

# DevTV: Introduction to AutoCAD Plant 3D API

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## Meet the presenter

- Augusto is member of Autodesk DevTech team since 2008 based at São Paulo office.
- Working with .NET and many Autodesk APIs, including AutoCAD, Plant3D, Revit and Civil 3D.
- Delivering API trainings, specially in Latin America



# Requirements

- Microsoft Visual Studio
  - Free Express version available for learning
  - <http://www.visualstudio.com/downloads/download-visual-studio-vs>
- .NET programming skills
  - C# is preferable
- AutoCAD Plant 3D installed

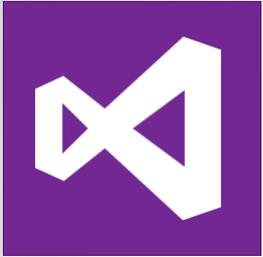
# Background information

- About the product:
  - Based on plain AutoCAD
  - AutoCAD Plant 3D includes AutoCAD P&ID
- About the API (Application Programming Interface)
  - Uses .NET features and programming languages
  - Based and includes plain AutoCAD APIs
- About the SDK (Software Development Kit)
  - Needs [AutoCAD SDK](#) and [P&ID/Plant 3D SDK](#)

# Getting Started

- Create a .NET C# project with Visual Studio
  - Make sure the .NET version is 4.0 for Plant3D 2014
- Add plain AutoCAD references
  - Platform independent
- Add Plant 3D references
  - Platform specific, one for 32 bit and other 64 bit

# How does a plugin for AutoCAD Plant 3D works?

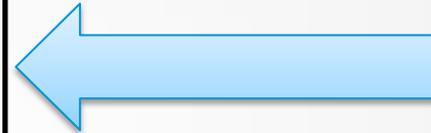


.NET project

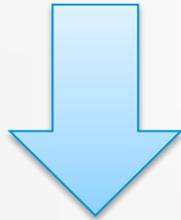
```
1 Imports Autodesk.AutoCAD.Runtime
2 Imports Autodesk.AutoCAD.ApplicationServices
3 Imports Autodesk.AutoCAD.Interop
4
5 Public Class Commands
6     Implements IExtensionApplication
7
8     Private WithEvents docs As DocumentCollection
9     Private WithEvents ThisDrawing As AcadDocument
10
11     Public Sub Initialize() Implements IExtensionApplication.Initialize
12         docs = Application.DocumentManager
13         ThisDrawing = docs.MdiActiveDocument.AcadDocument
14     End Sub
15
16     Public Sub
17         docs
18         This
19     End Sub
20
21     Private
22         ThisDrawing = e.Document.AcadDocument
23     End Sub
24
25     Private Sub ThisDrawing_BeginDocClose(ByRef Cancel As Boolean) Handles ThisDrawing.Begin
26         ThisDrawing = Nothing
27     End Sub
28
29     Private Sub ThisDrawing_EndSave(ByVal FileName As String) Handles ThisDrawing.EndSave
30         MsgBox("EndSave called")
31     End Sub
32 End Class
33
```

Code in C#

Reference to SDK DLLs.  
Use it from ObjectARX  
INC folder



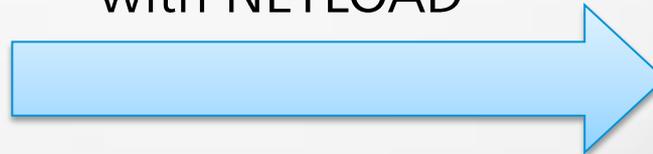
Compile



Assembly  
(.dll)



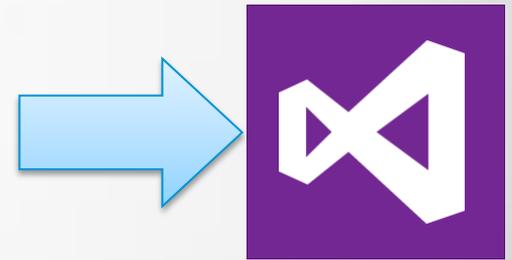
Load inside  
AutoCAD Plant 3D  
with NETLOAD



# Creating a first command

1. Add the required namespaces
2. Create a .NET method
3. Add the *[CommandMethod]* attribute
4. Start typing your custom code
5. Compile the code (generate the .DLL)
6. NETLOAD the DLL in AutoCAD Plant 3D

# Hands on Demonstration



# More information

- Developer Center
  - <http://www.autodesk.com/developer>
- Blogs
  - AutoCAD:
    - <http://through-the-interface.typepad.com/>
    - <http://adndevblog.typepad.com/autocad/>
  - Plant 3D/P&ID
    - <http://adndevblog.typepad.com/autocad/plant3d/>

**Thank you!**



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