



SOLIDWORKS API - Basics

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Quest Integration

Today's Topics

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



Speed

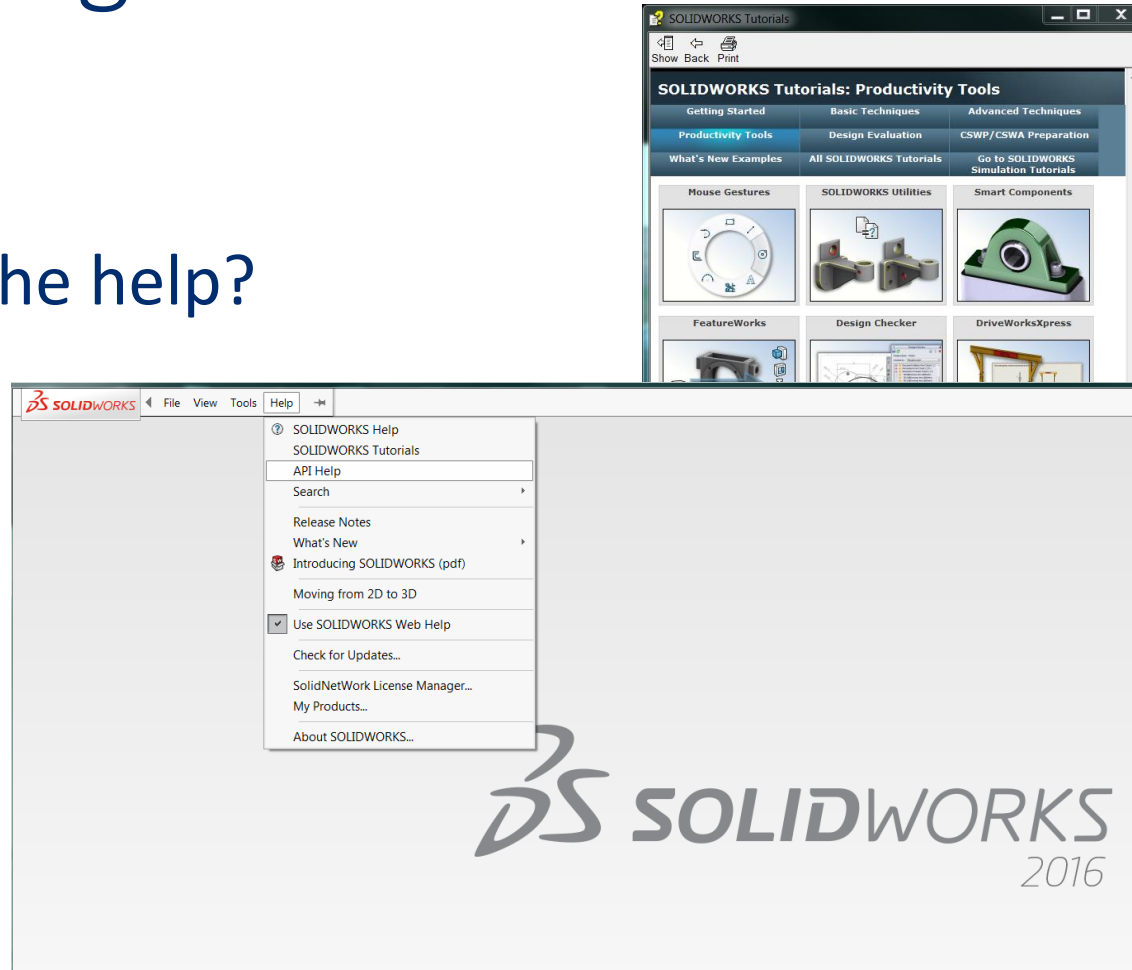
~~Repetition~~

Consistency

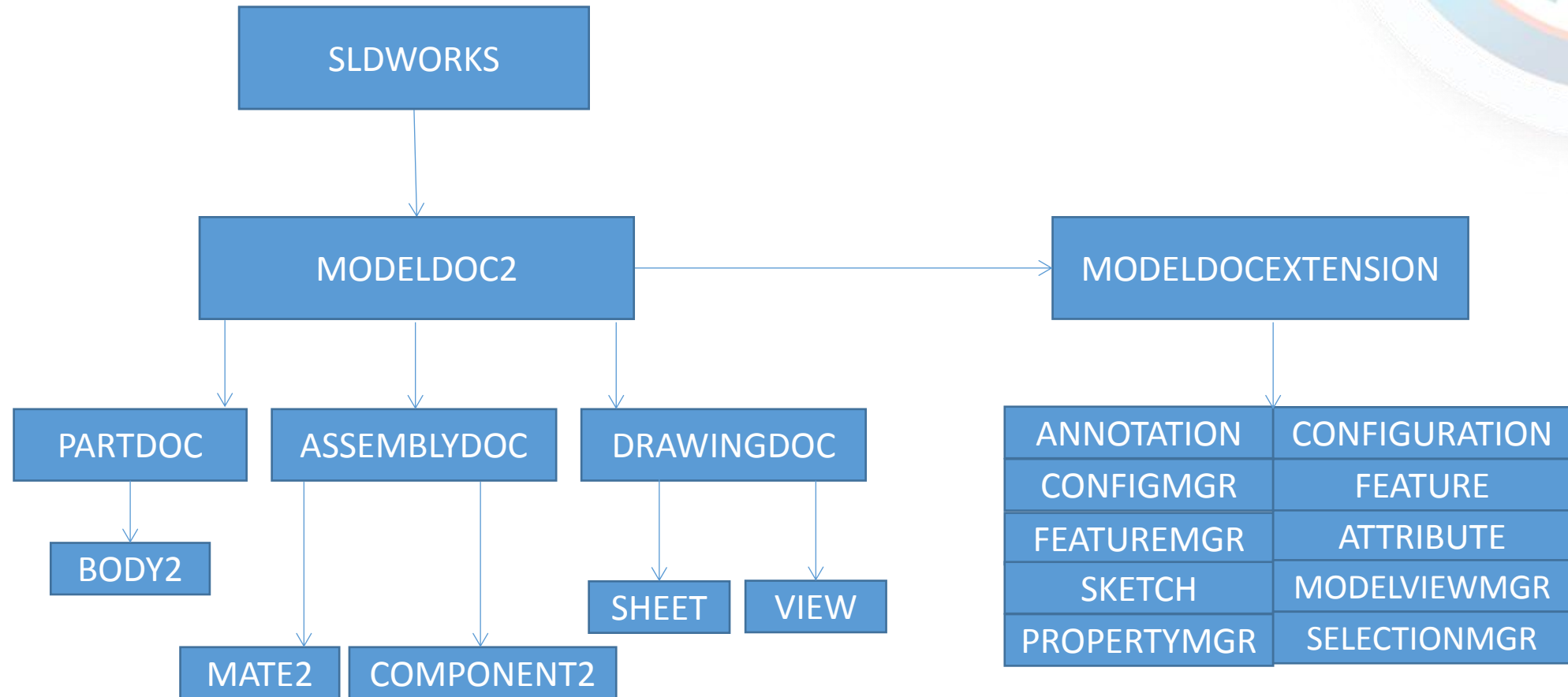


Navigating the SW API

- 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

```

```

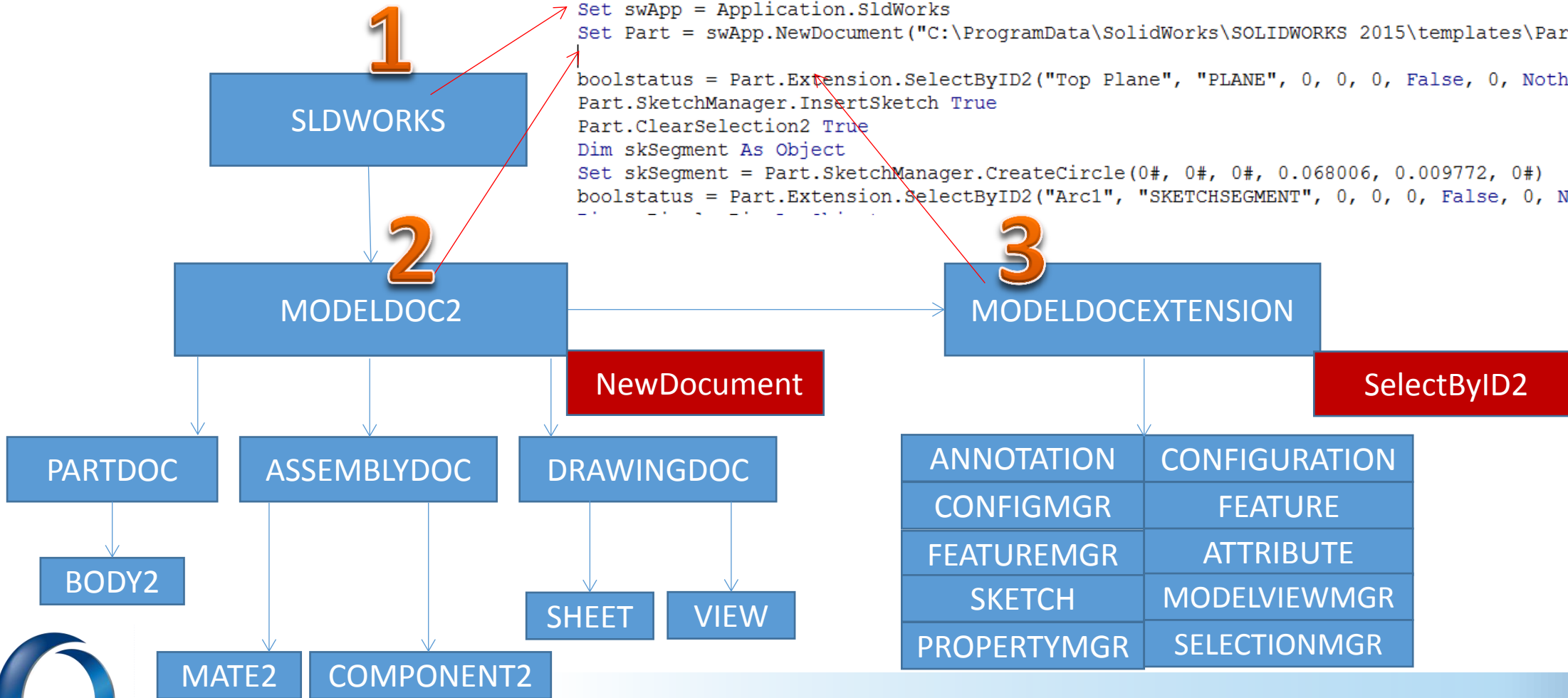
Sub main()

```

```

Set swApp = Application.SldWorks
Set Part = swApp.NewDocument("C:\ProgramData\SolidWorks\SOLIDWORKS 2015\templates\Part.prt", 0, 0, 0)
boolstatus = Part.Extension.SelectByID2("Top Plane", "PLANE", 0, 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, 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).

VBA
VB.NET
C#
C++

 Microsoft Visual Basic for Applications

 Visual Studio



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

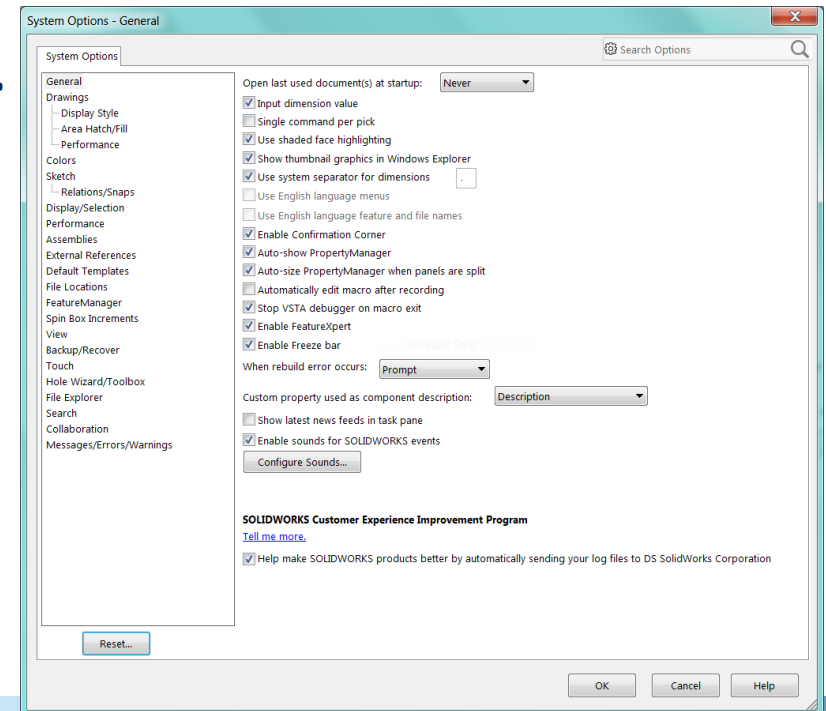
- Form based Entry(Example 2.5)
- Link to text files/ external databases
- Automating part number migration(Example 3)

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

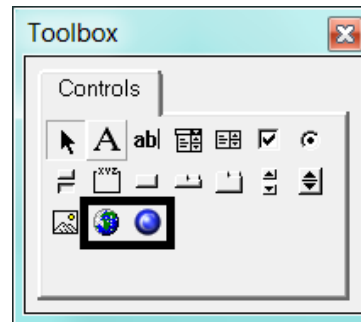


Consider using Design Checker!!!



Creating Macros

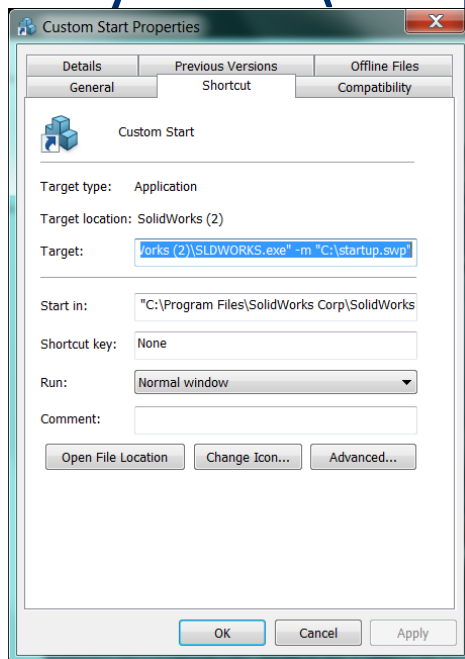
- Use Macro Recorder
- Keep library of your macros
- Modify using Microsoft Visual Basic for Applications 2012 preinstalled with every SOLIDWORKS install
- Add additional controls



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.
- Lets 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:

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