SOLIDWORKS API - Basics

Garrett Klein
Application Engineer
Quest Integration
Todays Topics

- Navigating the SOLIDWORKS API
- Advantages/Disadvantages
- Customizing UI
- Custom Property manipulation
- System settings
- Document settings
- Simple Macro
- Simple Add-in
- Creating Templates
Navigating the SW API

• Tutorials
• Where is the help?
Navigating SOLIDWORKS using the SOLIDWORKS Object model is one of the hardest parts of learning to use the SOLIDWORKS API.
Dim swApp As SldWorks.SldWorks
Dim Part As ModelDoc2
Dim boolstatus As Boolean
Dim longstatus As Long, longwarnings As Long

Sub main()
    Set swApp = Application.SldWorks
    Set Part = swApp.NewDocument("C:\ProgramData\SolidWorks\SOLIDWORKS 2015\templates\Part.prtdot", 0, 0, 0)
    boolstatus = Part.Extension.SelectByID2("Top Plane", "PLANE", 0, 0, False, 0, Nothing, 0)
    Part.SketchManager.InsertSketch True
    Part.ClearSelection2 True
    Dim skSegment As Object
    Set skSegment = Part.SketchManager.CreateCircle(0#, 0#, 0#, 0.068006, 0.009772, 0#)
    boolstatus = Part.Extension.SelectByID2("Arc1", "SKETCHSEGMENT", 0, 0, False, 0, Nothing, 0)
Picking a good language to get started

• Options are VBA, VB.NET, C# and C++
• All tutorials in SOLIDWORKS are VBA
• All SOLIDWORKS Certified training is in VBA
• Choosing Language will depend on what you are trying to do (Macro vs Add-in).
Advantages/Disadvantages

• Disadvantage: Writing/Learning can cost a lot of time.
• Advantage: Automation can save time more time!

• Consider automating in staged process.
• Starting with Macros is a great way to learn.
• Check to see if your automation already exists or can be quickly transformed into what you want.
• Work with SOLIDWORKS whenever possible
Customizing the SOLIDWORKS User Interface

- Create PropertyManagerPage (Example 1)
- Create ModelViewPage (Example 2)
- Create Task Pane tab

TIP: Icons BMP 16X18
Custom Property Manipulation

- Form based Entry (Example 2.5)
- Link to text files/ external databases
- Automating part number migration (Example 3)

Consider using Property Tab Builder if no calcs are necessary
System Settings

• Capture settings from users before they riot!
• Set settings how you need them for your application.
• Change them back if the users are nice to you.
• This helps with consistency(Example 4)
• File Conversion streamlining
Changing Document Settings

• Force Everyone to use ANSI standard (example 5)
• Only particular options

Consider using Design Checker!!!
Creating Macros

- Use Macro Recorder
- Keep library of your macros
- Modify using Microsoft Visual Basic for Applications 2012 preinstalled with every SOLIDWORKS install
- Add additional controls
Fun Macro Bonus Trick

• Modify SOLIDWORKS Shortcut to launch Macro on startup!

"C:\Program Files\SolidWorks Corp\SOLIDWORKS\SLDWORKS.exe" -m
"C:\Tech Day 2016\Templates\mystartup.swp"
Creating Add-ins

• Why? Because we’re professional!
• Need to have Microsoft Visual Studio Professional 2010 and up
• Install SOLIDWORKS API/Extract it using 7zip and put in the correct place.
• Let's make one really quick!
• Remember .NET 4.0+
Creating Templates

• develop a good layout
• cleanup your add-in
• Use visual studio to create your own starting points
Thanks for attending:

Call: 1 800 370 3750
Email: support@qintegration.com
Website: www.qintegration.com\support

Also API support direct apisupport@3ds.com