspace)
- QualifyFieldName (FieldName, Workspace)
- QualifyTableName (TableName, Workspace)
- RefreshCatalog (InputValue)
- RemoveToolbox (Toolbox)
- SetParameter (Index, Object)
- SetParameterAsText (Index, Index)
- InsertCursor (InputValue, SpatialReference): Object
- SearchCursor (InputValue, WhereClause, SpatialReference): Object
- UpdateCursor (InputValue, WhereClause, Spatial Reference): Object
- TestSchemaLock(inputValue): Boolean
- Usage (method)
- ValidateFieldName (FieldName, Workspace)
- ValidateTableName (TableName, Workspace)

Dynamic Methods and Properties *p. 30*

- Environment
- Tool (tool parameters) MaxSeverity

Any tool from a referenced toolbox may be called as a method, while environment settings are properties.

SpatialReference *p. 71*

- Type
- Name
- Abbreviation
- Remarks
- FactoryCode
- HasMPrecision
- HasXYPrecision
- HasZPrecision
- FalseOriginAndUnits
- MFalseOriginAndUnits
- ZFalseOriginAndUnits
- Domain
- MDomain
- ZDomain
- Usage
- CentralMeridian*
- CentralMeridianInDegrees*
- LongitudeOfOrigin*
- LatitudeOf1st*
- LatitudeOf2nd*
- FalseEasting*
- FalseNorthing*
- CentralParallel*
- StandardParallel1*
- StandardParallel2*
- LongitudeOf1st*
- LongitudeOf2nd*
- ScaleFactor*
- Azimuth*
- Classification*
- SemiMajorAxis**
- SemiMinorAxis**
- Flattening**
- Longitude**
- RadiansPerUnit**

* Projected Coordinate system only
** Geographic Coordinate system only
*** Use either a read-only or read-write Field object to set the property. The returned object is read-write.

ValueTable *p. 48*

- RowCount
- ColumnCount
- AddRow (optional value)
- GetRow (rowIndex)
- GetValue (rowIndex, columnIndex)
- LoadFromString (value)
- ExportToString
- RemoveRow (rowIndex)
- SetRow (rowIndex, value)
- SetValue (rowIndex, columnIndex)

FieldInfo

- Count
- AddField(FieldName, NewName, Hidden: Boolean, Ratio)
- GetField (index)
- DeleteField (index)

Array *p. 79*

- Count:
- Reset
- Next: Object
- Add(Object)
- Insert(Index, Object)
- Remove(Index, Object)
- RemoveAll
- GetObject(Index): Object

Point *p. 80*

- ID
- X
- Y
- Z
- M

FieldMappings *p. 51*

- FieldValidationWorkspace(Workspace)
- FieldCount
- Fields: Object
- AddTable(inputTableName)
- AddFieldMap(FieldMap: Object)
- GetFieldMap(Index): FieldMap: Object
- ReplaceFieldMap(Index, FieldMap: Object)
- RemoveFieldMap(Index)
- FindFieldMapIndex(FieldName)
- RemoveAll
- ExportToString
- LoadFromString(inputString)

FieldMap *p. 52*

- MergeRule(String)
- JoinDelimiter(String)
- OutputField(Field: Object)***
- InputFieldCount(Long)
- SetStartTextPosition(Index, Long)
- GetStartTextPosition(Index)
- SetEndTextPosition(Index, Long)
- GetEndTextPosition(Index)
- AddInputField(inputTableName, FieldName, StartTextPosition, EndTextPosition)
- FindInputFieldIndex(Table, FieldName)
- GetInputTableName(Index)
- GetInputFieldName(Index)
- RemoveInputField(Index)
- RemoveAll

Field *p. 70*

- Name
- AliasName
- Domain
- IsEditable: Boolean
- HasIndex: Boolean
- IsNullable: Boolean
- IsUnique: Boolean
- Length
- Type
- Scale
- Precision

Create and populate a Field object to set the properties of the Output field within a FieldMap object.

Fields

- Next: Object
- Reset

Field *p. 70*

- Name
- AliasName
- Domain
- IsEditable: Boolean
- HasIndex: Boolean
- IsNullable: Boolean
- IsUnique: Boolean
- Length
- Type
- Scale
- Precision

A Field returned from a Fields object is almost equivalent to a Field object that can be created using the CreateObject method. The only difference is their read/write capabilities.

When a field is returned from a list of fields, the properties are read-only.

Indexes

- Next: Object
- Reset

Index *p. 70*

- Name
- IsAscending: Boolean
- IsUnique: Boolean
- Fields: Object

An Index Object can create a fields object for that index.

Enumeration (featureclasses, rasters, tables, datasets, workspaces)

- Next: (String)
- Reset

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Use List functions to create an enumeration object of the data type.

Rows (SearchCursor, InsertCursor, UpdateCursor) *p. 76*

Cursors return a Rows object with properties for each type of cursor.

SearchCursor

- Next: Object
- Reset

InsertCursor

- Reset
- NewRow: Object
- InsertRow(Object)

UpdateCursor

- Next: Object
- Reset
- UpdateRow(Object)
- DeleteRow(Object)

Each row will dynamically support the field name as a property.

Row

- FieldName
- GetValue (fieldName)

Row

- FieldName
- GetValue (fieldName)
- SetValue (fieldName, Value)

Geometry *p. 78*

- Type
- Extent
- Centroid
- FirstPoint
- LastPoint
- Area
- Length
- IsMultipart
- PartCount
- GetPart (Index)

Using the Geometry field, a geometry object may be created. It is used to describe the properties of the geometry for each row in a feature class.

FeatureClass Properties

- FeatureType
- HasM: Boolean
- HasZ: Boolean
- HasSpatialIndex: Boolean
- RelationshipClassNames
- ShapeFieldName
- ShapeType
- TopologyName

Table Properties
Dataset Properties

Coverage FeatureClass Properties

- FeatureClassType
- HasFAT: Boolean
- HasTopology: Boolean

Table Properties
Dataset Properties

Layer Properties

- FeatureClass
- FIDSet
- FieldInfo
- WhereClause
- NameString

FeatureClass Properties

Describe Object Properties

- DataType
- CatalogPath

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Table Properties

- HasOID: Boolean
- OIDFieldName
- Fields: Object
- Indexes: Object

Dataset Properties

- DatasetType
- Extent
- SpatialReference: Object

TableView Properties

- Table
- FIDSet
- FieldInfo
- WhereClause
- NameString

Table Properties

Workspace Properties

- Connection Properties
- ConnectionString
- Domains
- WorkspaceFactoryProgID
- WorkspaceType

Coverage Properties

- Tolerances

Dataset Properties

Relationship Class Properties

- IsVersioned: Boolean
- Fields: Object

Table Properties

Raster Catalog Properties

- RasterFieldName

Dataset Properties
Table Properties

Raster Dataset Properties

- BandCount
- CompressionType
- Format
- Permanent: Boolean
- SensorType

Raster Band Properties
Dataset Properties

Raster Band Properties

- Height
- IsInteger: Boolean
- MeanCellHeight
- MeanCellWidth
- NoDataValue
- PixelType
- PrimaryField
- TableType
- Width

Dataset Properties

Red text indicates a property set. See page 73 for more information on property sets.

An Object is created with all of the properties of the data being described. The specific properties listed apply to all types of data.

Each type of data has unique properties. Depending on their relationship, properties of other data types may also be available.

All properties and method parameters are either a string or a long data type, unless otherwise stated. Some properties and parameters may be objects or boolean values.

Object key

- Property Get
- Property Get/Put
- Method