

LABVIEW INTRODUCTION

WHAT IS LABVIEW?

- ✖ LabVIEW is a graphically oriented programming language designed initially for acquiring data from devices and instruments.
- ✖ We will be using LabVIEW 2011 and the NI myDAQ data acquisition card in this class.

PARTS OF LABVIEW



NI-DAQmx

DAQMX

- ✖ NI-DAQmx is a set of hardware drivers to talk to external devices and boards.
- ✖ MX drivers: Newer interface
- ✖ Legacy drivers: Older cards and programs
- ✖ If using LabVIEW 2010 and myDAQ you must have DAQmx 9.1.6 or higher!

MEASUREMENT AND AUTOMATION EXPLORER

- ✖ M&A Explorer is the front end for the drivers and interfaces
- ✖ Allows users to create virtual channels and tasks
- ✖ Allows for custom configuration and calibrations



LABVIEW



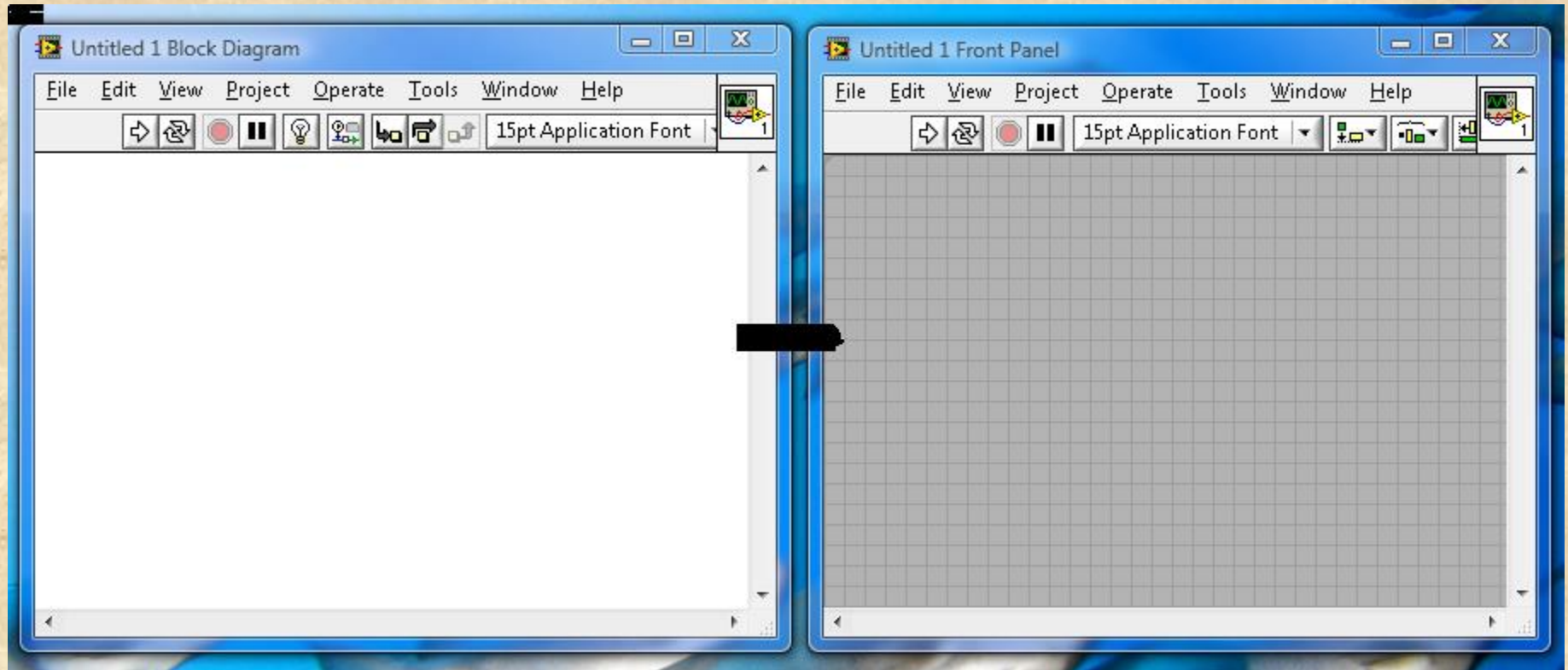
Search



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- ✗ LabVIEW is a graphically oriented programming language.
- ✗ Uses a front panel and block diagram paradigm to provide a clean user panel with powerful blocks of programming that are invisible to the end user.

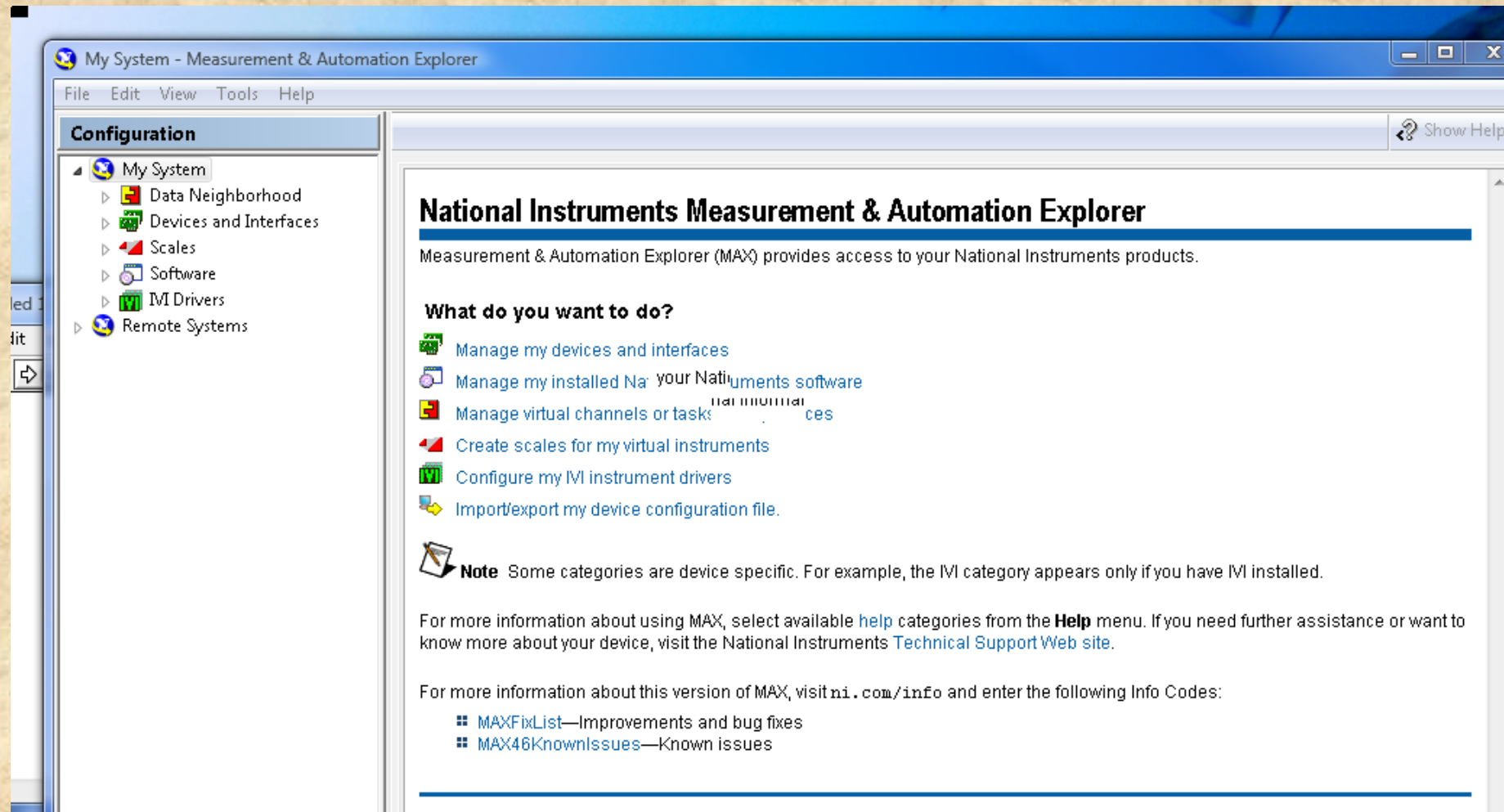
BLOCK DIAGRAM AND FRONT PANEL



INSTALL LABVIEW 2011 FIRST

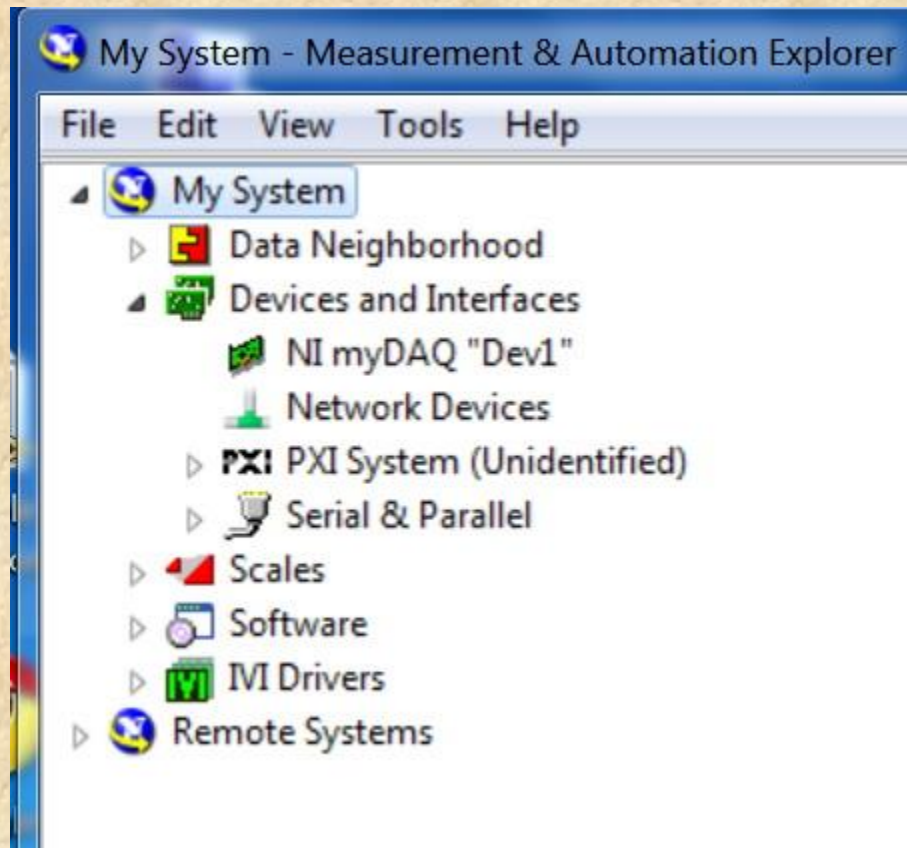
- ✖ Install LabVIEW from the disk
- ✖ Follow all the instructions in order
 - + Works with windows XP, Vista and Win7
- ✖ Plug in your daq board and let it install the USB drivers the first time.
- ✖ The CLC's (room 200/241 and 345) have the software installed and ready to run.

OPEN MEASUREMENT AND AUTOMATION EXPLORER



HARDWARE INSTALL

- ✗ Plug in daq card
- ✗ Device should show up in the device list



READY TO WORK

✖ Front panel Controls Pallet

- + These are user interface items
- + Display or input data in various ways

✖ Tools Pallet

- + These are items that determine what the mouse can do.

✖ Functions Pallet

- + These are items that build the program

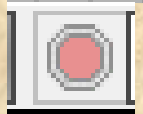
BASIC BUTTONS



✗ Run once

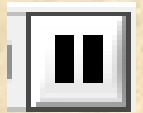


✗ Run continuously



✗ Abort

+ Terminates the program and leaves any I/O set the way it was



✗ Pause



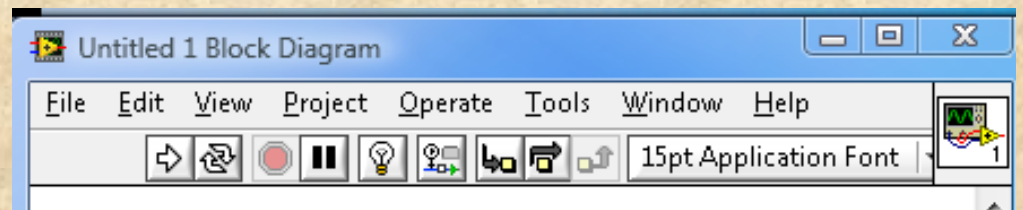
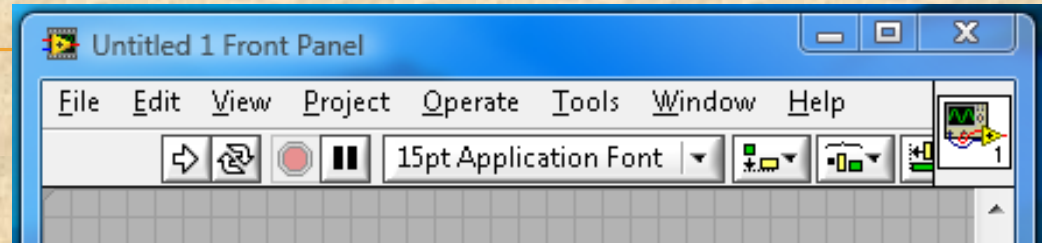
✗ Highlight Execution



✗ Single step into



✗ Step over



DEMONSTRATE SIMPLE PROGRAM

- ✕ Build a simple program that takes two numbers, multiplies them and then displays the result.

POINTER TYPES

- ✗ There are different pointer types.
- ✗ Demo of auto select and individual pointers

SNIPPET!

- ✖ A snippet is a .png file that contains both an image and the program behind it.
- ✖ Save the snippet to your computer
- ✖ Drag the snippet to the block diagram
- ✖ Demo it!