



Hands-On Introduction to LabVIEW for Scientists and Engineers

By John Essick

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Hands-On Introduction to LabVIEW for Scientists and Engineers, Third Edition, explores practical programming solutions for carrying out interesting and relevant projects. Readers--who are assumed to have no prior computer programming or LabVIEW background--will begin writing meaningful programs in the first few pages.

Improvements to the Third Edition: This new edition includes the following improvements:

- * All chapters are fully updated to the latest version of LabVIEW. DAQ hardware now commonly used in instructional laboratories and self-learning is highlighted.
- * For easy reference, seven chapters begin with a "Basics" section that explains the fundamental operation of the LabVIEW function covered in that chapter [Chapters 2, 3, 4, 7, 8, 9, 12].
- * A new first chapter offers focused introduction to the LabVIEW programming environment. Readers construct a simple program to detect whether a given integer is even or odd [Chapter 1].
- * Coverage of LabVIEW's text-based functions is given for both the MathScript Node and Formula Node [Chapter 4 and Appendix A].
- * Shift register usage is illustrated through a signal-averaging program (replacing the numerical integration and differentiation programs used in previous editions) [Chapter 7].
- * State machine program architecture is now taught in the case structure chapter (replacing the numerical integration program used in previous editions). Readers construct a state-machine guessing game and a digital oscilloscope with runtime control [Chapter 8].

- * A nonlinear curve fitting example is included in the text [Chapter 10].
- * The fast Fourier transform chapter opens with an Express VI-based "Quick Example" section, which gives a concise introduction to the digital spectral analysis topics of leakage and windowing. High-level mathematical coverage of these topics is moved to an appendix [Chapter 11 and Appendix B].
- * The proportional-integral-derivative temperature control project is now given in an appendix [Appendix C].
- * About 20 new end-of-the-chapter problems appear throughout the book.

More information about this book can be found here:

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Editorial Review

Review

"The hands-on method really allows students to learn the material in sufficient depth. I know of no other book that comes even close."--Mark Beck, *Whitman College*

"This book is exactly what I need to fill gaps in student understanding of LabVIEW."--Eric Ayars, *California State University, Chico*

"This text is the most comprehensive and readable book available for LabVIEW."--Ladimer S. Nagurney, *University of Hartford*

From the Inside Flap

TABLE OF CONTENTS

Each chapter ends with "Do It Yourself" and "Problems" sections.

Preface

1. LABVIEW PROGRAM DEVELOPMENT

- 1.1 LabVIEW Programming Environment
- 1.2 Blank VI
- 1.3 Front-Panel Editing
- 1.4 Block-Diagram Editing
- 1.5 Program Execution
- 1.6 Pop-Up Menu and Data-Type Representation
- 1.7 Program Storage
- 1.8 Quick Drop

2. THE WHILE LOOP AND WAVEFORM CHART

- 2.1 Programming Structures and Graphing Modes
- 2.2 While Loop Basics
- 2.3 Sine-Wave Plot Using a While Loop and Waveform Chart
- 2.4 LabVIEW Help Window
- 2.5 Front Panel Editing
- 2.6 Waveform Chart Pop-Up Menu
- 2.7 Finishing the Program
- 2.8 Program Execution
- 2.9 Program Improvements
- 2.10 Data Types and Automatic Creation Feature

3. THE FOR LOOP AND WAVEFORM GRAPH

- 3.1 For Loop Basics

- 3.2 Sine-Wave Plot Using a For Loop and Waveform Graph
- 3.3 Waveform Graph
- 3.4 Owned and Free Labels
- 3.5 Creation of Sine Wave Using a For Loop
- 3.6 Cloning Block-Diagram Icons
- 3.7 Auto-Indexing Feature
- 3.8 Running the VI
- 3.9 X-Axis Calibration of the Waveform Graph
- 3.10 Sine-Wave Plot Using a While Loop and Waveform Graph
- 3.11 Front-Panel Array Indicator
- 3.12 Debugging With the Probe-Watch Window and Error List

4. THE MATHSCRIPT NODE AND XY GRAPH

- 4.1 Mathscript Node Basics
- 4.2 Quick Mathscript Node Example: Sine-Wave Plot
- 4.3 Waveform Simulator Using a Mathscript Node and XY Graph
- 4.4 Creating an XY Cluster
- 4.5 Running the VI
- 4.6 LabVIEW Mathscript Window
- 4.7 Adding Shape Options Using an Enumerated Type Control
- 4.8 Finishing the Block Diagram
- 4.9 Running the VI
- 4.10 Control and Indicator Clusters
- 4.11 Creating an Icon Using the Icon Editor
- 4.12 Icon Design
- 4.13 Connector Assignment

5. DATA ACQUISITION USING DAQ ASSISTANT

- 5.1 Data Acquisition VIs
- 5.2 Data Acquisition Hardware
- 5.3 Analog Input Modes
- 5.4 Range and Resolution
- 5.5 Sampling Frequency and the Aliasing Effect
- 5.6 Measurement & Automation Explorer (MAX)
- 5.7 Simple Analog Input Operation on a DC Voltage
- 5.8 Digital Oscilloscope
- 5.9 Analog Output
- 5.10 DC Voltage Source
- 5.11 Software-Timed Sine-Wave Generator
- 5.12 Hardware-Timed Waveform Generator
- 5.13 Placing a Custom-Made VI on a Block Diagram
- 5.14 Completing and Executing Waveform Generator (Express)
- 5.15 Modified Waveform Generator

6. DATA FILES AND CHARACTER STRINGS

- 6.1 ASCII Text and Binary Data Files
- 6.2 Storing Data in Spreadsheet-Formatted File
- 6.3 Storing a One-Dimensional Data Array
- 6.4 Transpose Option
- 6.5 Storing a Two-Dimensional Data Array
- 6.6 Controlling the Format of Stored Data
- 6.7 The Path Constant and Platform Portability

- 6.8 Fundamental File I/O VIs
- 6.9 Adding Text Labels to a Spreadsheet File
- 6.10 Backslash Codes

7. SHIFT REGISTERS

- 7.1 Shift Register Basics
- 7.2 Quick Shift Register Example: Integer Sum
- 7.3 Noise and Signal Averaging
- 7.4 Noisy Sine VI
- 7.5 Moving Average of Four Traces
- 7.6 Modularity and Automatic SubVI Creation
- 7.7 Moving Average of Arbitrary Number of Traces

8. THE CASE STRUCTURE

- 8.1 Case Structure Basics
- 8.2 Quick Case Structure Example: Runtime Options Using Property Nodes
- 8.3 State Machine Architecture: Guessing Game
- 8.4 State Machine Architecture: Expressed VI-Based Digital Oscilloscope

9. DATA DEPENDENCY AND THE SEQUENCE STRUCTURE

- 9.1 Data Dependency and Sequences Structure Basics
- 9.2 Event Timer Using a Sequence Structure
- 9.3 Event Timer Using Data Dependency
- 9.4 Highlight Execution

10. ANALYSIS VIs: CURVE FITTING

- 10.1 Thermistor Resistance-Temperature Data File
- 10.2 Temperature Measurement Using Thermistors
- 10.3 The Linear Least-Squares Method
- 10.4 Inputting Data to a VI Using a Front-Panel Array Control
- 10.5 Inputting Data to a VI by Reading from a Disk File
- 10.6 Slicing Up a Multi-Dimensional Array
- 10.7 Running the VI
- 10.8 Curve Fitting Using the Linear Least-Squares Method
- 10.9 Residual Plot
- 10.10 Curve Fitting Using the Nonlinear Least-Squares Method

11. ANALYSIS VIs: FAST FOURIER TRANSFORM

- 11.1 Quick Fast Fourier Transform Example
- 11.2 The Fourier Transform
- 11.3 Discrete Sampling and the Nyquist Frequency
- 11.4 The Discrete Fourier Transform
- 11.5 The Fast Fourier Transform
- 11.6 Frequency Calculator VI
- 11.7 FFT of Sinusoids
- 11.8 Applying the FFT to Various Sinusoidal Inputs
- 11.9 Magnitude of Complex-Amplitude
- 11.10 Observing Leakage
- 11.11 Windowing
- 11.12 Estimating Frequency and Amplitude
- 11.13 Aliasing

12. DATA ACQUISITION AND GENERATION USING DAQMX VIs

- 12.1 DAQmx VI Basics
- 12.2 Simple Analog Input Operation on a DC Voltage

- 12.3 Digital Oscilloscope
- 12.4 Express VI Automatic Code Generation
- 12.5 Limitations of Express VIs
- 12.6 Improving Digital Oscilloscope Using State Machine Architecture
- 12.7 Analog Output Operations
- 12.8 Waveform Generator

13. CONTROL OF STAND-ALONE INSTRUMENTS

- 13.1 Instrument Control using VISA VIs
- 13.2 The VISA Session
- 13.3 The IEEE 488.2 Standard
- 13.4 Common Commands
- 13.5 Status Reporting
- 13.6 Device-Specific Commands
- 13.7 Specific Hardware Used In This Chapter
- 13.8 Measurement & Automation Explorer(MAX)
- 13.9 Simple VISA-Based Query Operation
- 13.10 Message Termination
- 13.11 Getting and Setting Communication Properties Using a Property Node
- 13.12 Performing a Measurement over the Interface Bus
- 13.13 Synchronization Methods
- 13.14 Measurement VI Based on the Serial Poll Method
- 13.15 Measurement VI Based on the Service Request Method
- 13.16 Creating an Instrument Driver
- 13.17 Using the Instrument Driver to Write an Application Program

APPENDIX A. FORMULA NODE PROGRAMMING FOR CHAPTER 4

- A.1 Formula Node Basics
- A.2 Quick Formula Node Example: Sine-Wave Plot (Section 4.2)
- A.3 Formula Node-Based Waveform Simulator (Sections 4.3-4.4)
- A.4 Formula Node-Based Waveform Simulator (Section 4.8)
- A.5 Formula Node-Based Waveform Simulator (Section 4.10)

APPENDIX B. MATHEMATICS OF LEAKAGE AND WINDOWING

- B.1 Analytic Description of Leakage
- B.2 Description of Leakage Using the Convolution Theorem

APPENDIX C. PID TEMPERATURE CONTROL PROJECT

- C.1 Project Description
- C.2 Voltage-Controlled Bidirectional Current Driver for Thermoelectric Device
- C.3 PID Temperature Control Algorithm
- C.4 PID Temperature Control System
- C.5 Construction of Temperature Control System

Index

About the Author

John Essick is Professor of Physics at Reed College. Since 1993, he has taught computer-based experimentation using LabVIEW as part of Reed's junior-level Advanced Laboratory and used LabVIEW to carry out many research projects.

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