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1 Imports System.Collections.Generic
2
3 Imports Grasshopper.Kernel
4 Imports Grasshopper.Kernel.Data
5 Imports Grasshopper.Kernel.Types
6 Imports Rhino.Geometry
7 Imports Interop.gsa_8_7
8 Imports UsageDataCollection
9
10
11 Public Class GetElementEnds
12     Inherits GH_Component
13     ''' <summary>
14     ''' Initializes a new instance of the MyComponent1 class.
15     ''' </summary>
16     Public Sub New()
17         MyBase.New("Get Element End", "ElEnd", _
18             "Import Element End Nodes from GSA File", _
19             "GsaComTools", "Elements")
20     End Sub
21
22     ''' <summary>
23     ''' Registers all the input parameters for this component.
24     ''' </summary>
25     Protected Overrides Sub RegisterInputParams(pManager As GH_Component.GH_InputParamManager)
26         pManager.AddGenericParameter("Gsa", "Gsa", "Gsa COM Object", GH_ParamAccess.item)
27         pManager.AddIntegerParameter("Elements", "Els", "Element Numbers", GH_ParamAccess.list)
28     End Sub
29
30     ''' <summary>
31     ''' Registers all the output parameters for this component.
32     ''' </summary>
33     Protected Overrides Sub RegisterOutputParams(pManager As GH_Component.GH_OutputParamManager)
34         pManager.AddGenericParameter("Gsa", "Gsa", "Gsa COM Object", GH_ParamAccess.item)
35         pManager.AddTextParameter("Ends", "Ends", "Element Ends", GH_ParamAccess.tree)
36     End Sub
37
38     ''' <summary>
39     ''' This is the method that actually does the work.
40     ''' </summary>
41     ''' <param name="DA">The DA object is used to retrieve from inputs and store in outputs.</param>
42     Protected Overrides Sub SolveInstance(DA As IGH_DataAccess)
43         'Declare Variables
44         Dim FileName As String = ""
45         Dim ElemRefs As New List(Of Integer)
46         Dim Elements() As GsaElement
47         Dim Output As New Grasshopper.DataTree(Of String)
48         Dim ElementEnd1 As New List(Of Integer)
49         Dim ElementEnd2 As New List(Of Integer)

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50     Dim s As Short
51     Dim i, j, k As Integer
52     Dim ElemEnd As Integer
53     Dim BranchCount As Integer = 0
54     Dim myDataCollector As New DataCollector
55     Dim myObjectWrapper As Types.GH_ObjectWrapper
56
57     'Import GSA File Name
58     If (Not DA.GetData(0, myObjectWrapper)) Then Return
59     If (Not DA.GetDataList(1, ElemRefs)) Then Return
60
61     Dim GsaObj As ComAuto = TryCast(myObjectWrapper.Value, ComAuto)
62
63     'Get Data
64     s = GsaObj.Elements(ElemRefs.ToArray, Elements)
65     k = 0
66     For Each item In Elements
67         i = 0
68         Do
69             Try
70                 ElemEnd = item.Topo(i)
71                 If i > Output.Branches.Count - 1 Then
72                     Output.AddRange(New List(Of String), New GH_Path(i))
73                     BranchCount += 1
74                     For j = 0 To k - 1
75                         Output.Branches.Item(i).Add(Nothing)
76                     Next
77                 End If
78                 Output.Branches.Item(i).Add(CStr(ElemEnd))
79                 i += 1
80             Catch Ex As Exception
81                 For i = i To Output.Branches.Count - 1
82                     Output.Branches.Item(i).Add(Nothing)
83                 Next
84                 Exit Do
85             End Try
86         Loop
87         k += 1
88     Next
89
90     ' Assign the data to the output parameter.
91     DA.SetData(0, GsaObj)
92     DA.SetDataTree(1, Output)
93
94     'Send Usage Data
95     myDataCollector.UsageStatistics("GetElementEnds")
96
97 End Sub
98
99 ''' <summary>
100 ''' Provides an Icon for every component that will be visible in the User Interface.
101 ''' Icons need to be 24x24 pixels.
102 ''' </summary>
103 Protected Overrides ReadOnly Property Icon() As System.Drawing.Bitmap
104     Get

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105         'You can add image files to your project resources and access them ↗
           like this:
106         ' return Resources.IconForThisComponent;
107         Return My.Resources.Element_ElEnds
108     End Get
109 End Property
110
111     ''' <summary>
112     ''' Gets the unique ID for this component. Do not change this ID after ↗
        release.
113     ''' </summary>
114     Public Overrides ReadOnly Property ComponentGuid() As Guid
115         Get
116             Return New Guid("{1c58d8e7-7a20-4940-8a36-a479afcc5f20}")
117         End Get
118     End Property
119 End Class
```