

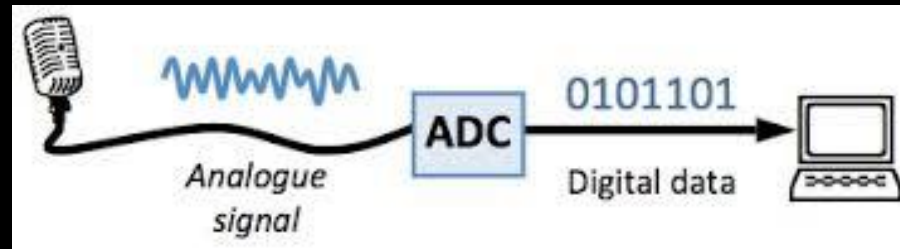
WEEK 6: LABVIEW FOR VIRTUAL INSTRUMENTATION

Goals for this session:

- Use Labview software to build a Virtual Instrument (VI)
 - Program and debug software interface
 - Save VI for use with testing system and ECG acquisition
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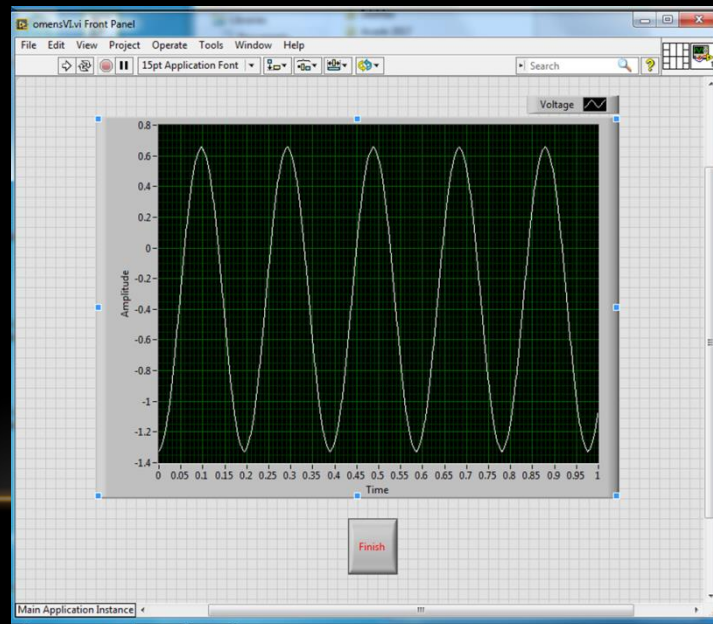
LABVIEW

- National Instruments product: See <http://www.ni.com/labview/>
- Graphical User Interface software for research and industrial applications
- BE87: Create a simple data acquisition program to display and then save a time-varying signal
- Computer interface: analog/digital converter (on a plug-in card) connects to break-out box at lab station
- Similar to sound recording with a computer



MAIN COMPONENTS OF THE VIRTUAL INSTRUMENT

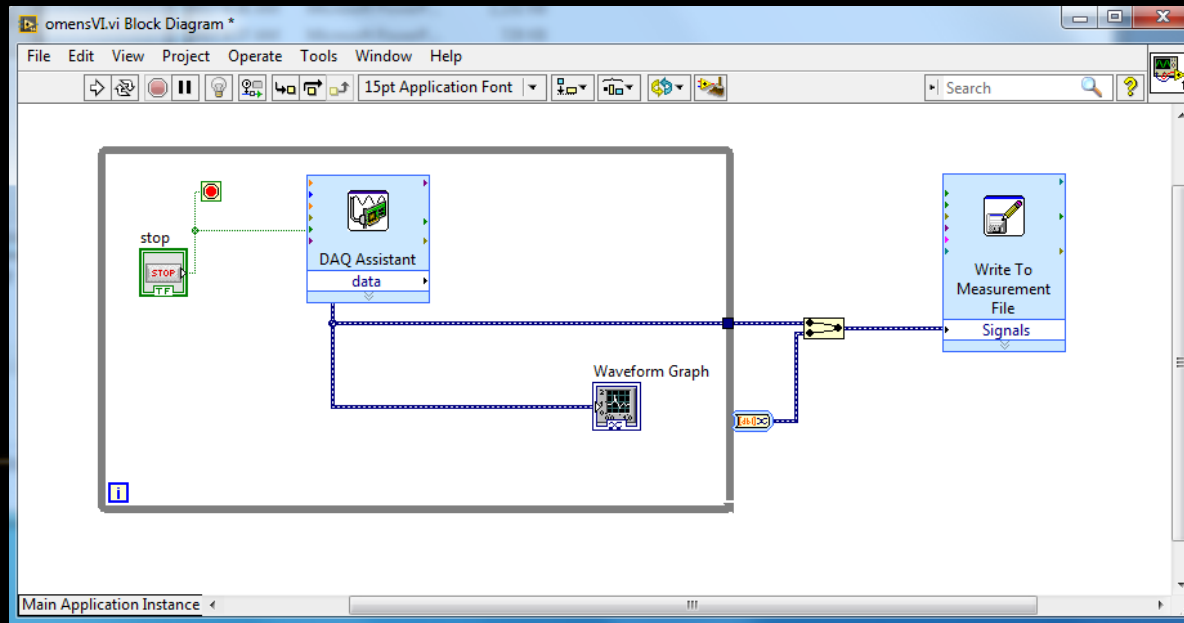
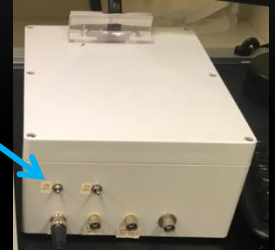
- Data acquisition module: talks to analog/digital converter
- User-control of various acquisition parameters such as sample rate and time
- Graphical display on VI
- Convert acquired data into proper digital format for file storage
- Loop until user stops routine



CREATING THE VIRTUAL INSTRUMENT

- Follow instructions for using the graphical user interface (see BE87_VI.pdf link from Web site)
- If time permits, add cool extra “bells and whistles”!
- Save your VI as a LabView file to use next week.
- You can test your vi by running it, and then turn on/off the toggle switch above A/D input 0 on the tan break-out box on the table top. You will see slight changes in the “zero” signal display.
- Copy file (your_file_name.vi) onto flash drive, or upload via e-mail, drop box, etc. Files left on the computers in room 108 can be deleted!

Turn on/off to test



WEEK 6 TOPICS FOR FINAL REPORT

- Short description of the use of software to build virtual instruments
 - A/D conversion as an acquisition tool for external signals
 - Components of the VI for data display and acquisition
 - Screen shot of your Virtual Instrument design from Labview
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