Schematic Object Model
Core Objects

Esri® ArcGIS® 10.4

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Algorithm Objects

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ISchematicAlgorithm

SchematicAlgorithm
ISchematicAlgorithm : IUnknown
- AlgorithmCLSID: String
- Available: Boolean
- Enabled (in SchematicLayer: ISchematicLayer): Boolean
- Label: String
- Overridable: Boolean
- PropertySet: IPropertySet
- SchematicDiagramClassName: ISchematicDiagramClassName
- UseEndNode: Boolean
- UseRootNode: Boolean
- Execute (in SchematicLayer: ISchematicLayer, in CancelTracker: ITrackCancel)

esriSchematicAlgoDirection
0 - esriSchematicAlgoRightLeft
1 - esriSchematicAlgoTopDown
2 - esriSchematicAlgoLeftRight
3 - esriSchematicAlgoBottomUp

esriSchematicAlgoHierarchicalType
0 - esriSchematicAlgoLeftMainLine
1 - esriSchematicAlgoRightMainLine
2 - esriSchematicAlgoMainLine
3 - esriSchematicAlgoCompactTree
4 - esriSchematicAlgoSmartTree

esriSchematicAlgoMainLineType
0 - esriSchematicAlgoMainLineLeft
1 - esriSchematicAlgoMainLineRight
2 - esriSchematicAlgoMainLineCenter

esriSchematicAlgoMainRingType
0 - esriSchematicAlgoMainRingRectangle
1 - esriSchematicAlgoMainRingEllipse

esriSchematicAlgoNumberOfDirection
4 - esriSchematicAlgo4Directions
8 - esriSchematicAlgo8Directions
12 - esriSchematicAlgo12Directions

ISchematicAlgoRadialTree
ISchematicJSONParameters

SchematicAlgoRadialTree
ISchematicAlgoRadialTree : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- InitialRadius: Double
- RadiusFactor: Double

ISchematicAlgoCompactTree
ISchematicJSONParameters

SchematicAlgoCompactTree
ISchematicAlgoCompactTree : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- BreakPoint: Double
- Direction: esriSchematicAlgoDirection
- DistanceAlongTheDirection: Double
- DistancePerpendicularToDirection: Double
- OrthogonalDisplay: Boolean

ISchematicAlgoSmartTree
ISchematicJSONParameters

SchematicAlgoSmartTree
ISchematicAlgoSmartTree : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- BreakPoint: Double
- Direction: esriSchematicAlgoDirection
- DistanceAlongTheDirection: Double
- DistancePerpendicularToDirection: Double
- OrthogonalDisplay: Boolean
- SubtreeSeparation: Double

ISchematicAlgoMainLineTree
ISchematicJSONParameters

SchematicAlgoMainLineTree
ISchematicAlgoMainLineTree : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- BreakPoint: Double
- Direction: esriSchematicAlgoDirection
- DistanceAlongTheDirection: Double
- DistancePerpendicularToDirection: Double
- OrthogonalDisplay: Boolean
- PageLayout: esriSchematicAlgoMainLineType

ISchematicAlgoMainRing
ISchematicJSONParameters

SchematicAlgoMainRing
ISchematicAlgoMainRing : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- BreakPoint: Double
- DistanceAlongTheDirection: Double
- DistancePerpendicularToDirection: Double
- Height: Double
- Length: Double
- LockLinks: Boolean
- MainRingType: esriSchematicAlgoMainRingType
- TreeType: esriSchematicAlgoHierarchicalType

ISchematicAlgoOrthogonal
ISchematicJSONParameters

SchematicAlgoOrthogonal
ISchematicAlgoOrthogonal : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- Angle: Double
- BreakPoint: Double
- DistanceBetweenLinks: Double
- HorizontalStep: Double
- VerticalStep: Double

ISchematicAlgoForceDirected
ISchematicJSONParameters

SchematicAlgoForceDirected
ISchematicAlgoForceDirected : ISchematicAlgorithm
- DegreeOfFreedom: Long
- NumberOfIterations: Long
- RepelFactor: Double
- WithoutDegreeTwoNodes: Boolean

ISchematicAlgoRestoreSavedPositions
ISchematicJSONParameters

SchematicAlgoRestoreSavedPositions
ISchematicAlgoRestoreSavedPositions : ISchematicAlgorithm

ISchematicAlgoSquareLinks
ISchematicJSONParameters

SchematicAlgoSquareLinks
ISchematicAlgoSquareLinks : ISchematicAlgorithm
- BreakPoint: Double
- DistanceBetweenLinks: Double
- NumberOfIterations: Long
- PreservePath: Boolean

ISchematicAlgoLinearDispatch
ISchematicJSONParameters

SchematicAlgoLinearDispatch
ISchematicAlgoLinearDispatch : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- AttractionFactor: Double
- LeaveMaximalShift: Double
- MaximalShift: Double
- MinimalShift: Double
- MoveNodesDeg1: Boolean
- NodesMovements: esriSchematicMovementType
- NotMoveNodesDeg3: Boolean
- NumberOfIterations: Long
- PathPreservation: Boolean
- TranslateLeaf: Boolean

ISchematicAlgoSpatialDispatch
ISchematicJSONParameters

SchematicAlgoSpatialDispatch
ISchematicAlgoSpatialDispatch : ISchematicAlgorithm
- AttractionFactor: Double
- MaxShiftFactor: Double
- MinShiftFactor: Double
- MoveNeighbours: Boolean
- NumberOfIterations: Long

ISchematicAlgoReduceVertices
ISchematicJSONParameters

SchematicAlgoReduceVertices
ISchematicAlgoReduceVertices : ISchematicAlgorithm
- AngleThreshold: Double
- Iteration: Long
- SegmentRatio: Double

ISchematicAlgoSeparateOverlappingLinks
ISchematicJSONParameters

SchematicAlgoSeparateOverlappingLinks
ISchematicAlgoSeparateOverlappingLinks : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- BreakPointDistance: Double
- ShiftBetweenLinks: Double
- Step: Double
- UseOriginLinks: Boolean

ISchematicAlgoMarkCrossings
ISchematicDatasetEvents
ISchematicAlgorithmEvents

SchematicAlgoMarkCrossings
ISchematicAlgoMarkCrossings : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- RemoveMode: Boolean
- SymbolSize: Double

ISchematicAlgoRotateNodesAlongLinks
ISchematicJSONParameters
ISchematicDatasetEvents
ISchematicAlgorithmEvents

SchematicAlgoRotateNodesAlongLinks
ISchematicAlgoRotateNodesAlongLinks : ISchematicAlgorithm
- FlowDirected: Boolean
- FlowUserDataName: String
- Offset: Double

ISchematicAlgoRotateTree
ISchematicJSONParameters

SchematicAlgoRotateTree
ISchematicAlgoRotateTree : ISchematicAlgorithm
- Angle: Double
- LockLinks: Boolean
- RotateNode: Boolean

ISchematicAlgoRelativeMainLine
ISchematicJSONParameters

SchematicAlgoRelativeMainLine
ISchematicAlgoRelativeMainLine : ISchematicAlgorithm
- BreakPointAngle: Double
- CompressAlongDirection: Boolean
- CompressFactor: Double
- Direction: esriSchematicAlgoDirection
- DistanceBetweenBranches: Double
- ExcludedTypeValues: String
- InitialLengthIsGeometry: Boolean
- LengthAttributeName: String
- LinesAttributeName: String
- MainLinesTypeValue: String
- MinimalDistanceBetweenNodes: Double
- PriorityAttributeName: String
- PriorityValue: String
- TypeAttributeName: String
- UsePriorityAttribute: Boolean
- UseTypeAttribute: Boolean
- VerticesHint: Boolean

ISchematicAlgoGrid
ISchematicJSONParameters

SchematicAlgoGrid
ISchematicAlgoGrid : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- HorizontalStep: Double
- OriginX: Double
- OriginY: Double
- VerticalStep: Double

ISchematicAlgoAngleDirected
ISchematicJSONParameters

SchematicAlgoAngleDirected
ISchematicAlgoAngleDirected : ISchematicAlgorithm
- NumberOfDirections: esriSchematicAlgoNumberOfDirection
- NumberOfIterations: Long

ISchematicAlgoComposite

SchematicAlgoComposite
ISchematicAlgoComposite : ISchematicAlgorithm
- Algorithms: IEnumSchematicAlgorithm

ISchematicAlgoBypassNode
ISchematicJSONParameters

SchematicAlgoBypassNode
ISchematicAlgoBypassNode : ISchematicAlgorithm

ISchematicAlgoCompression
ISchematicJSONParameters

SchematicAlgoCompression
ISchematicAlgoCompression : ISchematicAlgorithm
- AbsoluteParameters: Boolean
- ClusterThresholdDistance: Double
- CompressTowardCenter: Boolean
- DistanceBetweenClusters: Double
- HeedContainers: Boolean
- KeepInsideVertices: Boolean
- KeepOutsideVertices: Boolean

ISchematicAlgoInitialPositions
ISchematicJSONParameters

SchematicAlgoInitialPositions
ISchematicAlgoInitialPositions : ISchematicAlgorithm

ISchematicAlgoPartialOverlappingLinks
ISchematicJSONParameters

SchematicAlgoPartialOverlappingLinks
ISchematicAlgoPartialOverlappingLinks : ISchematicAlgorithm
- AttractNodeLinkFactor: Double
- AttractNodesFactor: Double
- BufferWidth: Double
- GapDistance: Double
- GeneralizeResult: Boolean
- LeftRightHint: Boolean
- NumberOfIterations: Long
- RepelLinksFactor: Double
- RepelNodeLinkFactor: Double
- RepelNodesFactor: Double

ISchematicJSONParameters : IUnknown
- JSONParametersArray: IJSONArray
- JSONParametersObject: IJSONObject

ISchematicAlgorithmEvents

SchematicAlgorithmEvents
ISchematicAlgorithmEvents : IUnknown
- AfterExecuteAlgorithm (in Layer: ILayer, in SchematicAlgorithm: ISchematicAlgorithm)
- BeforeExecuteAlgorithm (in Layer: ILayer, in SchematicAlgorithm: ISchematicAlgorithm, in CanExecute: Boolean)

IEnumSchematicAlgorithm

EnumSchematicAlgorithm
IEnumSchematicAlgorithm : IUnknown
- Count: Long
- Add (in pAlgorithm: ISchematicAlgorithm)
- Clear
- Next: ISchematicAlgorithm
- Reset

IAnalystTraceResult

SchematicAnalyst
ISchematicAnalystTraceResult : ISchematicAlgorithm
- TraceResult: IEnumSchematicFeature
- ClearResult

IAnalystFindPath

SchematicAnalystFindPath
ISchematicAnalystFindPath : ISchematicAnalystTraceResult
- SelectLink: Boolean
- SelectNode: Boolean
- UserDataNameForLinkWeight: String
- UserDataNameOfForbiddenLinks: String

IAnalystFindLoops

SchematicAnalystFindLoops
ISchematicAnalystFindLoops : ISchematicAnalystTraceResult
- SelectLink: Boolean
- SelectNode: Boolean
- UserDataNameOfForbiddenLinks: String

IAnalystFindConnected

SchematicAnalystFindConnected
ISchematicAnalystFindConnected : ISchematicAnalystTraceResult
- FlowDirection: Long
- SelectLink: Boolean
- SelectNode: Boolean
- UseFlow: Boolean
- UserDataNameOfForbiddenLinks: String

IAnalystFindOverlappingLinks

SchematicAnalystFindOverlappingLinks
ISchematicAnalystFindOverlappingLinks : ISchematicAnalystTraceResult
- Precision: Double
- SelectLink: Boolean
- SelectNode: Boolean

Class Diagram Key

InterfaceA
(Optional)InterfaceB

AbstractClass
Interface of interest

Type inheritance

CoClass
Interface of interest

InterfaceD
InterfaceB

Composition

Instantiation

Class
Interface of interest

InterfaceG
InterfaceM
{<classname>}InterfaceO

Association
1..*
Multiplicity

Special Interfaces

(Optional) represents interfaces that are inherited by some subclasses but not all. The subclasses list the optional interfaces they implement.

{Instance} represents interfaces that are only on specific instances of the class.

{<classname>} indicates the name of the helper class required to support this event interface in Visual Basic.

Inbound Interface
Outbound Interface

Interface key
- Property Get
- Property Put
- Property GetPut
- Property Put by Reference
- Method

enumeration
firstValue - firstEnumeration
secondValue - secondEnumeration

Structure key <<Struct>>
- firstMember: Type
- secondMember: Type

Types of Classes

An abstract class cannot be used to create new objects but is a specification for instances of subclasses (through type inheritance.)

A CoClass can directly create objects by declaring a new object.

A Class cannot directly create objects, but objects of this class can be created as a property of another class or instantiated by objects from another class.

Types of Relationships

Associations represent relationships between classes. They have defined multiplicities at both ends.

Type inheritance defines specialized classes of objects which share properties and methods with the superclass and have additional properties and methods. Note that interfaces of a superclass are not duplicated in subclasses.

Instantiation specifies that one object from one class has a method with which it creates an object from another class.

Composition is a relationship in which objects from the 'whole' class control the lifetime of objects from the 'part' class.

An N-ary association specifies that more than two classes are associated. A diamond is placed at the intersection of the association branches.

A Multiplicity is a constraint on the number of objects that can be associated with another object. Association and composition relationships have multiplicities on both sides. This is the notation for multiplicities:

1 - One and only one (if none shown, '1' is implied)

0..1 - Zero or one

M..N - From M to N (positive integers)

* or 0..* - From zero to any positive integer

1..* - From one to any positive integer

Schematic Object Model
Miscellaneous Objects

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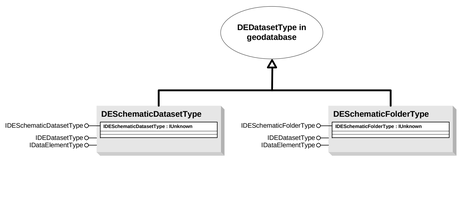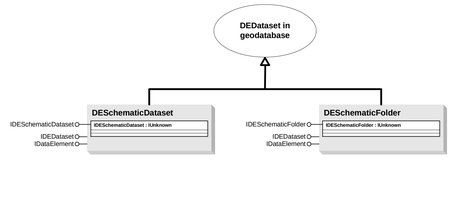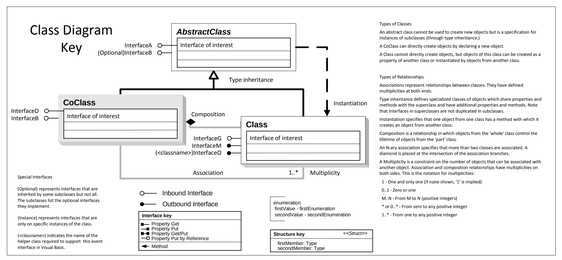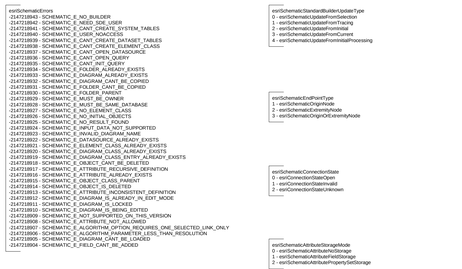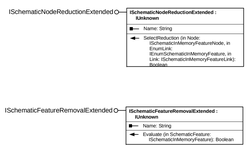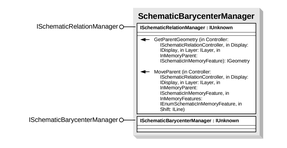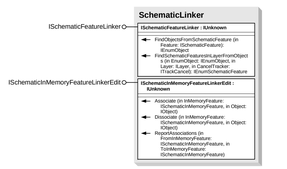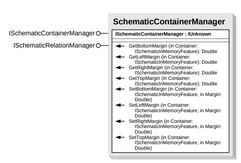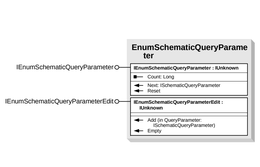
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