



CADVertex Solutions

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

www.CADVertex.com info@cadvertex.com Phone :+91 9890611694

SolidWorks Automation

Language: **Python**

Training Structure

Module 1: Python 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: Python Programming

1. Python and IDE Installation

- Installing Python.
- Installing Python Editors - PyCharm, IDLE.
- Project Explorer, output and error windows.

2. Python programming

- Setting up user interaction and collecting inputs.
- Running Python programs.
- Calculations and output display.
- Arithmetic operators.
- Using the Math library functions.
- Syntax, Comments, User Input, Print results, and control Program Flow.
- Variables: Float, Integer, and String.
- String Variables: Find, Replace, Formatting and Slicing operations.
- Datatypes and Typecasting.

3. List, Tuples, and Loops

- Lists, Tuples, Dictionaries and Sets.
- List Operations - Slicing and Data Extraction.
- String Operations - Slicing and Manipulations.
- Conditionals: If- Elif and If-Else, Nested If.
- Chaining Comparison Operators.
- Loops: For loop, nested For loops.

4. Functions and Modules

- Defining Functions and Arguments.
- Functions: Arguments, Return Statements and values.
- Functions: Multiple Return Values.
- Function Help and DocStrings.
- Modules and the Python standard library.
- Importing from modules.
- Creating Aliases.

5. Exception Handling

- Errors - syntax, logical and exceptions.
- Exception handling.
- Try Catch Except.
- Debugging Python Functions.
- Adding breakpoints and inspecting values.
- Determine source of error.
- Troubleshooting and fixing errors in the code.

6. OS Functions

- Installing 3rd party packages using pip.
- Performing File, Folder, Path and operations.
- Manipulating file paths and extensions.
- Handling Files, File Filters.
- Text files - read, append and write with practical applications.
- Storing and retrieving data.
- Folders and Folder operations.

7. Tkinter GUI Programming

- Dialogs and mainloop.
- Setting dialog box properties, title, icon, size and location.
- Adding widgets and adjusting their properties and placement.
- Tkinter Datatypes - Double, Integer, and Strings.
- Data Type Conversion - TkInter variables and python variables.
- Labels - static and dynamic.
- Entry Textboxes - storing user input from textboxes into variables.
- Setting default values and last used values in text boxes.
- Button widget - formatting and calling functions.
- Check boxes and radio buttons.

8. Advanced GUI Programming

- Listboxes - single selection and multiple selections.
- Listboxes - adding items static and dynamic.
- Listbox display total count and selection count.
- Listbox - add items from textbox.
- Listbox - remove items.
- Spinner widget - setting range and layout.
- Scale widget - setting range and layout.
- Images - displaying images in a dialog box.

- Message boxes - information, query and warning.
 - Configuring single line and multiline messages.
 - Button configurations and icons.
 - Checking message box responses against button configurations.
-
- File selection dialog.
 - Single and multiple files.
 - Adding file filters.
 - Folder selection dialog.
 - Selecting all files from folder dialog.
 - Adding file filters for folder dialog.
 - Opening files in associated application.
-
- Handling multiple dialogs.

Module 2: CAD Automation

9. Getting Started

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

10. 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

11. File Handling

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

12. Managing Sheets in Drawings

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

13. Drawing Views

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

14. Handling Text in Drawings

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

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 and Cost Estimation

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

Subscribe:

[CADVertex - Newsletter](#)

- ✓ CAD API
- ✓ BIM API
- ✓ Python Programming Tips
- ✓ Dynamo Programming Tips
- ✓ Grasshopper Tips
- ✓ CSharp Programming Tips
- ✓ VB.Net Programming Tips
- ✓ ML and AI Programming Tips



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
- ❖ CATIA Automation with Python and Machine Learning
- ❖ NX Automation and Machine Learning with Python
- ❖ Solid Edge Automation with Python + Machine Learning
- ❖ SolidWorks Automation with Python + Machine Learning
- ❖ Inventor Automation with Python + Machine Learning
- ❖ Fast track course in Python with Machine Learning for VB.Net experts
- ❖ Fast track course in Python with Machine Learning for CSharp experts

CADVertex Software

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

www.CADVertex.com
info@cadvertex.com

WhatsApp/Telegram/Call: +91 9890611694



[CAD-BIM Automation Group](#)
WhatsApp



[CAD-BIM Automation Group](#)
Telegram



Follow

[CADVertex on LinkedIn](#)



Follow

[CADVertex on Facebook](#)



Follow

[CADVertex on Instagram](#)

Phone & Chat

+ 91 9890611694

eMail

info@CADVertex.com

Website

www.CADVertex.com