
API Basics

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Robin Richter
Sr. API Support Engineer

Agenda

- **API Terms**
- **API Fundamental Class Information**
- **API Help Documentation**
- **Using API Help**
- **Macro Recording**
- **Part Automation**
- **Document Settings**
- **Assembly Automation**

API Terms

- **API – Application Programming Interface**
- **Macro – Short Set of Commands**
- **Addin – Advanced Automation**

API Terms continued

- **VSTA – Visual Studio Tools for Application**
 - Macro Editor Embedded in SolidWorks
- **.NET Framework**
 - Multi-Language Development Tool Created by Microsoft
- **COM - Component Object Model**
 - Facilities Communication Between Applications

API Help

- **API Documentation**

- Help.SolidWorks.Com
- From SolidWorks Application: Help->API Help

- **API Forums**

- Forum.SolidWorks.Com

- **API Support**

- ApiSupport@SolidWorks.com

- **Microsoft Developer Network – Coding Resources**

- www.msdn.com

API Fundamental Class Information

- **Covers SolidWorks Automation**
- **Prerequisites**
 - SolidWorks Essentials
 - Visual Basic programming



Using API help

- Many samples that can be modified to meet your needs
- Explanation of every API
- Get Mass Example
- Creating macro button in the user interface

Macro Recording

- Records actions in the UI as API commands
- Can be saved to VBA, VB.NET, C#
- Tips
 - Plan the steps before recording
 - Break activities into several small recordings that can be combined later
 - Remove extraneous view changes
 - Look out for model specific calls like **Activate**("Part33")
- How to debug in VSTA
- Open and Save Example

Part Automation Example

- **Using a macro to create multiple configurations**
- **Editing dimensions**
- **Changing materials**



Document Settings

- **User Preference** section of the help
- **Function for each type of setting**
 - IModelDocExtension::SetUserPreferenceDouble
 - IModelDocExtension::SetUserPreferenceInteger
 - IModelDocExtension::SetUserPreferenceString
 - IModelDocExtension::SetUserPreferenceTextFormat
 - IModelDocExtension::SetUserPreferenceToggle

Assembly Automation

- **Component traversal**
 - Selecting Components
 - Change Colors
 - Set custom properties



Conclusion

- **Other Products with API Support**
 - Enterprise PDM
 - eDrawings
 - Workgroup PDM
 - 2D Editor
- **The API can make life easier**
- **Don't have to be a programming expert**