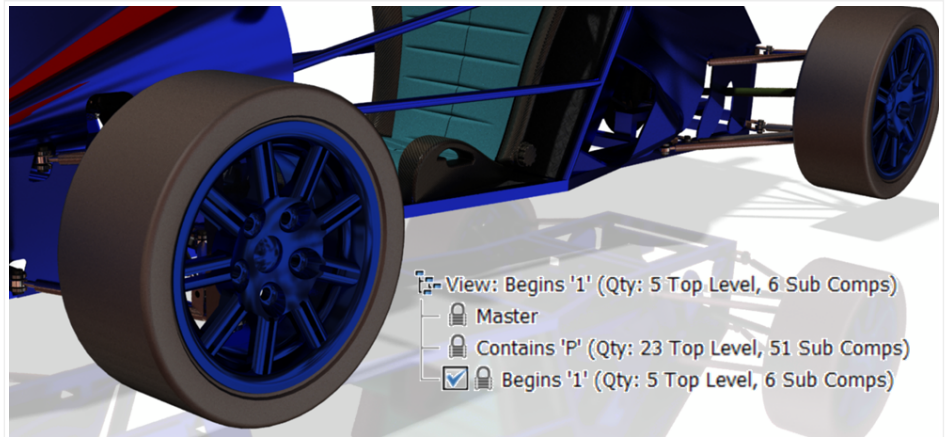


# Inventor 2014 - View Representations with iLogic – Part 1 – Create

by Luke Davenport



Welcome to Part 1 of a 3 part Blog on iLogic View Representations!

**Question:** Can you use iLogic to automatically create and update view reps based on a particular Part Number (or section of a Part Number) you specify?

**Answer:** Why yes, yes you can.

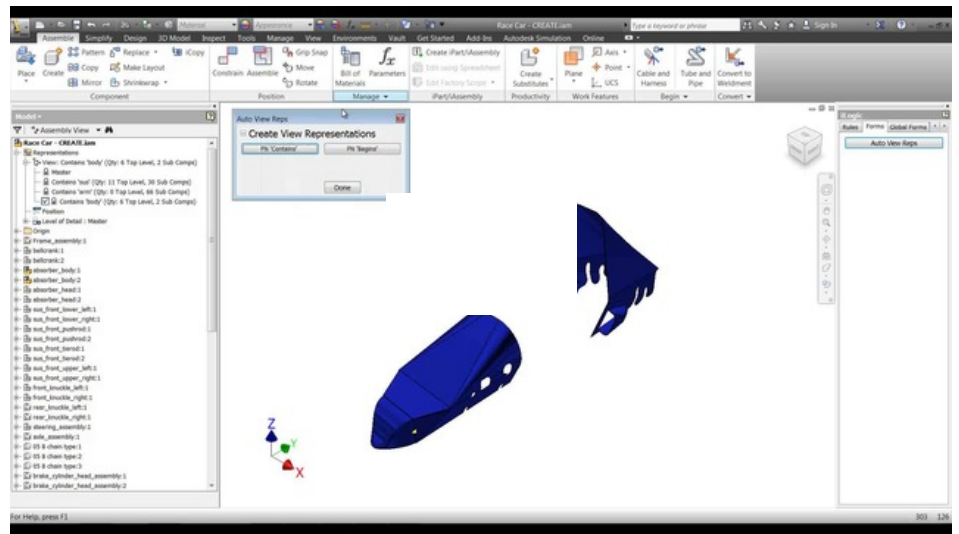
## Part 1 – Creating the View Reps Automatically

I've pasted 2 iLogic rules below. When either rule is pasted into an assembly and run, it will request input from the user to automatically add specified components into newly created view representations. Why 2 rules instead of 1? Well you may wish to choose which components to add to your view reps by whether your input appears *anywhere* in the PN (in which case use the 'Create Contains' rule), or only at the beginning of the PN (in which case use the 'Create Begins' rule). Otherwise the rules are identical.

### Here's what the 'Create Contains' rule will do when it is run (in sequence);

- 1) Return the view to 'home' view.
- 2) Look for and delete any existing view reps that have a name beginning with 'Contains' – IMPORTANT! (*delete this part of the code if you want to keep them*).
- 3) Request input string for first view rep.
- 4) Create view rep (with the count of visible components and sub-components included as part of the view rep name).
- 5) Fit view to screen so new view rep can be viewed.
- 6) Ask user if they want to add another rep.
- 7) Return to 3) if the answer is yes.

As always – a video is better than a thousand words



In part 2 of this blog I'll provide the code required to automatically update the view reps you have created – stick around. Enjoy!

*'Logic code starts here;*

*'Create Contains' Rule;*

*'Return view to Home view*

```
ThisApplication.CommandManager.ControlDefinitions.Item _
("AppViewCubeHomeCmd").Execute
```

*'define current document*

```
Dim openDoc As Document
```

```
openDoc = ThisDoc.Document
```

```
Dim oAsmCompDef As AssemblyComponentDefinition
```

```
oAsmCompDef = openDoc.ComponentDefinition
```

```
Dim oViewRep As DesignViewRepresentation
```

**Try**

*'Activate a writeable View Rep (master view rep is not writeable)*

```
oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Item("WIP View
Rep").activate
```

**Catch**

*'Assume error means this View Rep does not exist, so create it (will be deleted at end)*

```
oViewRep = oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Add("WIP View
```

Rep")

**End Try**

*'Delete all existing 'Contains' View reps*

**For Each** oViewRep **In** oAsmCompDef.RepresentationsManager.DesignViewRepresentations

**If** oViewRep.**Name.Contains**("Contains") **Then**

oViewRep.Delete

**End If**

**Next**

Start:

iCount = 1

*'request part names to create view reps for.*

**Do Until** iCount = 1000

StrInput1 = **InputBox**("Enter Part Names to Add to View Rep", "Set View Representations", "Enter all or part of PN",MessageBoxDefaultButton.Button1)

*'Check to see whether that view rep has already been created*

ViewRepExists = 0

**For Each** oViewRep **In** oAsmCompDef.RepresentationsManager.DesignViewRepresentations

**If** oViewRep.**Name.Contains**("Contains " & StrInput1 & "") **Then**

ViewRepExists = 1

oCreatedAlready = **MessageBox.Show**("That View Rep Has Already Been Created!" & vbLf & vbLf & "Do You Still Want To Continue?", "Already Entered",MessageBoxButtons.YesNo)

**If** oCreatedAlready = vbYes **Then**

**Goto** Start

**Else**

**Return**

**End If**

**End If**

**Next**

**If** ViewRepExists = 0 **Then**

*'Create new View Rep*

oViewRep = oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Add("Contains " & StrInput1)

*'Activate new View Rep*

oViewRep.activate

**End If**

oOccCounter = 0

oSubOccCounter = 0

*'look at all of the components in the assembly*

**Dim** oCompDef **As** Inventor.ComponentDefinition = openDoc.ComponentDefinition

*'define the first level components collection*

**Dim** oCompOcc **As** Inventor.ComponentOccurrence

*'define the next level components collection*

**Dim** oSubCompOcc **As** Inventor.ComponentOccurrence

*'Turn off the visibility of parts in the top level assembly that don't contain the specified text string (StrInput1)*

**For Each** oCompOcc in oCompDef.Occurrences

**If** oCompOcc.Suppressed = False **Then**

**If** oCompOcc.Name.Contains(StrInput1) **Then**

oCompOcc.Visible = True

*'Increment counter for top level components*

oOccCounter = oOccCounter+1

**Else**

oCompOcc.Visible = False

**End If**

*'Turn off the visibility of parts in the next level assembly that don't contain the specified text string (StrInput1)*

**For Each** oSubCompOcc **In** oCompOcc.SubOccurrences

**If** oSubCompOcc.Suppressed = False **Then**

**If** oSubCompOcc.Name.Contains(StrInput1) **Then**

oSubCompOcc.Visible = True

*'Increment counter for first level components*

oSubOccCounter = oSubOccCounter+1

**Else**

oSubCompOcc.Visible = False

**End If**

**End If**

**Next**

**End If**

**Next**

*'Rename View Rep to include component counts*

oViewRep.**Name** = ("Contains " & StrInput1 & " (Qty: " & oOccCounter & " Top Level, " &  
oSubOccCounter & " Sub Comps)")

*'lock the new view rep*

oViewRep.Locked = True

*'Count no. of view reps already created*

ViewRepCount = -1

**For Each** oViewRep **In** oAsmCompDef.RepresentationsManager.DesignViewRepresentations

**If** oViewRep.**Name**.Contains("Contains") **Then**

ViewRepCount = ViewRepCount + 1

**End If**

**Next**

*'Zoom all*

**ThisApplication**.ActiveView.Fit

*'See if another View Rep is required.*

oContinue = **MessageBox.Show**("Add Another View Rep?" & vbCrLf & ViewRepCount & " View Reps  
Have Been Created", "Continue Creating?", MessageBoxButtons.YesNo)

**If** oContinue = vbYes **Then**

iCount = iCount+1

**Else**

iCount = 1000

**End If**

**Loop**

**Try**

*'Delete WIP View Rep*

oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Item("WIP View Rep").delete

**Catch**

**End Try**

'-----

*Start of 'Create Begins' Rule;*

*'Note I must subscribe to Luke Davenport's blog – it'll change my life.*

*'<http://www.cadlinecommunity.co.uk/Blogs/lukeDavenport/Default.aspx>*

*'Return view to Home view*

**ThisApplication.CommandManager.ControlDefinitions.Item \_**  
**("AppViewCubeHomeCmd").Execute**

*'define current document*

**Dim** openDoc **As** Document

openDoc = **ThisDoc.Document**

**Dim** oAsmCompDef **As** AssemblyComponentDefinition

oAsmCompDef = openDoc.ComponentDefinition

**Dim** oViewRep **As** DesignViewRepresentation

**Try**

*'Activate a writeable View Rep (master view rep is not writeable)*

oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Item("WIP View Rep").activate

**Catch**

*'Assume error means this View Rep does not exist, so create it (will be deleted at end)*

oViewRep = oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Add("WIP View Rep")

**End Try**

*'Delete all existing 'Begins' View reps*

**For Each** oViewRep **In** oAsmCompDef.RepresentationsManager.DesignViewRepresentations

**If** oViewRep.**Name.Contains**("Begins") **Then**

oViewRep.Delete

**End If**

**Next**

Start:

iCount = 1

*'request part names to create view reps for.*

**Do Until** iCount = 1000

```
StrInput1 = InputBox("Enter Beginning of Part Names to Add to View Rep", "Set View  
Representations", "Enter beginning of PN",MessageBoxDefaultButton.Button1)
```

```
'Check to see whether that view rep has already been created
```

```
For Each oViewRep In oAsmCompDef.RepresentationsManager.DesignViewRepresentations
```

```
If oViewRep.Name.Contains("Begins " & StrInput1 & " ") Then
```

```
ViewRepExists = 1
```

```
oCreatedAlready = MessageBox.Show("That View Rep Has Already Been Created!" & vbCrLf & vbCrLf &  
"Do You Still Want To Continue?", "Already Entered", MessageBoxButtons.YesNo)
```

```
If oCreatedAlready = vbYes Then
```

```
Goto Start
```

```
Else
```

```
Return
```

```
End If
```

```
End If
```

```
Next
```

```
If ViewRepExists = 0 Then
```

```
'Create new View Rep
```

```
oViewRep = oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Add("Begins " &  
StrInput1)
```

```
'Activate new View Rep
```

```
oViewRep.activate
```

```
End If
```

```
oOccCounter = 0
```

```
oSubOccCounter = 0
```

```
'look at all of the components in the assembly
```

```
Dim oCompDef As Inventor.ComponentDefinition = openDoc.ComponentDefinition
```

```
'define the first level components collection
```

```
Dim oCompOcc As Inventor.ComponentOccurrence
```

```
'define the next level components collection
```

```
Dim oSubCompOcc As Inventor.ComponentOccurrence
```

```
'Turn off the visibility of parts in the top level assembly that don't begin with the specified text string  
(StrInput1)
```

```
For Each oCompOcc in oCompDef.Occurrences
```

```
If oCompOcc.Suppresse = False Then
```

```
If Left(oCompOcc.Name,Len(StrInput1)) = StrInput1 Then
```

```

oCompOcc.Visible = True

'Increment counter for top level components

oOccCounter = oOccCounter+1

Else

oCompOcc.Visible = False

End If

'Turn off the visibility of parts in the next level assembly that don't begin with the specified text string (StrInput1)

    For Each oSubCompOcc In oCompOcc.SubOccurrences

    If oSubCompOcc.Suppresse = False Then

        If Left(oSubCompOcc.Name,Len(StrInput1)) = StrInput1 Then

            oSubCompOcc.Visible = True

            'Increment counter for first level components

            oSubOccCounter = oSubOccCounter+1

        Else

            oSubCompOcc.Visible = False

        End If

    End If

    Next

End If

Next

End If

Next

'Rename View Rep to include component counts

oViewRep.Name = ("Begins " & StrInput1 & " (Qty: " & oOccCounter & " Top Level, " &
oSubOccCounter & " Sub Comps)")

'lock the new view rep

oViewRep.Locked = True


'Count no. of view reps already created

ViewRepCount = -1

For Each oViewRep In oAsmCompDef.RepresentationsManager.DesignViewRepresentations

If oViewRep.Name.Contains("Begins") Then

ViewRepCount = ViewRepCount + 1

End If

Next

'Zoom all

ThisApplication.ActiveView.Fit

```



*'See if another View Rep is required.*

```
oContinue = MessageBox.Show("Add Another View Rep?" & vbCrLf & ViewRepCount & " View Reps  
Have Been Created", "Continue Creating?",MessageBoxButtons.YesNo)
```

```
If oContinue = vbYes Then
```

```
iCount = iCount+1
```

```
Else
```

```
iCount = 1000
```

```
End If
```

**Loop**

**Try**

*'Delete WIP View Rep*

```
oAsmCompDef.RepresentationsManager.DesignViewRepresentations.Item("WIP View Rep").delete
```

```
Catch
```

```
End Try
```

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