



### CADVertex Solutions

A-16 . Whispering Wind . Pashan-Baner Link Road . Pashan . Pune . 411021  
[www.CADVertex.com](http://www.CADVertex.com) [info@cadvertex.com](mailto:info@cadvertex.com) Phone :+91 9890611694

## SolidWorks Automation

Language: VB.Net or CSharp

### Training Structure

**Module 1:** VB.Net or CSharp Programming.

**Module 2:** SolidWorks Automation.

### Training Highlights



Online Training



Flexible Timings



Trainer: 25 yrs Exp.



Duration: 6 Wks



1 Hour Daily



Basic to Advanced



5 Industry Projs



Certificate



Support after Training



CuttingEdge Tech

### List of Projects (Automation)

1. Geometric Calculator
2. Create Drawing Views
3. Batch Processor
4. Title Block Update
5. Parametric Parts
6. Assembly Cost Estimation

## **Module 1: VB.Net or CSharp.Net Programming**

### **1. Installing Visual Studio**

- Installing Visual Studio Community version.
- Setting the default language.
- Customizing the layout.
- Solution Explorer, Toolbox and the Properties windows.

### **2. Introduction to Programming**

- Selecting a project template.
- Setting up user interaction and collecting inputs.
- Variable types - Double, Integer, and String.
- Acquiring user input from textboxes into variables.
- Calculations and display outputs.
- Using the .Net Math library functions.
- Various files and their meaning in the project structure.
- Separating source code from the executable.

### **3. Creating a Windows Forms Application**

- Setting dialog box properties.
- Adding controls: Button, TextBox, Label, Checkbox, RadioButton.
- Adding images to PictureBox and other controls.
- Aligning text and images on controls.
- Composite controls: ListBox and ComboBox.
- Adjusting various properties for each type of control.

### **4. Arrays and Loops**

- Filling arrays and reading array elements.
- Filling ListBoxes with array elements.
- ForEach loop.

### **5. Functions and Subroutines**

- Arguments.
- Return Types.
- Return Values in Functions.
- Function Overloading.

### **6. Multi-Form Projects**

- Adding Forms to a project.
- Form Constructor and object variables.
- Form objects and invoking Forms.
- Exchanging data between Forms.

## 7. Object Oriented Programming

- Creating a class.
- Adding member functions.
- Public and Private methods.
- Adding member variables.
- Encapsulation.
- Polymorphism.

## Module 2: CAD Automation

### 8. Getting Started

- ❖ Connect to CAD
- ❖ Getting information from the UI
- ❖ Read-write various properties of the UI

### 9. Documents Automation

- ❖ Document types
- ❖ Create new files - Part, Drawing and Assembly
- ❖ Open, Close, Save and SaveAs documents
- ❖ Close all documents in the Session
- ❖ Export documents to other formats
- ❖ Activate files in a session
- ❖ Loop through files in the session

### 10. File Handling

- ❖ Standard file dialogs to select files
- ❖ Setting file filters
- ❖ [Industry Project](#) – Batch Processor

### 11. Managing Sheets in Drawings

- ❖ Creating drawing sheets
- ❖ Accessing sheets in a drawing
- ❖ Counting sheets
- ❖ Switching between sheets

### 12. Drawing Views

- ❖ Create drawing views
- ❖ [Industry Project](#) - Creating standard views of 3D models

### 13. Handling Text in Drawings

- ❖ Access text objects in a drawing document
- ❖ [Industry Project](#) - Automatic Title Block Updater Program

### 14. Parametric Parts

- ❖ Control parametric part
- ❖ Expression and formulas - dimensions and variables
- ❖ [Industry Project](#) - Modify features of a parametric shaft with a keyway

### 15. Assembly and Cost Estimation

- ❖ Get components of an assembly
- ❖ [Industry Project](#) - Estimate cost of assembly

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WhatsApp/Telegram/Call: +91 9890611694

### **Other eBooks and Training Programs from CADVertex:**

- ❖ CATIA Automation: VB.Net or CSharp or Python
- ❖ SolidWorks Automation: VB.Net or CSharp or Python
- ❖ Solid Edge Automation: VB.Net or CSharp or Python
- ❖ Inventor Automation: VB.Net or CSharp or Python
  
- ❖ NX Open: VB.Net or CSharp with Win Forms
- ❖ NX Open: VB.Net or CSharp with Block UI Styler
- ❖ Knowledge Fusion
- ❖ Knowledge Fusion with Block UI Styler
  
- ❖ [Revit API – Plugin creation using CSharp and Python, Dynamo](#)
- ❖ [Tekla Open API programming](#)
  
- ❖ cMayoCAD: Learn to build a new CAD program from scratch using a Geometric Modeling Kernel and CSharp
  
- ❖ Machine Learning for Engineers with Python
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- ❖ Fast track course in Python with Machine Learning for VB.Net experts
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**+ 91 9890611694**

**eMail**

[info@CADVertex.com](mailto:info@CADVertex.com)

**Website**

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