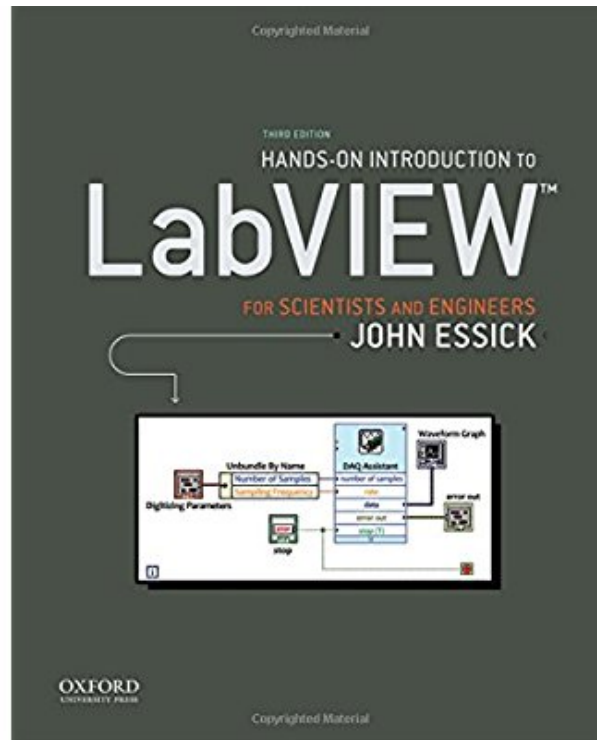


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## Synopsis :

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 Read more From the Inside Flap **TABLE OF CONTENTS** Each chapter ends with 'Do It Yourself' and 'Problems' sections. Preface1. 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 Drop2. 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 Feature3. 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 List4. 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 Assignment5. 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 Generator6. 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 Codes7. 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 Traces8. 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

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