

KETIV

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Sub Main()  
    ' This function contains the required code to create the skid assembly based on parameters that are passed from the parent assembly  
    ' If the diameter is 30" or less, change out I-beam skids for rectangular beams  
    If TANK_OD <= 30 Then  
        Dim oSkidAssy As AssemblyDocument  
        ' This sets a reference to this file - the skid assembly  
        oSkidAssy = ThisApplication.Documents.ItemByName(PROJECT_PATH & PROJECT_ID & "\Skid Assy\Skid Assy - " & PROJECT_ID & ".iam")  
  
        ' We now have string variables the represent the current skids, the new skids, and the template file we need to copy for the  
        '     new skids  
        Dim strOldFileName, strNewFileName, strTemplateFileName As String  
        strOldFileName = PROJECT_PATH & PROJECT_ID & "\Skid Assy\Skid-1 - " & PROJECT_ID & ".ipt"  
        strNewFileName = PROJECT_PATH & PROJECT_ID & "\Skid Assy\Skid-2 - " & PROJECT_ID & ".ipt"  
        strTemplateFileName = TEMPLATE_PATH & "\Skid Assy\Skid-2.ipt"  
        ' These commands copy the new skid (rectangular tube) beam to our project folder, and then update the reference  
        '     in this assembly file ("Component Replace") to the new skid tube model  
        ' It then saves this assembly file, and gets rid of our reference to it  
        System.IO.File.Copy(strTemplateFileName, strNewFileName)  
        oSkidAssy.File.ReferencedFileDescriptors.Item(strOldFileName).ReplaceReference(strNewFileName)  
        oSkidAssy.Save  
        oSkidAssy = Nothing  
    End If  
  
    ' Create a fresh copy of the saddle assembly, and add it to the assembly at the origin  
    Dim strNewSaddleFilename As String  
    strNewSaddleFilename = PROJECT_PATH & PROJECT_ID & "\Skid Assy\Saddle Assy - " & PROJECT_ID & ".iam"  
  
    ' We check to make sure a saddle assembly hasn't been previously created  
    ' If it hasn't been created previously, then we create a new copy of it  
    If System.IO.File.Exists(strNewSaddleFilename) = False Then  
        Dim subAssyl As AssemblyDocument  
        Dim intTotalShells As Integer  
        Dim intConstraintNumber As Integer  
        ' This uses our "CopyComponents" subroutine (found at the end of this rule) to do a kind of "Copy Design" of the  
        '     saddle assembly  
        ' This gives us a new copy of it that can be modified without affecting the template files  
        CopyComponents(TEMPLATE_PATH & "Skid Assy\", "Saddle Assy.iam", "Skid Assy")  
        ' This will tell us how many shell plates are needed for this sepcific tank  
        ' We use this to determine how many saddle assemblies will need to be placed into the assembly  
        ' We need a saddle under each seam for proper support  
        intTotalShells = SHELL_Q_1 + SHELL_Q_2  
        subAssyl = ThisApplication.Documents.ItemByName(strNewSaddleFilename)  
        ' If OD of the tank is 30" or less, sub the saddle part-2 with the alternate part file (SK-Saddle-2b.ipt)  
        ' This is a separate part that is needed if we have to use rectangular tubing instead of I-beams  
        If TANK_OD <= 30 in Then  
            ' This code will copy the new saddle support piece into our project folder, and substitute the assembly  
            '     reference ("Component Replace") to the new plate  
            Dim strOldSaddle, strNewSaddle As String  
            strOldSaddle = PROJECT_PATH & PROJECT_ID & "\Skid Assy\Saddle-2a - " & PROJECT_ID & ".ipt"  
            strNewSaddle = PROJECT_PATH & PROJECT_ID & "\Skid Assy\Saddle-2b - " & PROJECT_ID & ".ipt"  
            System.IO.File.Copy(TEMPLATE_PATH & "\Skid Assy\Saddle-2b.ipt", strNewSaddle)  
            subAssyl.File.ReferencedFileDescriptors.Item(strOldSaddle).ReplaceReference(strNewSaddle)  
            subAssyl.Save  
        End If  
        ' Change Occurrence names of the saddle components in the model browser so that the  
        '     "Update Saddle Parameters" rule will work As-Is  
        subAssyl.ComponentDefinition.Occurrences(2).Name = "Saddle-1:1"
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subAssyl.ComponentDefinition.Occurrences(3).Name = "Saddle-2:1"
subAssyl.ComponentDefinition.Occurrences(4).Name = "Saddle-3:1"
' Each constraint that is created needs a unique identifier
' Since we already have 4 constraints that have been created in the model template, we want to start numbering the new constraints we
' create with the number 5
intConstraintNumber = 5
' We need one more saddle assembly than number of shells (i.e. if we have 5 shell plates, there are 6 seams that need to be supported)
' This For loop will first add a new instance of the saddle assembly into our skid assembly model
' Then flush constraints will be created for the new saddle assembly for the "YZ" and "XZ" planes
' After that, the total offset for the current seam will be calculated, and the saddle assemblies last flush constraint will have
' an offset so that they are spaced perfectly under each seam
For i = 1 To intTotalShells + 1
    Dim componentA = Components.Add("Saddle Assy:" & i, PROJECT_PATH & PROJECT_ID & "\Skid Assy\Saddle Assy - " & PROJECT_ID & ".iam")
    Constraints.AddFlush("Flush:" & intConstraintNumber, "", "YZ Plane",
        "Saddle Assy:" & i, "YZ Plane")
    Constraints.AddFlush("Flush:" & intConstraintNumber + 1, "", "XZ Plane",
        "Saddle Assy:" & i, "XZ Plane")
    Dim intSaddleOffset As Integer
    If i > SHELL_Q_1 Then
        intSaddleOffset = SHELL_Q_1 * SHELL_W_1 + (i - SHELL_Q_1 - 1) * SHELL_W_2
    Else
        intSaddleOffset = (i - 1) * SHELL_W_1
    End If
    Constraints.AddFlush("Flush:" & intConstraintNumber + 2, "Saddle Assy:" & i,
        "XY Plane", "", "Work Plane1", intSaddleOffset)
    intConstraintNumber = intConstraintNumber + 3
Next
' After we have placed all of the instances of the saddle assembly in our skid assembly, and located them properly, we then need
' to update the sizes of the saddles, and we do that by running the "Update Saddle Parameters" rule
iLogicVb.RunRule("Update Saddle Parameters")
subAssyl.Close
End If
End Sub

Sub CopyComponents(strFilePath As String, strAssemblyName As String, strFolderName As String)
' This is the same subroutine used in the top level "Create New Tank.iam" file
' For more information regarding this subroutine, refer to the notes in the top assembly level file
Dim oAsmDoc As AssemblyDocument
oAsmDoc = ThisApplication.Documents.Open(strFilePath & strAssemblyName, True)
oAsmDoc.SaveAs(PROJECT_PATH & PROJECT_ID & "\" & strFolderName & "\" & Left(strAssemblyName, strAssemblyName.Length - 4) & " - " & PROJECT_ID & ".iam", False)

Dim oRefDocs As DocumentsEnumerator
oRefDocs = oAsmDoc.AllReferencedDocuments

Dim oRefDoc As Document
For Each oRefDoc In oRefDocs
    Dim strNewFileName As String
    Dim strOldFileName As String
    strOldFileName = strFilePath & oRefDoc.DisplayName
    strNewFileName = PROJECT_PATH & PROJECT_ID & "\" & strFolderName & "\" & Left(oRefDoc.DisplayName, oRefDoc.DisplayName.Length - 4) & " - " & PROJECT_ID & ".ipt"
    oRefDoc.SaveAs(strNewFileName, True)
    oAsmDoc.File.ReferencedFileDescriptors.Item(strOldFileName).ReplaceReference(strNewFileName)
Next
End Sub
```