

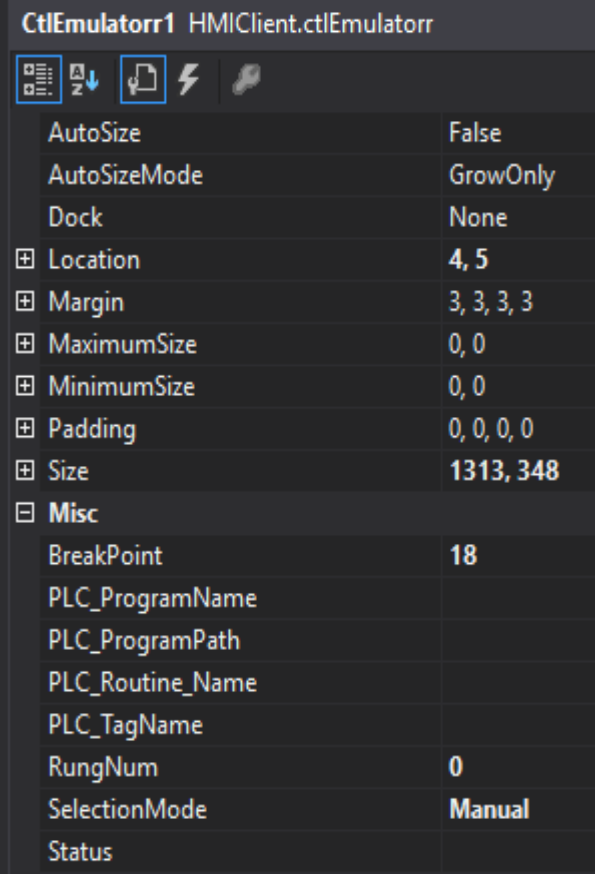
Parijat PLC Logic Viewer – NGS-150

Parijat PLC Logic Viewer or NGS-150 is a .NET control or class for viewing PLC ladder logic from within any .NET class container application. It uses the XML file of a PLC program & some related data. This is designed to help with troubleshooting of PLC programs from within an HMI, saving the cost of ladder editor software licensing. It also makes life of a user very comfortable as from the visual entity selected in HMI, you can jump to the associated PLC logic rung.

Pre Requisites: Refer to Microsoft Visual Studio instructions on how to use a 3rd party .NET class. For use with non-Microsoft HMI/SCADA system, refer to the vendor’s user manual. Ensure that the HMI/SCADA supports use of external .NET classes.

The example below assumes the use of PLC Logic Viewer .NET class from a MS Visual Studio project/application.

Properties:



CtlEmulatorr1 HMIClient.ctlEmulatorr	
AutoSize	False
AutoSizeMode	GrowOnly
Dock	None
Location	4, 5
Margin	3, 3, 3, 3
MaximumSize	0, 0
MinimumSize	0, 0
Padding	0, 0, 0, 0
Size	1313, 348
Misc	
BreakPoint	18
PLC_ProgramName	
PLC_ProgramPath	
PLC_Routine_Name	
PLC_TagName	
RungNum	0
SelectionMode	Manual
Status	

1. Break Point – To break your visually displayed rung in more than one line.
2. PLC_ProgramName – Name of PLC program.
3. PLC_ProgramPath – Physical path of exported PLC Program in server. (Need to be exported in .xml format).
4. PLC_Routine_Name – Program Routine from where to show the rung of logic.
5. PLC_TagName – to use for search to view.
6. RungNum – Rung number of PLC Program Routine to view.

7. Selection Mode – There are two modes available for selection of rung Auto and Manual.
- Auto Mode – This mode will display rungs from PLC logic automatically based on selected properties from property 1 through 3 and 5.
 - Manual Mode – for manual mode Specify above properties 1 to 4 and 6.

Methods:

GenerateNextRung [void] – Generate Next rung.

GeneratePrevRung [void] – Generate Previous rung.

GotoNextRung [Boolean] - Display Next Rung.

GotoPrevRung [Boolean] – Display Previous Rung.

GetTagArray [String()] – List of PLC Tag name used in this rung.

GetTagPointArray[Integer()] – List of Point number of Tag [use with Parijat HMIClient].

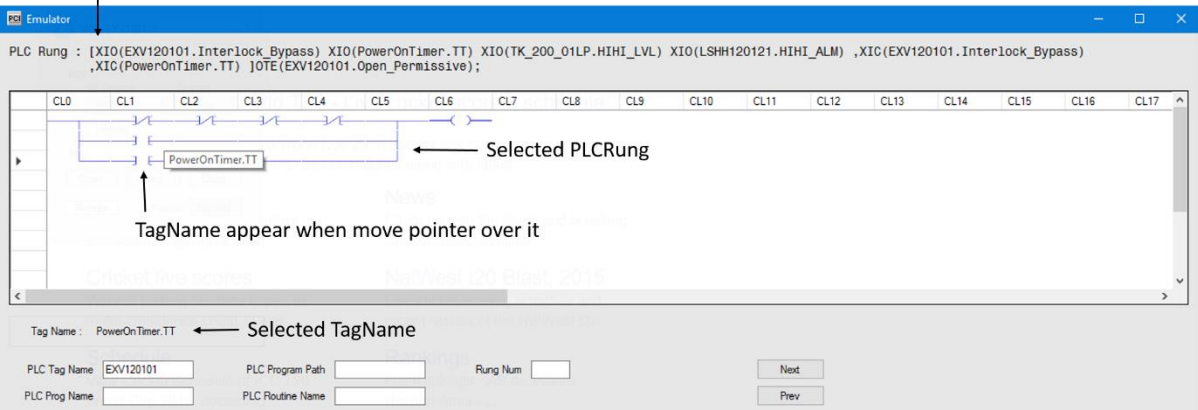
GetTagPointer[Integer] – Current Tag Array Pointer.

Events:

Result Code: 0 : Success
 1 : Database Error
 10 : File not found at file location.
 11 : PLC Routine not found in file.
 12 : No any PLC Rung with given TagName.
 13 : File Read Exception.
 20 : PLC Tag Read Exception
 21 : PLC Tag Array overloaded.
 30 : Exception – Rung Draw failure

How to Add Control:

Selected PLC Rung in Text format



Tag Name appear when move pointer over it

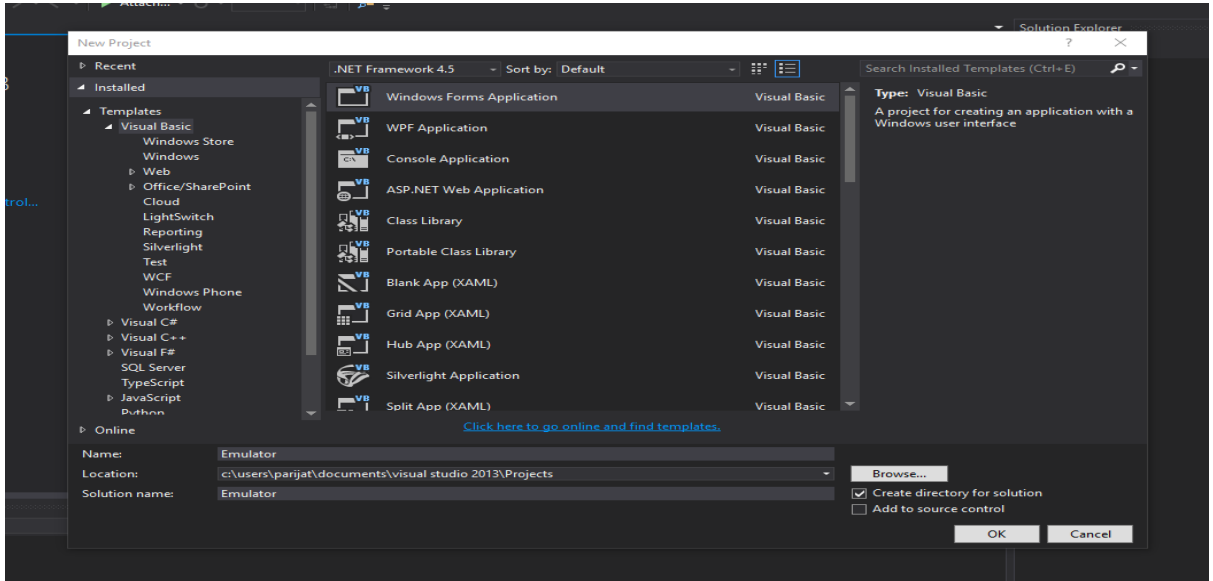
Selected TagName

Tag Name : PowerOnTimer.TT

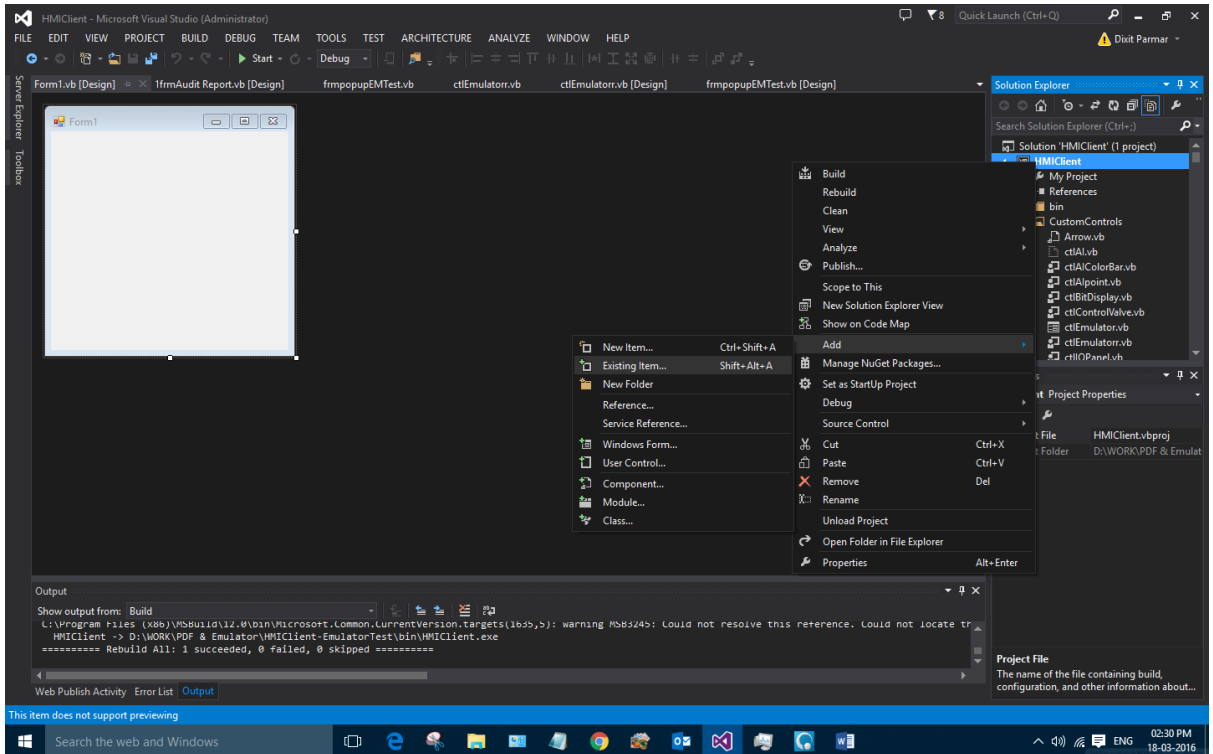
PLC Tag Name: EXV120101 PLC Program Path: Rung Num: Next

PLC Prog Name: PLC Routine Name: Prev

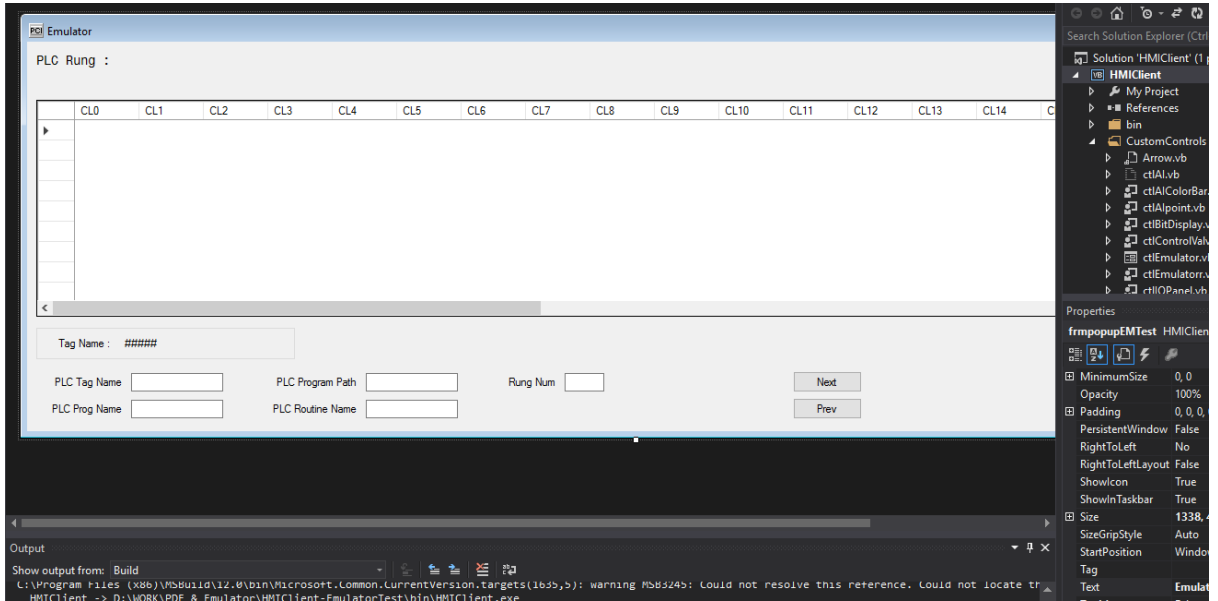
1. Create new windows form application project on visual studio.



2. Add this control in project.



3. Add control to windows form screen and also add values to control properties.



4. Set Emulator properties and call method to generate rung.

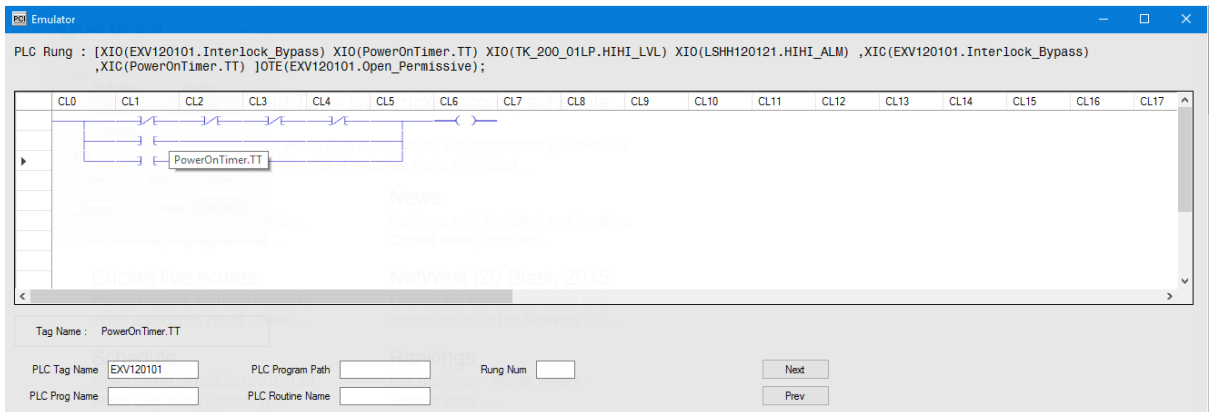
- In auto mode "PLC_TagName", "PLC_ProgramPath", "PLC_ProgramName" property required to generate rung.
- In manual mode "PLC_Routine_Name", "RungNum", "PLC_ProgramPath", "PLC_ProgramName" property required to generate rung.

```

CtlEmulatorr1.PLC_TagName = "EXV120101"
CtlEmulatorr1.PLC_ProgramName = "PLCA"
CtlEmulatorr1.PLC_ProgramPath = "C:/Example/#####"
CtlEmulatorr1.RungNum = 9
CtlEmulatorr1.PLC_Routine_Name = "Valve"
CtlEmulatorr1.SelectionMode = ctlEmulatorr.Mode.Auto
CtlEmulatorr1.GenerateNext()

```

5. Run Mode.



6. To dynamically update Rung get all tag and update it's value by updateRung.

```
Dim TagArray() As String
TagArray = CtlEmulatorr1.GetTagArray

CtlEmulatorr1.UpdateRung(TagName, strGridValue, bStatus)
```

Note:

This control currently support Allen Bradley ladder logic PLC program file in XML format. In future, PCI may add support of other PLC's file formats also. Please contact PCI for any issues.

7/20/16