cadmicro **SOLIDWORKS TRAINING**


# SOLIDWORKS API FUNDAMENTALS

| PREREQUISITES | LENGTH | DESCRIPTION |
|---|---|---|
| ▪ SolidWorks Essentials or equivalent experience and Visual Basic Programming. | 3 Days | ▪ API Fundamentals teaches you how to use the SOLIDWORKS API (Application Programming Interface) to automate and customize SolidWorks. |

## ▶ USING THE MACRO RECORDER

- Macro Recording
- Macro Tool bar
- Understanding How Macro Code Works
- Understanding How to Call Members on API Interfaces
- Passing Parameters
- Cleaning Up Code
- Adding Forms to a Macro
- Exercise l: Recording a Macro
- Exercise 2: Adding Macro Code to a VBA Button Control
- Exercise 3: Adding User Input Fields on a VBA Form

## ▶ THE API OBJECT MODEL

- SOLIDWORKS API Object Model
- Application Objects
- Case Study: Connecting to New Documents
- Case Study: Connecting to Existing Documents
- Exercise 4: Working with New Documents
- Exercise 5: Working with Existing Documents

## ▶ SETTING SYSTEM OPTIONS

- User Preferences - System Options
- User Preferences - Document Properties
- Locating the Correct AP Is and Enumeration Values
- User Preference Tables For System Options, Document Properties and Menu Items
- Exercise 6: Change Multiple System Options
- Exercise 7: Change Multiple Document Properties

## ▶ AUTOMATING PART DESIGN

- Case Study: Automation Tool for Parts
- Enabling Contour Selection for the Extrusion
- Sketch Tools Commands
- Reference Geometry Commands
- Exercise 8: Automating the Part Creation Process

## ▶ ASSEMBLY AUTOMATION

- Case Study: Automation Tool for Assemblies
- Establishing the Curve and Edge Collections
- Adding and Mating the Knobs to the Chassis
- Exercise 9: Adding Components

## ▶ DRAWING AUTOMATION

- Case Study: Automating Drawing Creation
- Saving Drawings in Different Formats
- Traversing Drawing Views
- Exercise 10: Drawing Automation

## ▶ SELECTION & TRAVERSAL TECHNIQUES

- Case Study: Programming With a Selected Object
- The SOLIDWORKS BREP Model
- Case Study: Body and Face Traversal
- Case Study: Feature Manager Traversal
- Exercise 11: Handling Preselection I
- Exercise 12: Handling Preselection 2
- Exercise 13: Traversing the Feature Manager Design Tree

# SOLIDWORKS API FUNDAMENTALS

## ▶ ADDING CUSTOM PROPERTIES & ATTRIBUTES

- Case Study: Custom Properties
- Case Study: Configurations With Custom Properties
- Case Study: File Summary Information
- Case Study: Document Attributes
- The Attribute Objects
- Case Study: Face Attributes
- Exercise 14: Adding Mass Properties as Custom Properties
- Exercise 15: Adding Attributes to Edges

## ▶ THE SOLIDWORKS API SDK

- Installing the SDK
- Case Study: Creating a VB.NET Add-In
- Case Study: Creating a C# Add-in
- Case Study: C++ Add-Ins
- Choosing a Programming Language
- Case Study: Face Attributes
- Exercise 14: Adding Mass Properties as Custom Properties
- Exercise 15: Adding Attributes to Edges

## ▶ CUSTOMIZING THE SOLIDWORKS USER INTERFACE

- Case Study: Customizing the UI With VB.NET
- Understanding The Add-in Code
- Property Pages
- Property Page Groups and Controls
- Removing Menus and Tool bars
- Other Areas of Customization
- Exercise 16: Implement a New Menu
- Exercise 17: Implement Tool bar Buttons
- Exercise 18: Implement Controls on a Property Manager Page

## ▶ NOTIFICATIONS

- Notifications
- Notifications in VBA
- Case Study: Simple Notification
- Case Study: Using Notifications in .NET
- The Event Handler Classes
- The DocView Class
- Exercise 19: Handling Events Using the Add-in Wizard