

Managing Software Engineering in LabVIEW

Overview

Managing Software Engineering in LabVIEW builds upon the software engineering process that was discussed in the LabVIEW Core 3 course. This course expands upon this knowledge by focusing on the LabVIEW tools and industry practices that aid in the definition, management, design, development, validation, and deployment of a quality solution. The course teaches common practices for managing large, team oriented, application development projects from specification to deployment.

Duration

Two (2) Days

Audience

- LabVIEW developers who are concerned about creating quality applications that must meet deadlines, satisfy requirements, and satisfy regulatory standards
- Advanced LabVIEW programmers who are managing the development of large applications
- Architects managing a team of developers
- LabVIEW users pursuing the Certified LabVIEW Architect certification

Prerequisites

- LabVIEW Core 3 or equivalent LabVIEW experience

NI Products Used During the Course

- NI LabVIEW Professional Development System for Windows
- NI Requirements Gateway
- NI LabVIEW VI Analyzer Toolkit
- NI LabVIEW Unit Test Framework Toolkit
- NI LabVIEW Application Builder

After attending this course, you will be able to:

- Manage LabVIEW projects that require timely delivery of a quality solution that satisfy application requirements and regulatory standards
- Manage development of a LabVIEW project from definition to deployment
- Adapt the software engineering process, as presented in this course, to your LabVIEW development projects

Registration

Register online at ni.com/training or call (800)433-3488 Fax: (512)683-9300 info@ni.com

Outside North America, contact your local NI Office. Worldwide Contact Info: ni.com/global

Part Number

910792-xx
-01 NI Corporate or Branch
-11 Regional
-21 Onsite (at your facility)

- Select and leverage appropriate tools and techniques for managing the development of your LabVIEW application
- Conduct an effective LabVIEW code review
- Develop a strategy for testing and validating your application
- Select an appropriate method for deploying your applications to other developers and end users

Suggested Next Step

- Advanced Architectures in LabVIEW
- LabVIEW Object-Oriented Programming System Design
- LabVIEW Performance Guide
- Certified LabVIEW Architect Exam

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Introduction

This lesson introduces the software development process and defines the role of a LabVIEW Architect. You also learn about tools to monitor and control the evolution of a software product. Topics include:

- Software engineering process
- Roles of a LabVIEW architect
- Configuration management

Requirements Gathering

This lesson describes how to plan a LabVIEW project. In this lesson you learn how to identify appropriate tools for managing a project and tracking its progress. You also learn how to estimate the time required to complete a project. This lesson culminates in the creation of a project plan for development of a LabVIEW project.

Topics include:

- Project management
- Gathering and managing requirements
- Time estimation
- Style and coding standards
- Developing a project plan

Design

This lesson describes tools and practices you can use to aid in designing a LabVIEW project. You learn how to develop a graphical model of the application, how to develop a prototype for the user interface, and how to develop a design document that will be used throughout project development.

Topics include:

- Creating a software model
- Designing a software architecture
- Creating a prototype
- Developing a design document

Development

In this lesson, you use tools in LabVIEW to improve the development of LabVIEW projects. You learn about existing tools for automating development tasks as well as how to develop your own. You also learn how to prepare for and conduct an effective code review.

Topics include:

- Automating development tasks
- Code reviews

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Validation

In this lesson, you learn the importance of testing code for performance and functionality. You examine tools you can use to analyze and validate your code.

Topics include:

- Static code analysis
- Dynamic code analysis
- Functional validation of code

Deployment

In this lesson, you learn how to develop different types of build specifications depending on your deployment requirements. You also learn about the challenges that can arise when deploying your application for different types of targets and operating systems.

Topics include:

- Methods of deployment
- Advanced application options
- Advanced installer options
- Shared library development
- Source code distribution
- Additional build specifications
- Comparison of deployment processes