CATIA Automation
Language: **VB.Net or CSharp**

Training Structure

Module 1: VB.Net or CSharp Programming.
Module 2: CATIA Automation.

Training Highlights
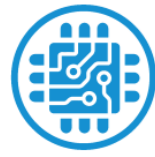
List of Projects (Automation)

1. Geometric Calculator
2. Create Drawing Views
3. Batch Processor
4. Title Blocks and Annotations
5. Parametric Parts
6. Build Assembly

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 and extracting sheet info
- ❖ 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. 2D objects in Drawings

- ❖ Creating 2D objects in a drawing document

15. Parametric Parts

- ❖ Control parametric part
- ❖ Expression and formulas - dimensions and variables
- ❖ Industry Project - Modify features of a parametric shaft with a keyway

16. Assembly Generation

- ❖ Inserting parts into an assembly
- ❖ Positioning components in an assembly

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CADVertex Software
A-16 . Whispering Wind . Pashan-Baner Link Road
Pashan . Pune . 411021

www.CADVertex.com
info@cadvertex.com

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Phone & Chat   **+ 91 9890611694**

eMail   **info@CADVertex.com**

Website   **www.CADVertex.com**