

# How Can I Prepare for the Certified LabVIEW Developer (CLD) Exam?

## Overview

This document offers resources to assist a candidate in preparing for a CLD exam. This document is by no means complete. Feedback and suggestions are solicited.

## Exam Goal

The CLD exam validates the knowledge and skills to design, develop and deploy a scalable, readable, and maintainable LabVIEW application using advanced software principles, architectures, techniques and the LabVIEW development guidelines. Refer to the Development Guidelines book of the LabVIEW Help for more information about the LabVIEW development guidelines.

## Exam Topics

Refer to the *CLD Exam preparation guide* in the download section for an overview and details of CLD Exam topics.

## Exam Prerequisite

Valid CLAD certification is required before taking a CLD exam.

## Exam Details

The following details apply to the CLD exam.

- Must be scheduled by contacting [certification@ni.com](mailto:certification@ni.com)
- Proctored by National Instruments staff
- 4-hour application development exam
- The following are provided or allowed during the exam:
  - A PC with LabVIEW. You may use the *LabVIEW Help* and LabVIEW documentation.
  - Application development specification.
  - Screenshot of front panel.
  - Description of the controls and indicators.
  - General requirements.
  - Functional specifications of the application.

Refer to the  
LabVIEW Help

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for more information.

## Exam Grading

Applications are graded on the following three criteria:

- Functionality
- Programming style
- Documentation

Each of the criteria have approximately equal weight.

Passing grade is 75% or higher.

## Exam Grading Details

The following points are taken into consideration for each of the grading criteria:

### Functionality

- Is the **Run** arrow broken?
- Does the VI properly perform the requirements listed in the specifications?
- Is the logic correct for Boolean inputs and outputs?
- Does the VI respond to user inputs within the stated time limit (100 ms)?
- Does the VI / subVIs use 100% CPU time?
- Is file I/O implemented correctly?
- Does the application stop on error?

### Style

- Does the application follow the LabVIEW development guidelines?
- Is the VI:
  - Readable?
  - Constructed for scalability?
  - Easily maintainable?
  - Overly complex?
- Is the VI constructed in a professional manner?
  - Does the VI use LabVIEW frameworks or design patterns?
  - Minimum requirement is to use a state machine
  - Is the VI hierarchical?
  - Repeated code should be in subVIs
  - Are type-defined enumerated controls used to define states?
- Does the VI use unnecessary temporary variables?
- Are appropriate data types, ranges, and format/precision used for front panel controls?
- Is data grouped in appropriate data structures: arrays or clusters?
- Does the VI use deeply nested structures (2 or more)?
- Does the VI use sequence structures for purposes other than initialization or cleanup?
- Does the VI use local and global variables?
  - Local variables can be used to update controls
  - Are global variables protected to avoid race conditions?
- Are Property Nodes (value) used for updating indicators?

- Are front panels and block diagrams well laid out?
  - Are block diagrams cramped into small spaces?
- Are there unnecessary bends in wires?
- Are objects/wires overlapping?
- Are wires running under structures or structure borders?
- Are the error terminals wired on VIs?
- Are references closed appropriately?
- Is the VI optimized for memory and performance?

### **Documentation**

- Is the VI documented through **File»VI Properties**?
- Are the subVIs documented?
- Are wires documented with appropriate labels?
- Is the functionality documented?
  - Block diagram level
  - Main and nested structure level
- Do front panel controls and indicators have descriptive names?
- Do VIs have descriptive icons?
- Are constants documented?
- Do front panel controls have associated tip strips?
- Does the top-level VI have a non-default icon?
  - Do all subVIs have consistent icon design?

## **Training/Tutorials**

The following paid training materials are available to prepare for the CLD exam:

- [National Instruments LabVIEW Intermediate I and II courses](#):
  - Instructor-led
  - Self-paced by using the course manuals

The following resources are available to prepare for the CLD exam:

- [National Instruments CLD preparation course \(online\)](#)
- [National Instruments CLD Preparation Guide](#)

## **Sample Exams**

Work through the CLD sample exams and study the solution VIs to prepare for a CLD exam.

[Certified LabVIEW Developer \(CLD\) Sample Exam - Car Wash](#)

[Certified LabVIEW Developer \(CLD\) Sample Exam - Security System](#)

[Certified LabVIEW Developer \(CLD\) Sample Exam - Traffic Light](#)