



# Geoprocessor Programming Model

9.3-version Geoprocessor

ArcGIS 9.3

This version of the Geoprocessor Programming Model shows the methods, properties and objects as supported when creating the geoprocessor using the arcgisscripting module's create method (with the optional '9.3' version argument).

```
import arcgisscripting
arcgisscripting.create(9.3)
```

**arcgisscripting**

- MaxSeverity
- MessageCount
- OverwriteOutput: Boolean
- ParameterCount
- ScriptVersion
- Toolbox
- AddError (Message)
- AddFieldDelimiters (FieldName, Workspace)
- AddIDMessage (Type, ID, Argument1, Argument2)
- AddMessage (Message)
- AddReturnMessage (Index)
- AddToolbox (Toolbox)
- AddWarning (Message)
- ClearEnvironment (Environment)
- Command (CommandLineString)
- CopyParameter (fromIndex, toIndex)
- CheckExtension (ExtensionCode)
- CheckInExtension (ExtensionCode)
- CheckOutExtension (ExtensionCode)
- CheckProduct (ProductCode)
- CreateObject (ObjectName, Argument1, Argument2, Argument3, Argument4, Argument5): Object
- CreateRandomValueGenerator (Seed, Algorithm)
- CreateScratchName (Prefix, Suffix, dataType, workspace)
- CreateUniqueName (InputValue, workspace)
- Describe (InputValue): Object
- Exists (InputValue): Boolean
- GetInstallInfo (InstallType): Python Dictionary
- GetMessage (Index)
- GetMessages (severity)
- GetParameter (Index): Value
- GetParameterAsText (Index)
- GetParameterCount (ToolName)
- GetParameterInfo (Tool): Python List
- GetParameterValue (ToolName, Index)
- GetReturnCode (Index)
- GetSeverity (Index)
- GetSystemEnvironment (envName)
- IsSynchronous (ToolName)
- ListFields (InputValue, wildCard, fieldType): Python List
- ListIndexes (InputValue, wildCard): Python List
- ListDatasets (wildCard, geometryType): Python List
- ListFeatureClasses (wildCard, geometryType): Python List
- ListRasters (wildCard, rasterType): Python List
- ListTables (wildCard, tableType): Python List
- ListWorkspaces (wildCard, workspaceType): Python List
- ListEnvironments (wildCard): Python List
- ListToolboxes (wildCard): Python List
- ListTools (wildCard): Python List
- ListInstallations (wildCard): Python List
- LoadSettings (XMLFile)
- ParseFieldName (FieldName, Workspace)
- ParseTableName (TableName, Workspace)
- ProductInfo ()
- QualifyFieldName (FieldName, Workspace)
- QualifyTableName (TableName, Workspace)
- RemoveToolbox (Toolbox)
- ResetEnvironments ()
- ResetProgressor ()
- SetParameterAsText (Index, Argument)
- SetParameter (Index, Argument)
- SetProgressor (Type, Label, Min, Max, Interval)
- SetProgressorLabel (Label)
- SetProgressorPosition (Position)
- SaveSettings (XMLFile)
- SetProduct (ProductCode)
- InsertCursor (InputValue, SpatialReference): Object
- SearchCursor (InputValue, WhereClause, SpatialReference, FieldList, SortFields): Object
- UpdateCursor (InputValue, WhereClause, SpatialReference, FieldList, SortFields): Object
- TestSchemaLock (inputValue): Boolean
- Usage (method)
- ValidateFieldName (FieldName, Workspace)
- ValidateTableName (TableName, Workspace)

**Dynamic Methods and Properties**

- Environment
- Tool (tool parameters)

**SpatialReference**

All Coordinate Systems

- Type
- Name
- Abbreviation
- Remarks
- FactoryCode
- HasMPrecision
- HasXYPrecision
- HasZPrecision
- FalseOriginAndUnits
- MFalseOriginAndUnits
- ZFalseOriginAndUnits
- Domain
- MDomain
- ZDomain
- IsHighPrecision
- XYTolerance
- MTolerance
- ZTolerance
- XYResolution
- MResolution
- ZResolution
- Usage
- CreateFromFile (prjFile)

Geographic Coordinate System only

- SemiMajorAxis
- SemiMinorAxis
- Flattening
- Longitude
- RadiansPerUnit
- GCSName
- GCSCode
- SpheroidName
- SpheroidCode
- DatumName
- DatumCode
- PrimeMeridianName
- PrimeMeridianCode
- AngularUnitName
- AngularUnitCode

Projected Coordinate System only

- CentralMeridian
- CentralMeridianInDegrees
- LongitudeOfOrigin
- LatitudeOf1st
- LatitudeOf2nd
- FalseNorthing
- CentralParallel
- StandardParallel1
- StandardParallel2
- LongitudeOf1st
- LongitudeOf2nd
- ScaleFactor
- Azimuth
- Classification
- PCSName
- PCSCode
- ProjectionName
- ProjectionCode
- LinearUnitName
- LinearUnitCode

**FieldMappings**

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

**FieldMap**

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

**FieldInfo**

- Count
- AddField (FieldName, NewName, Visible, SplitRule)
- ExportToString ()
- FindFieldByName (FieldName)
- FindFieldByNewName (NewName)
- GetFieldName (Index)
- GetSplitRule (Index)
- GetVisible (Index)
- LoadFromString (inputString)
- RemoveField (Index)
- SetFieldName (Index, FieldName)
- SetNewName (Index, NewName)
- SetSplitRule (Index, SplitRule)
- SetVisible (Index, Visible)

**ValueTable \*\*\***

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

**Point**

- ID
- X
- Y
- Z
- M

**Field \*\***

- Name
- AliasName
- Domain
- Editable: Boolean
- IsNull: Boolean
- Required: Boolean
- Length
- Type
- Scale
- Precision

**Array**

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

**NetCDFFileProperties \*\*\***

- GetAttributeNames (VariableName): Python List
- GetAttributeValue (VariableName, AttributeName)
- GetDimensionIndex (DimensionName, Value)
- GetDimensions (): Python List
- GetDimensionsByVariable (VariableName): Python List
- GetDimensionSize (DimensionName)
- GetDimensionValue (DimensionName, Value)
- GetFieldType (Name)
- GetSpatialReference (VariableName, XDimension, YDimension): SpatialReference
- GetVariables (): Python List
- GetVariablesByDimension (DimensionName): Python List

**ArcSDESQLExecute**

- TransactionAutoCommit (Long)
- Execute
- StartTransaction
- CommitTransaction
- RollBackTransaction

**Result \*\*\***

- Status
- ResultID
- MessageCount
- MaxSeverity
- OutputCount
- GetMessages (severity)
- GetMessage (index)
- GetSeverity (index)
- GetInput (index): Object
- GetOutput (index): Object
- GetMapImageURL (ParameterList, Height, Width, Resolution)
- Cancel ()

**RecordSet**

- Load (InputValue)
- Save (OutputValue)

**FeatureSet**

- Load (InputValue)
- Save (OutputValue)

**Geometry**

- Type
- Extent: Object
- Centroid: Point
- TrueCentroid: Point
- LabelPoint: Point
- FirstPoint: Point
- LastPoint: Point
- Area
- Length
- IsMultipart: Boolean
- PartCount
- HullRectangle
- GetPart (Index): Object

**Extent**

- XMin
- YMin
- XMax
- YMax
- MMin
- MMax
- ZMin
- ZMax
- Width
- Height
- Depth
- LowerLeft: Point
- LowerRight: Point
- UpperLeft: Point
- UpperRight: Point

\*\*\* When using CreateObject to create ValueTable, NetCDFFileProperties and Result objects, an extra argument is used.

CreateObject ("ValueTable", columnCount) CreateObject ("NetCDFFileProperties, NetCDFFile") CreateObject ("Result", toolName + " + ResultID")

\*\*\*\* When using CreateObject to create ArcSDESQLExecute, the syntax is: CreateObject ("ArcSDESQLExecute", <serverName>, <portNumber>, <version>, <userName>, <password>)

\* Use either a read-only or read-write Field object to set the property. The returned object is read-write.

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

**Value**

- Value

**Field**

- Name
- AliasName
- Domain
- Editable: Boolean
- IsNull: Boolean
- Required: Boolean
- Length
- Type
- Scale
- Precision

**Index**

- Name
- IsAscending: Boolean
- IsUnique: Boolean
- Fields: Python List

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.

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

**Parameter**

- Name
- Direction
- Data Type
- Parameter Type
- Parameter Dependencies
- Value
- DefaultEnvironmentName
- Enabled: Boolean
- Altered: Boolean
- HasBeenValidated: Boolean
- Category
- Schema: Object
- Filter: Object
- Symbology
- Message
- SetErrorMessage (Message)
- SetWarningMessage (Message)
- ClearMessage ()
- HasError ()
- HasWarning ()
- IsInputValueDerived ()
- SetIDMessage (Message)

**Schema**

- Type
- Clone: Boolean
- FeatureTypeRule
- FeatureType
- GeometryTypeRule
- GeometryType
- ExtentRule
- FieldsRule
- AdditionalFields
- CellSizeRule
- CellSize
- RasterRule
- RasterFormatRule
- AdditionalChildren

**Filter**

- Type
- List

**Rows (SearchCursor, InsertCursor, UpdateCursor)**

**SearchCursor**

- Next (): Object
- Reset ()

**InsertCursor**

- Reset ()
- NewRow (): Object
- InsertRow (Object)

**UpdateCursor**

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

**Row**

- FieldName
- GetValue (fieldName)

**Row**

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

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

**Geometry**

- Type
- Extent: Object
- Centroid: Point
- TrueCentroid: Point
- LabelPoint: Point
- FirstPoint: Point
- LastPoint: Point
- Area
- Length
- IsMultipart: Boolean
- PartCount
- HullRectangle
- GetPart (Index): Object

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: Python List
- ShapeFieldName
- ShapeType
- TopologyName

**Table Properties**

- HasOID: Boolean
- OIDFieldName
- Fields: Python List
- Indexes: Python List

**Relationship Class Properties**

- IsVersioned: Boolean
- Fields: Python List

**Table Properties**

**Dataset Properties**

- DatasetType
- Extent: Object
- MExtent
- ZExtent
- SpatialReference: Object

**Raster Catalog Properties**

- RasterFieldName

**Dataset Properties**

**Raster Dataset Properties**

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

**Raster Band Properties**

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

**Table Properties**

**TableView Properties**

- Table: Object
- FIDSet
- FieldInfo: Object
- WhereClause
- NameString

**Table Properties**

**Workspace Properties**

- Connection Properties
- Connection String
- Domains: Python List
- WorkspaceFactoryProgID
- WorkspaceType

**Table Properties**

**Describe Object Properties**

- Data Type
- CatalogPath

**Table Properties**

**Coverage Properties**

- Tolerances

**Table Properties**

**Dataset Properties**

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

Red text indicates a property set.

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. The different colors in this model help you connect the various methods and properties with the appropriate objects.

**Object key**

- Property Get
- Property Get/Put
- Method

Additional information about this model is available in the Using the geoprocessor section of the ArcGIS Desktop 9.3 Help at: Geoprocessing > Automating your work with scripts > Getting started with writing geoprocessing scripts > Using the geoprocessor.