SOLIDWORKS API FUNDAMENTALS

Pre-Requisites: Familiarity with Windows and Microsoft Visual Basic, SOLIDWORKS Essentials

Daily Schedule: 8:30 a.m. - 4:30 p.m.

Length: 3 Days

This course introduces students to the SOLIDWORKS Application Programming Interface (API). The course focuses on the fundamental skills and concepts central to building automation tools. Lessons include macro recording, VB foundations, part and drawing automation, and creating utility scripts. Users will actually create routines to serve as examples they can take back for their own projects.

Introduction:

- » Review of Programming Topics
- » Review of VBA
- » API Documentation

Lesson 1: Using the Macro Recorder

- » Macro Recording
- » Macro Toolbar
- » Understanding How Macro Code Works
- » Understanding How to Call Members on API Interfaces
- » Passing Parameters
- » Cleaning Up Code
- » Adding Forms to a Macro

Lesson 2: The API Object Model

- » SOLIDWORKS API Object Model
- » Application Objects
- » Case Study: Connecting to New Documents
- » Case Study: Connecting to Existing Documents

Lesson 3: Setting System Options and Document Properties

- » User Preferences - System Options
- » User Preferences - Document Properties
- » Locating the Correct APIs and Enumeration Values

- » UserPreference Tables For System Options
- » UserPreference Tables For Document Properties

Lesson 4: Automating Part Design

- » Case Study: Automation Tool for Parts

Lesson 5: Assembly Automation

- » Case Study: Automation Tool for Assemblies

Lesson 6: Drawing Automation

- » Case Study: Automating Drawing Creation

Lesson 7: Selection and Traversal Techniques

- » Case Study: Programming With a Selected Object
- » The SOLIDWORKS BREP Model
- » Case Study: Body and Face Traversal
- » Case Study: Feature Manager Traversal

Lesson 8: Adding Custom Properties and 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

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Personal Project:

» There is no better way to learn than by doing. Bring a project you would like to make a reality, and we'll start on it together. You may not finish depending on the scope, but you'll receive guidance. Along the way, we'll discuss obstacles encountered as a class. Ideally, you'll leave having been exposed to common pitfalls with either a completed project or a roadmap to completion.