



## **Certified LabVIEW Associate Developer Exam**

### **Test Booklet**

**Version #: CLAD - English - 100301-01**

**Test Code: 15114**

**Note: The use of the computer or any reference materials is NOT allowed during the exam.**

#### **Instructions:**

- **Please do not detach the binding staple of any section. If any part of the exam paper is missing or detached when returned to National Instruments, you will be deemed to have failed the exam.**
- Please follow the instructions on the Answer Sheet. If you fill in your Candidate ID incorrectly, **your test will be invalidated.**
- Indicate **ALL** answers on the Answer Sheet. Answers recorded in this test booklet will **NOT** be evaluated.
- Please do not ask the proctor for help. If you believe the intent of a question is not clear, you may note that question, and your reasons for choosing the answer you believe best fits the question.
- This examination may not be taken from the examination area or reproduced in any way. You may not keep any portion of this exam after you have completed it.

#### **Exam Details:**

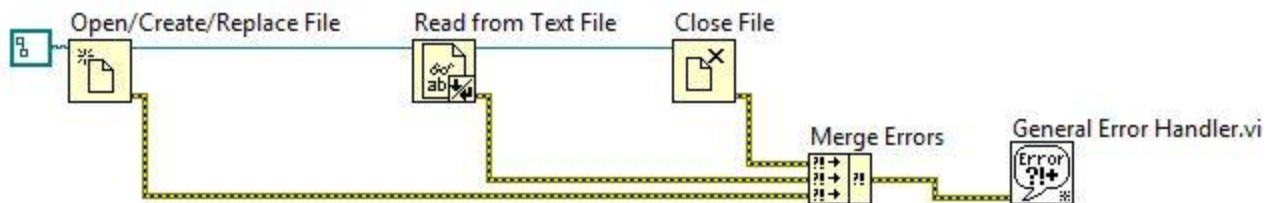
- Time allocated: 1 hour
- Type of exam items: Multiple choice
- Number of exam items: 40 questions
- Passing Grade: 70%

**IMPORTANT: When you have completed this exam, place it in the provided envelope with you answer sheet and SEAL the envelope. Give the sealed envelope to your proctor.**

**Q1:** Which mechanism stores state information in a simple state machine?

- A** Functional global variable
- B** Shift Register
- C** Queue
- D** Notifier

**Q2:** Assuming that automatic error handling is enabled, does LabVIEW display the error to the user at the end of execution?



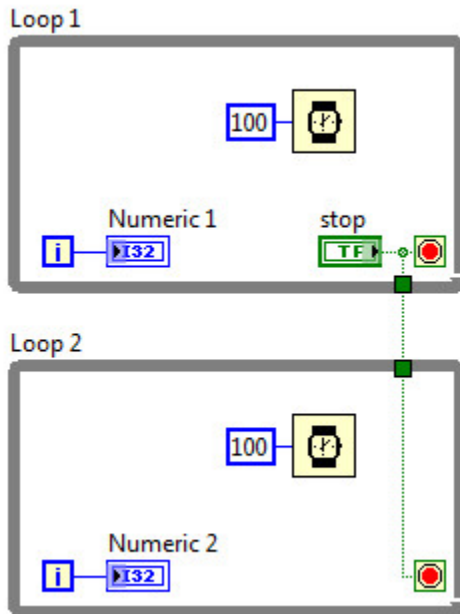
- A** No. LabVIEW does not display any error because closing the file reference clears the error
- B** No. The General Error Handler VI logs the incoming error
- C** Yes. LabVIEW displays an error that occurred at Close file function because the Merge Errors function displays the first incoming error
- D** Yes, but LabVIEW displays the error dialog three times because the Merge Error function merges all three errors into one cluster

**Q3:** What value does the **Result** indicator display after the code executes



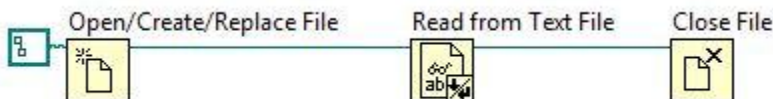
- A** The function returns an error
- B** 1D empty array
- C** 2D empty array
- D** 2D array of 1 row and 1 column with 5 as the element

**Q4:** What is the behavior when the code executes?



- A** Loop 1 and Loop 2 run simultaneously
- B** Loop 1 runs after Loop 2 stops
- C** Loop 2 runs after Loop 1 stops
- D** Loop 1 and Loop 2 are deadlocked

**Q5:** Assuming that automatic error handling is enabled, does LabVIEW display the error to the user at the end of execution?



- A** No. No error is displayed because closing the file reference will clear the error
- B** No. LabVIEW clears the error because automatic error handling is enabled
- C** Yes. LabVIEW displays an error that occurred at Close file
- D** Yes, but LabVIEW interrupts execution to report the error

**Q6:** Which is **NOT** a native debugging feature in LabVIEW?

- A** Stop Values
- B** Highlight Execution
- C** Single Stepping
- D** Breakpoints

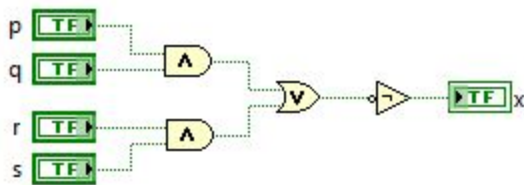
**Q7:** Which user interface event informs you that a user performed the action before LabVIEW processes it?

- A Mouse Down
- B Panel Resize
- C Panel Close?
- D Value Change

**Q8:** In the development of scalable state machine-based applications, what is the best data type to maintain the state?

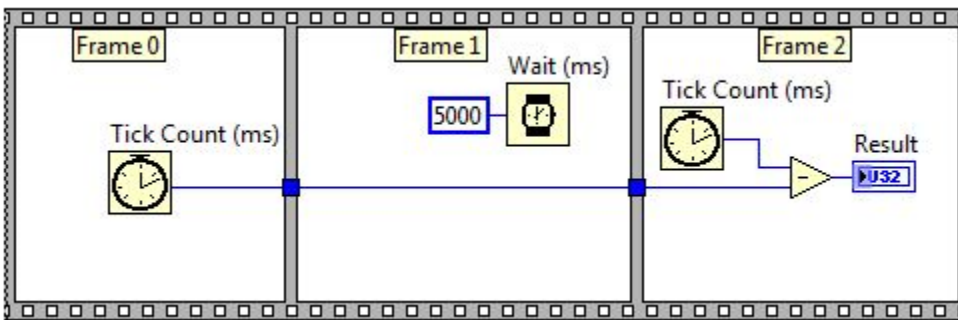
- A Numeric
- B Type-defined enum
- C Array of numerics
- D Cluster of strings

**Q9:** Which combination of inputs displays a Boolean TRUE in the **x** indicator?

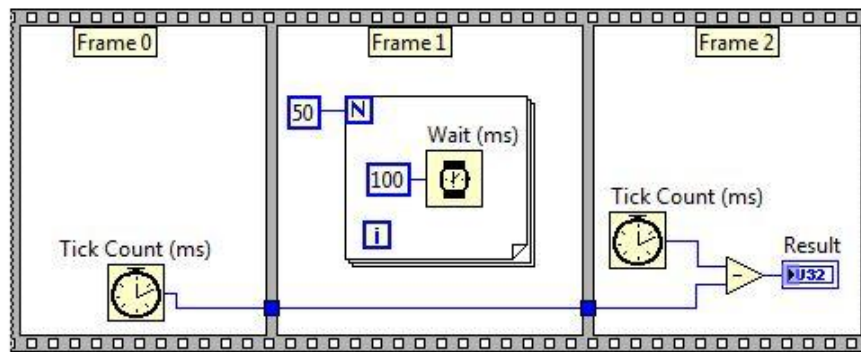


- A p=TRUE, q=TRUE, r=TRUE, s=TRUE
- B p=TRUE, q=TRUE, r=FALSE, s=TRUE
- C p=TRUE, q=FALSE, r=TRUE, s=TRUE
- D p=FALSE, q=TRUE, r=TRUE, s=FALSE

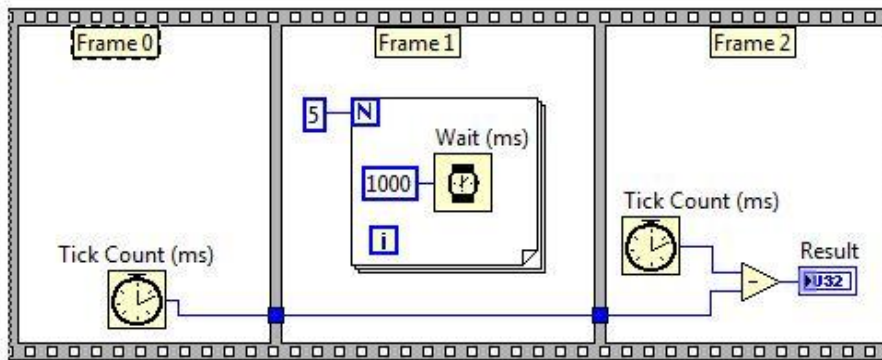
**Q10:** Which code snippet is functionally equivalent to the sequence structure?



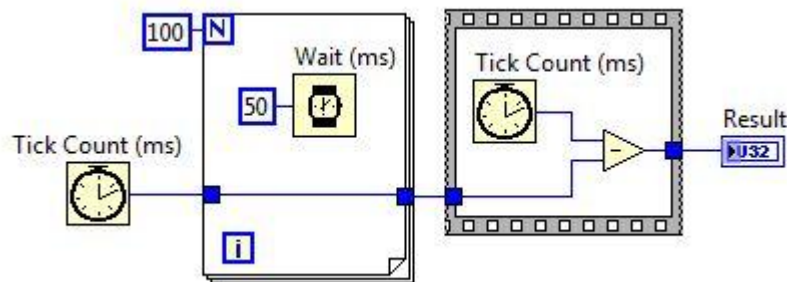
**A**



**B**



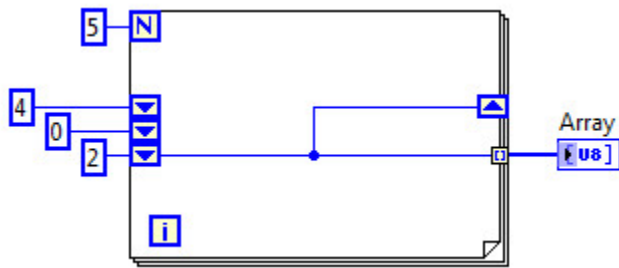
**C**



**D**





All of the above

**Q11:** What does the **Array** indicator display after the code executes?



- A [4 0 2 4 0]
- B [0 2 4 0 2]
- C [2 0 4 2 0]
- D [2 2 2 2 2]

**Q12:** When used in a loop, which timing function provides time to respond to user interface updates?

- A  Tick Count (ms)
- B  Wait (ms)
- C  Get Date/Time In Seconds
- D  Format Date/Time String

**Q13:** Which loop or function auto-indexes a single element of a 2-D array?

- A** Replace Array Subset function
- B** Array Subset function
- C** One While Loop
- D** Two For Loops

**Q14:** Unlike graphs, which display an entire waveform that \_\_\_\_\_ the data already displayed, charts update periodically and \_\_\_\_\_ the data previously displayed.

- A** Maintains a history of; overwrite
- B** Overwrites; maintain a history of
- C** Appends to; overwrite
- D** None of the above

**Q15:** The Master/Slave design pattern uses which data synchronization mechanism?

- A** Notifier
- B** Queue
- C** Semaphore
- D** Rendezvous

**Q16:** Which is an advantage of a global variable over a local variable?

- A** Only the global variable can pass array data, local variables cannot
- B** Global variables follow the dataflow model and therefore cannot cause race conditions
- C** Global variables do not require owned labels to operate
- D** A global variable can pass data between two independent VIs running simultaneously

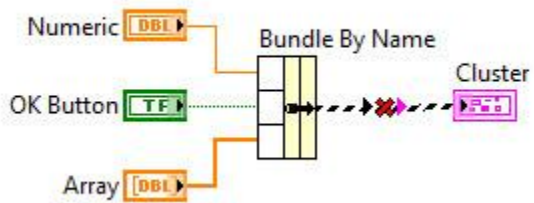
**Q17:** When do you use the Probe tool instead of Breakpoints?

- A** To slowdown the VI to show values in wires
- B** To visualize the flow of data
- C** To examine the data on a wire without suspending execution
- D** To look into a SubVI as the process is running

**Q18:** What benefit results from adding a delay (e.g., a Wait until Next ms Multiple function) to a While Loop?

- A** Reduced memory usage
- B** Reduced CPU usage
- C** Faster loop execution
- D** Memory pre-allocation

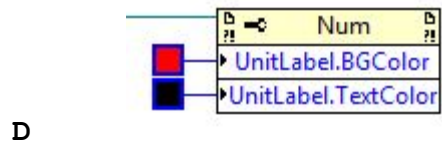
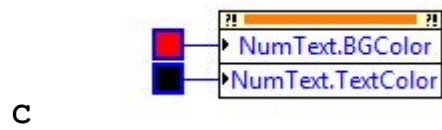
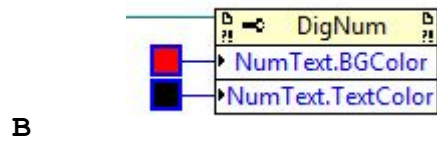
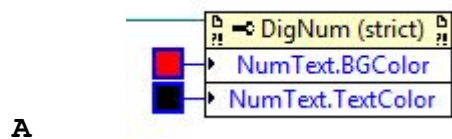
**Q19:** Why is there a broken wire?



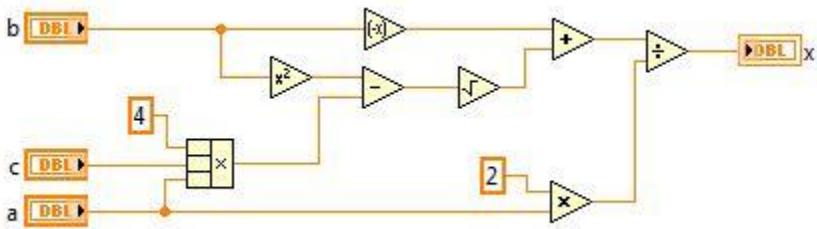
- A** Only one item can be bundled at a time
- B** The input cluster for the Bundle by Name function is not defined
- C** The Numeric, OK button, and Array inputs are not configured correctly
- D** Controls contain the wrong type of data



**Q20:** Which Property Node changes the text color attributes of any digital numeric control from a subVI?



**Q21:** Which equation is equivalent to the code?



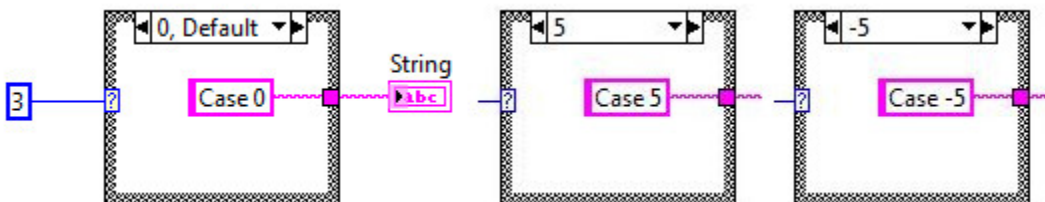
**A**  $x = \frac{-b + \sqrt{b^2 + 4ac}}{2a}$

**B**  $x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$

**c**  $x = \frac{-b + \sqrt{b^2 - 4ac}}{2c}$

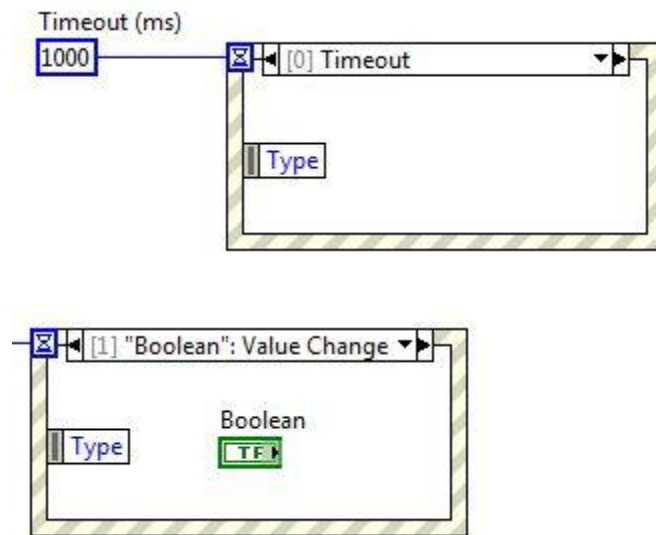
D  $x = \frac{(a \times -b) + \sqrt{b^2 - 4ac}}{2}$

**Q22:** What value does the **String** indicator display after the code executes?



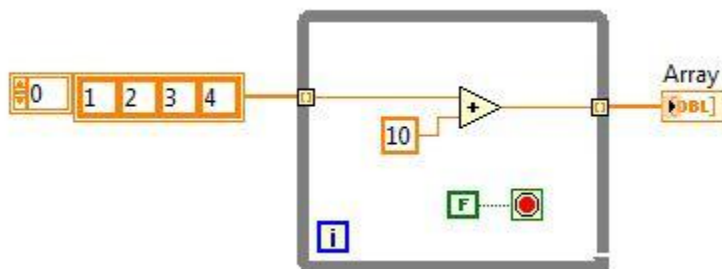
- |          |            |
|----------|------------|
| <b>A</b> | Case 0     |
| <b>B</b> | Case 5     |
| <b>C</b> | Case -5    |
| <b>D</b> | 0, Default |

**Q23:** When does the Timeout event case of the Event structure execute?



- A After 1000 ms, but only if no other event occurs
- B After 1000 ms regardless of the occurrence of another event
- C After 1000 ms and the user has pressed the **Boolean** button
- D After 1000 ms and another event has occurred

**Q24:** Which statement about the code is **TRUE**?

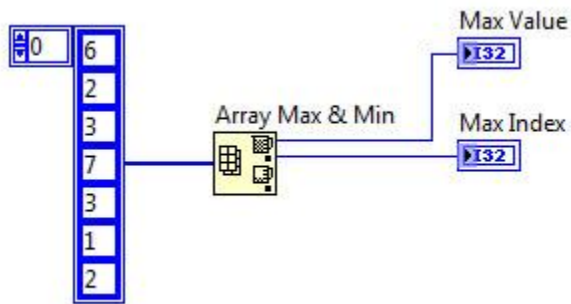


- A While Loop iterates four times and stops
- B While Loop iterates ten times and stops
- C While Loop iterates once and stops
- D While Loop iterates indefinitely

**Q25:** You have a front panel control on a top-level VI that you must control from within a subVI. What must you pass to the subVI?

- A The control's properties
- B The control's methods
- C The control's reference
- D The control's data type

**Q26:** What values do the **Max Value** and **Max Index** indicators display after the code executes?

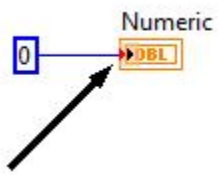


- A Max Value = 7, Max Index = 3
- B Max Value = 7, Max Index = 4
- C Max Value = 1, Max Index = 5
- D Max Value = 6, Max Index = 0

**Q27:** Which setting assigns specific keys or key combinations to a front panel control?

- A Key Focus
- B Key Navigation
- C Radix
- D Distribute Objects

**Q28:** What does the red dot indicate?



- A Data coercion
- B Data truncation
- C Data typecast
- D Buffer allocation

**Q29:** Which Property Node causes LabVIEW to generate an event as if the user interactively changed the value of **Boolean**?

- A 

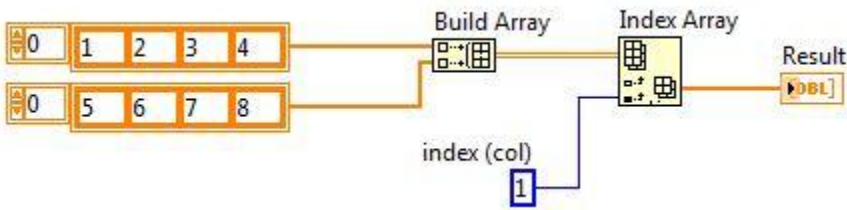
The diagram shows a Boolean Property Node with a green bar and a red dot. The sub-property "Val(Sgnl)" is selected.
- B 

The diagram shows a Boolean Property Node with a green bar and a red dot. The sub-property "Value" is selected.
- C 

The diagram shows a Boolean Property Node with a green bar and a red dot. The sub-property "ToggleKeyBind" is selected.
- D 

The diagram shows a Boolean Property Node with a green bar and a red dot. The sub-property "KeyFocus" is selected.

**Q30:** What value does the **Result** indicator display after the code executes?



- A [1 2 3 4]
- B [5 6 7 8]
- C [1 5]
- D [2 6]

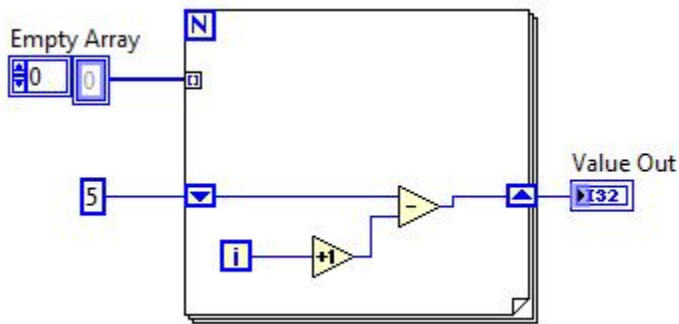
**Q31:** Which mechanism can modify the position of a front panel object while a VI is running?

- A Property Node
- B Invoke Node
- C Functional global variable
- D Tools palette

**Q32:** You generate 100 points of data that are unevenly spaced over a period of time. Which indicator best displays the data while maintaining the uneven spacing of its acquisition?

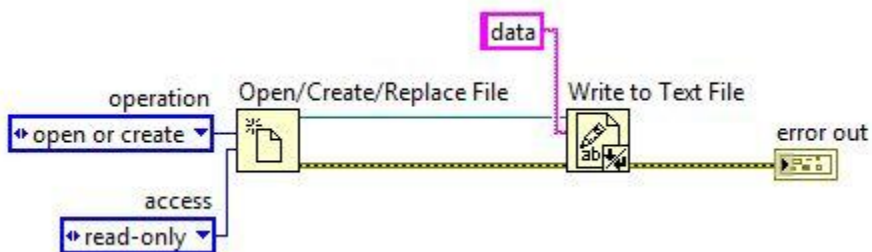
- A Waveform Chart
- B Waveform Graph
- C XY Graph
- D Intensity Graph

**Q33:** What value does the **Value Out** indicator display after the VI executes?



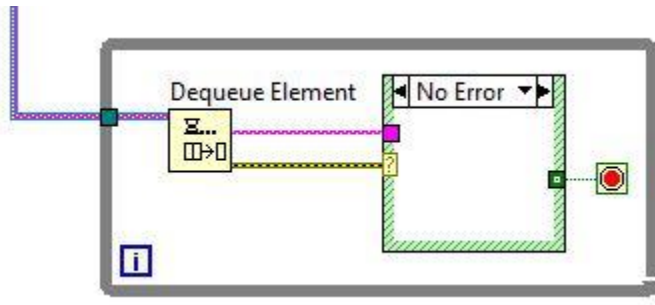
- A 0
- B 4
- C 5
- D 6

**Q34:** Why does an error occur when the code executes?



- A File path not wired to the input of the Open/Create/Replace File function
- B File opened with the incorrect access
- C File reference not closed
- D All of the above

**Q35:** How long does this Dequeue Element function wait to receive data?



- A 1 millisecond (default since unwired)
- B 1 second (default since unwired)
- C Indefinitely
- D It does not wait, it returns immediately

**Q36:** Which mechanism is used to implement a functional global variable?

- A Uninitialized shift register
- B Local variable
- C Property Node
- D Control

**Q37:** Which data synchronization mechanism requires continuous polling?

- A Notifier
- B Queue
- C Semaphore
- D Local Variable

**Q38:** If an input name in the Context Help window is in **bold** for a SubVI, which of the following conditions are TRUE? (Select all that apply)

- A The input value must be scalar
- B The input is recommended, but not required
- C The input is required
- D The calling VI will be broken if the input is unwired

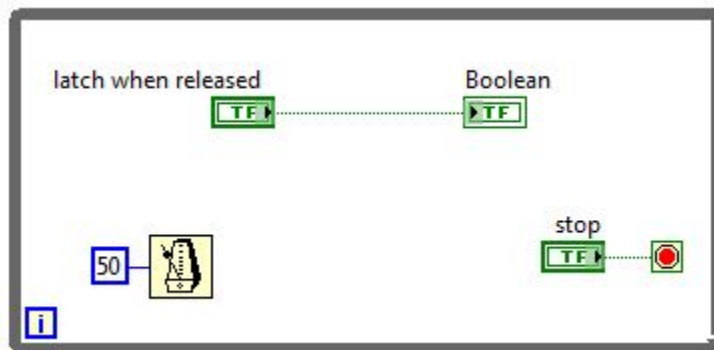
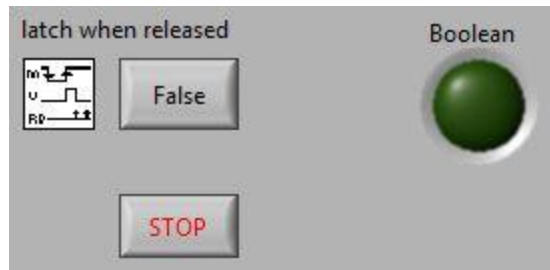


**Q39:** How do you document a VI so the description appears in the Context Help window when you hover over the VI icon?

- A Set the VI Description field in the VI Properties dialog box
- B Type in the Show Context Help window
- C Create a free label on the front panel called VI Description
- D Edit the LabVIEW help files

**Q40:** Consider the VI and user actions. What value does the **Boolean** indicator display at 7 seconds and 10 seconds, respectively?

Time in seconds	User Action
0	Clicks <b>Run</b> Arrow
5	Presses the <b>latch when released</b> button
8	Releases the <b>latch when released</b> button
15	Presses and releases the <b>latch when released</b> button
20	Clicks the <b>stop</b> button



- A FALSE, FALSE
- B FALSE, TRUE
- C TRUE, FALSE
- D TRUE, TRUE