Certified LabVIEW Associate Developer Exam

Test Booklet

Version #: CLAD - English - 100301-01
Test Code: 06302

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

Instructions:

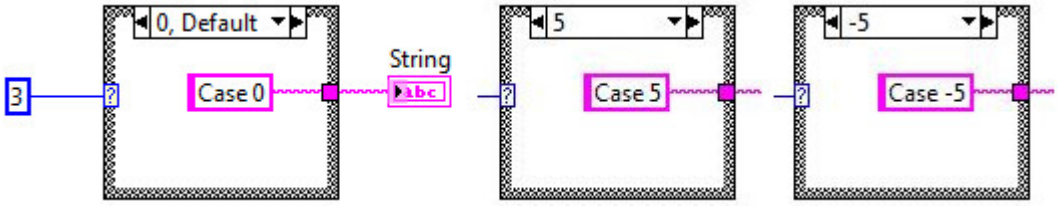
- **Please do not detach the binding staple of any section. If any part of the exam paper is missing or detached when returned to National Instruments, you will be deemed to have failed the exam.**
- Please follow the instructions on the Answer Sheet. If you fill in your Test Code or Question Responses 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%

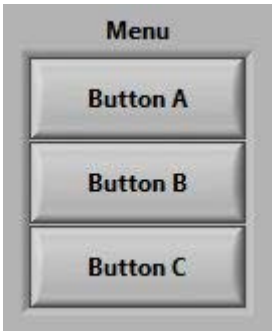
IMPORTANT: When you have completed this exam, place it in the provided envelope with your answer sheet and SEAL the envelope. Give the sealed envelope to your proctor.

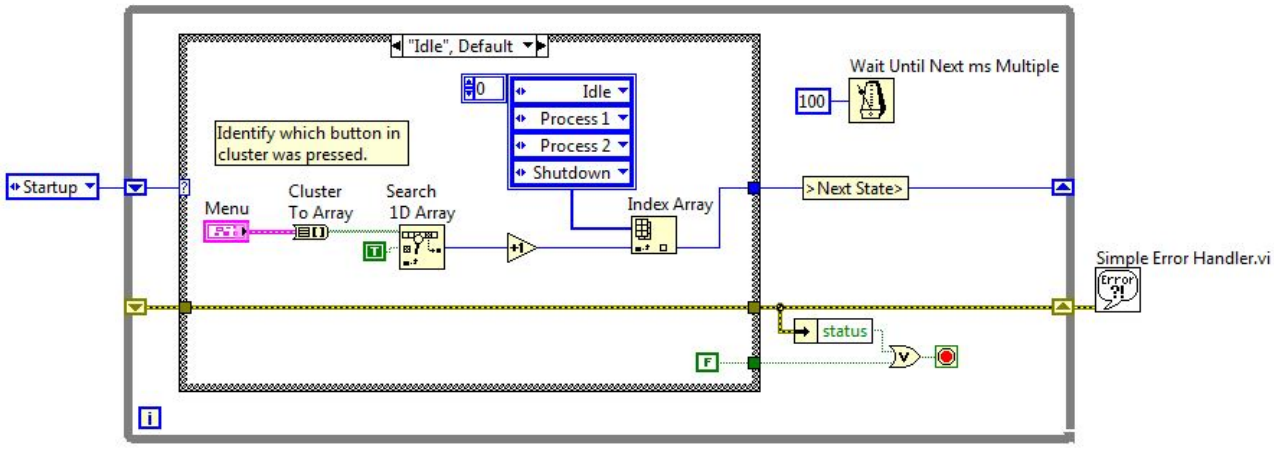
Q1: What value does the **String** indicator display after the code executes?



A Case 0
B Case 5
C Case -5
D 0, Default

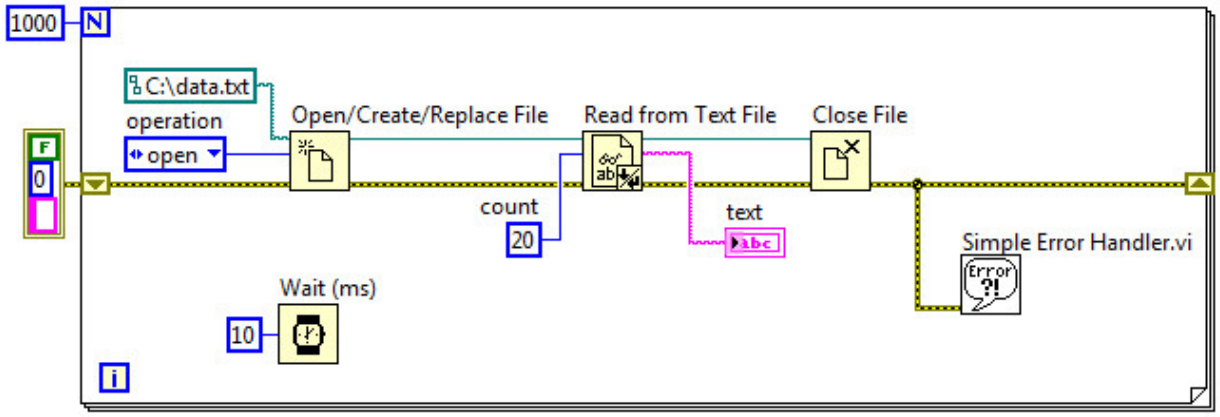
Q2: What is the next state when the user clicks **Button A?**





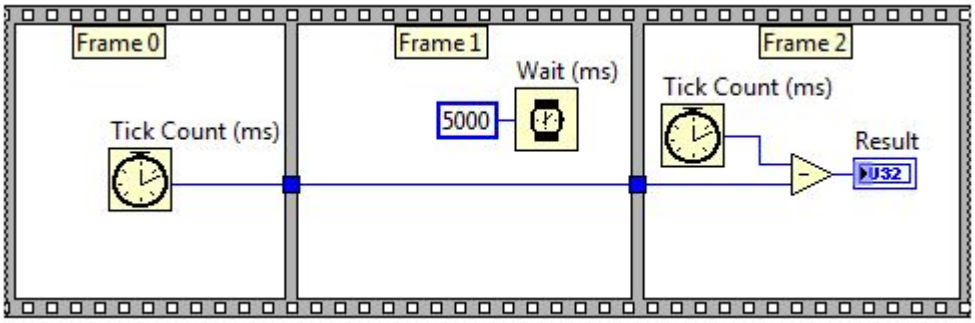
A Idle (default)
B Process1
C Process2
D Shutdown

Q3: The file C:\data.txt does not exist. How does LabVIEW handle the error when the code executes?



A LabVIEW returns no errors
B The VI does not terminate on the first error
C Simple Error Handler VI does not handle the error
D LabVIEW simultaneously displays 1000 error dialog boxes when the VI executes

Q4: Approximately what value does the **Result** indicator display after the code executes?



A 5
B 5.00
C 500
D 5000

Q5: Unlike _____, which display an entire waveform that overwrites the data already stored, _____ update periodically and maintain a history of the data previously stored.

A Graphs; Charts
B Charts; Plots
C Plots; Graphs
D Charts; Graphs

Q6: 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

Q7: Race conditions occur when the timing of events unintentionally affects an output or data value. Which technique protects a critical section of code from a race condition? (Select all that apply)

A Functional Global Variable
B Semaphores
C Global Variable
D Single Process Shared Variable

Q8: Which data file type is best suited for random access reading?

A ASCII
B Object Class
C Text
D Binary

Q9: Which of the following can be used to plot data points that are **NOT** sampled at even intervals?

A XY Graph
B Waveform Graph
C Waveform Chart
D Dynamic Chart

Q10: 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

Q11: Which method is most appropriate for debugging a broken wire?

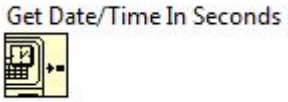
A Place a probe on the broken wire and run the VI in debug mode
B Place a break point on the broken wire and run the VI in debug mode
C Mouse over the red X to view the tip strip with information on why the wire is broken
D Run the VI in execution highlighting mode and wait for LabVIEW to report the broken wire when the execution reaches the break in the wire

Q12: Which timing function is best for timing control logic in applications that run for extended periods of time?

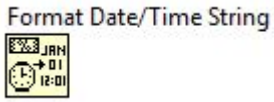
A

B

C



D



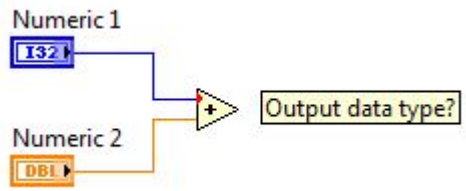
Q13: How do you document a VI so the description appears in the Context Help window when you hover over the VI icon?

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

Q14: Which statement is **FALSE**?

A A subVI connector pane defines where to wire inputs and outputs
B The color of a subVI connector pane terminal matches the data type to which it connects
C A subVI must have an icon and connector pane
D A subVI icon can be edited from the functions palette

Q15: If the indicator was created using the shortcut **Create»Indicator** on the output of the Add function, what is the data type?



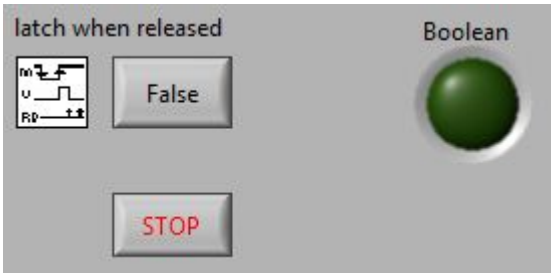
A Double Precision Floating Point (DBL)
B Single Precision Floating Point (SGL)
C Long Integer (I32)
D Unsigned Long Integer (U32)

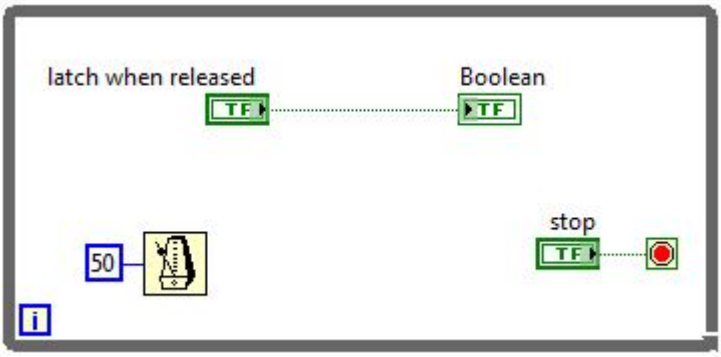
Q16: When implementing a state diagram that allows for future application scalability, which base structure is most appropriate?

A Sequence structure
B Case structure
C Formula node
D Object-Oriented structure

Q17: 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 **Run** Arrow
5	Presses the **latch when released** button
8	Releases the **latch when released** button
15	Presses and releases the **latch when released** button
20	Clicks the **stop** button



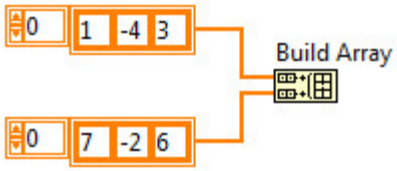


A FALSE, FALSE
B FALSE, TRUE
C TRUE, FALSE
D TRUE, TRUE

Q18: Which variable is commonly used to eliminate race conditions by preventing simultaneous access to code or data?

A Functional global variable
B Local variable
C Global variable
D Shared variable

Q19: When Concatenate Inputs is selected, what is the output of the Build Array function?



A $[1 \quad -4 \quad 3 \quad 7 \quad -2 \quad 6]$

B $[1 \quad 7 \quad -4 \quad -2 \quad 3 \quad 6]$

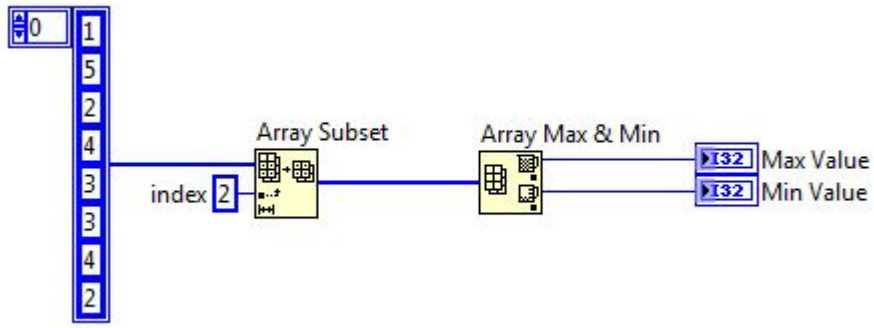
C $\begin{bmatrix} 1 & -4 & 3 \\ 7 & -2 & 6 \end{bmatrix}$

D $\begin{bmatrix} 1 & 7 \\ -4 & -2 \\ 3 & 6 \end{bmatrix}$

Q20: What is the function of a local variable?

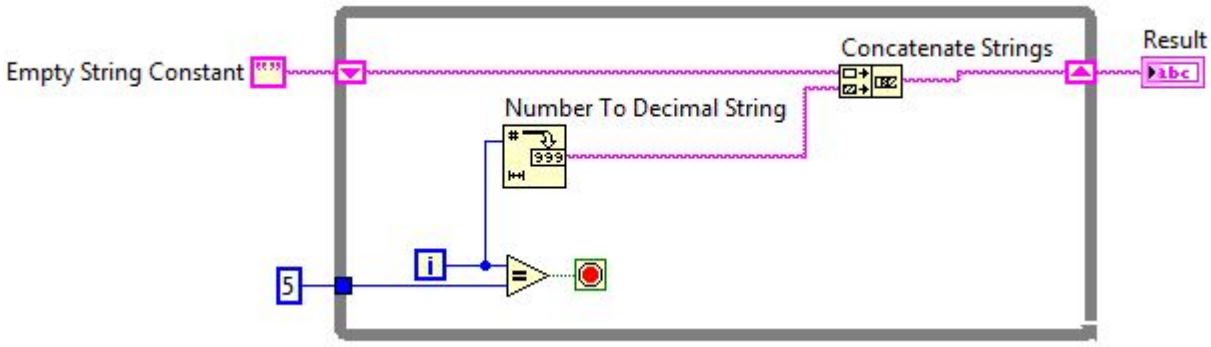
A To pass data within a single VI
B To pass data between multiple VIs in a single project
C To pass data between multiple VIs on a single computer
D To pass data between multiple VIs across multiple computers

Q21: What values do the **Max Value** and **Min Value** indicators display after the VI executes?



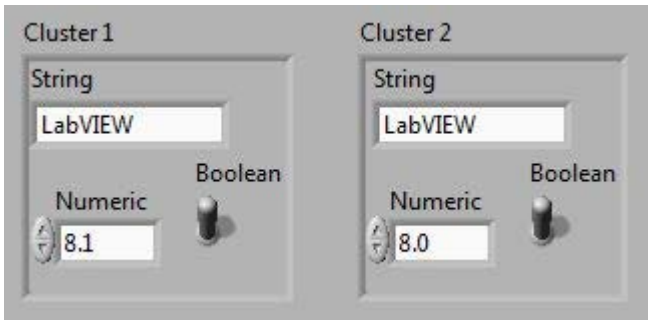
A Max Value = 4, Min Value = 2
B Max Value = 5, Min Value = 1
C Max Value = 5, Min Value = 2
D Max Value = 4, Min Value = 3

Q22: What string does the **Result** indicator display after the code executes?

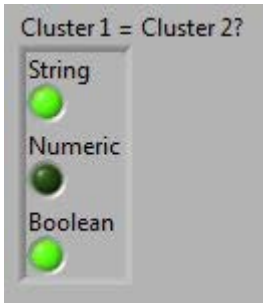


A 12345
B 01234
C 123456
D 012345

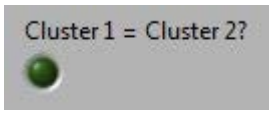
Q23: Using the **Equal?** function to compare the elements of these two clusters, what output data type and value is correct?



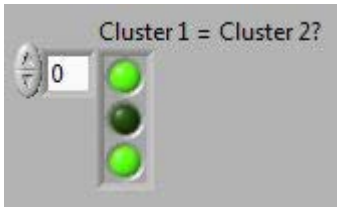
A



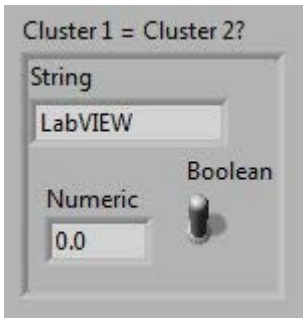
B



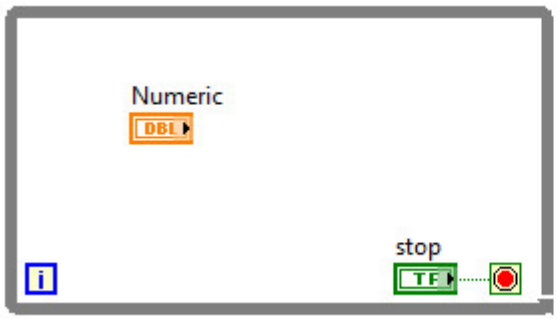
C

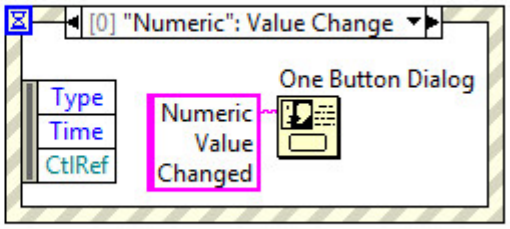


D



Q24: Which revision allows the VI to respond to every numeric change event?

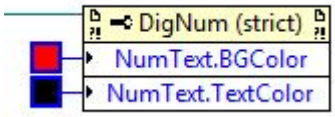




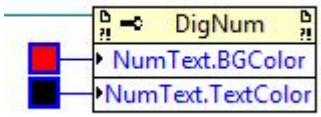
A Remove the One Button Dialog VI from the Event structure
B Move the Event structure into the While Loop
C Use the Mouse Up event instead of the Value Change event
D Use Filter events instead of Notify events

Q25: Which Property Node changes the text color attributes of any digital numeric control from a subVI?

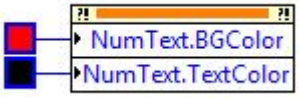
A



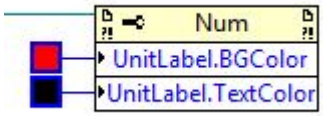
B



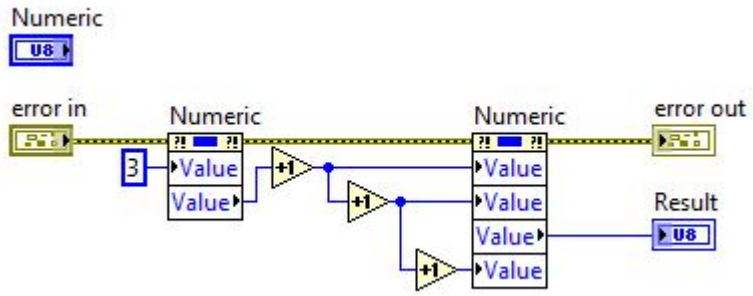
C



D



Q26: What value does the **Result** indicator display after the VI executes?

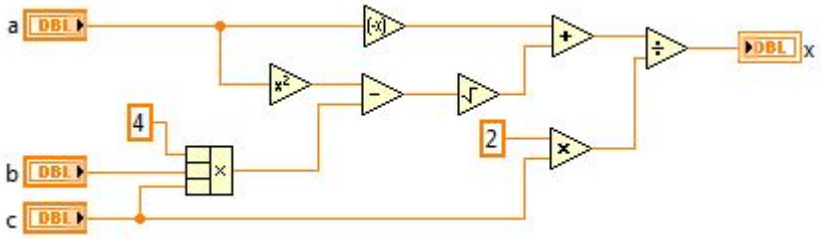


A 3
B 4
C 5
D 6

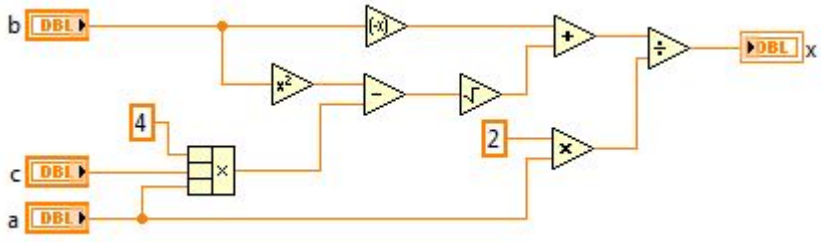
Q27: Which code snippet is an implementation of the equation?

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

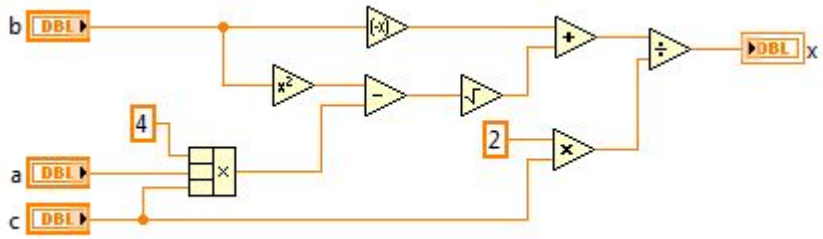
A



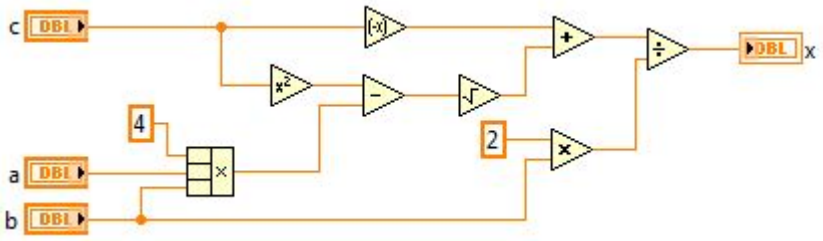
B



C



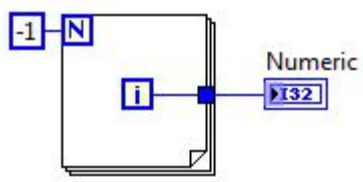
D



Q28: In a timer application, you create Start, Stop and Reset buttons on the user interface. The labels and Boolean text reflect the function. Which data structure is appropriate for grouping the three buttons on the front panel?

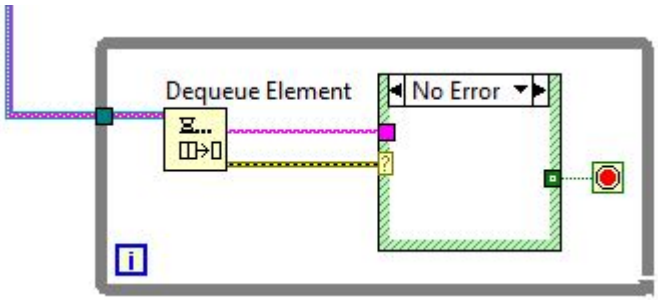
A Array
B Cluster
C Ring control
D Matrix

Q29: What is the resulting behavior when the code executes?



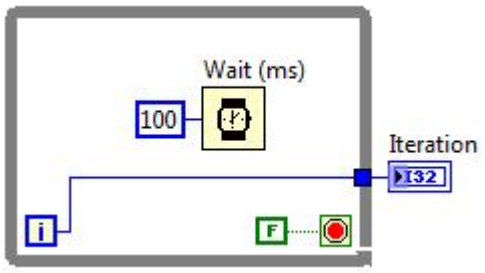
A The For Loop runs indefinitely
B The For Loop runs for 4294967295 iterations
C The For loop runs for 0 iterations
D LabVIEW returns an error because a negative number is not allowed as an input

Q30: 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

Q31: Which statement about the following block diagram is **TRUE**?

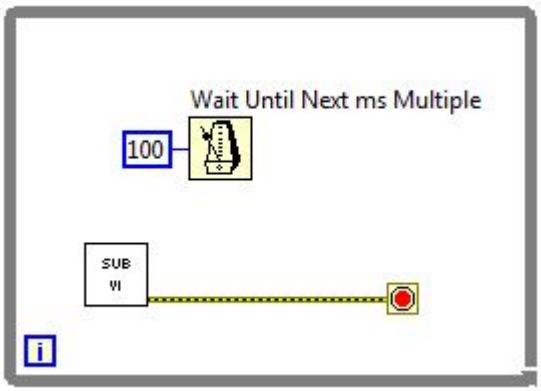


A The loop executes once and the **Iteration** indicator displays a value of one
B The loop executes once and the **Iteration** indicator displays a value of zero
C The loop does not execute and the **Iteration** indicator displays a value of zero
D The loop executes infinitely and the program must be aborted

Q32: 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)

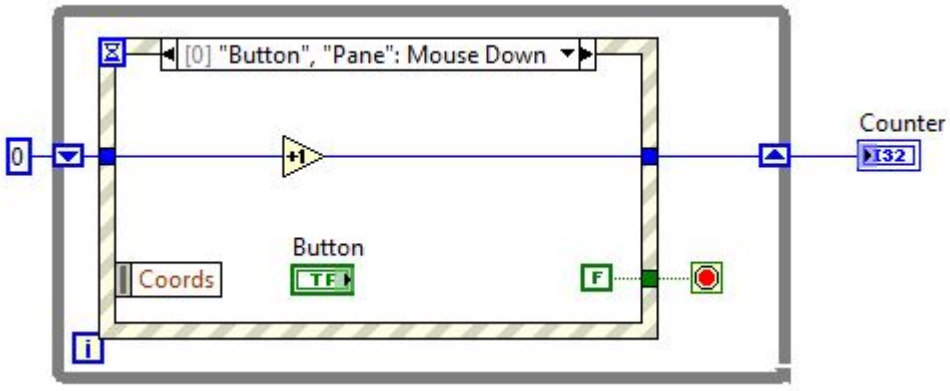
A The input value must be scalar
B The input is recommended, but not required
C The input is required
D The calling VI will be broken if the input is unwired

Q33: Which conditions cause this While Loop to stop?



A A TRUE value in the status Boolean of the error cluster
B A non-zero value in error code of the error cluster
C A negative value in error code of the error cluster
D Any of the above

Q34: When the user clicks the **Button** control, how many times is the **Increment** function called?

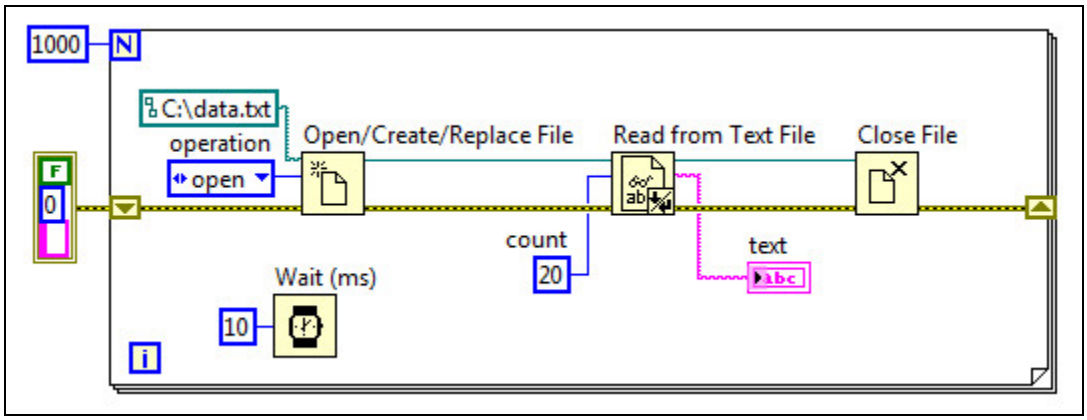


A 0
B 1
C 2
D 3

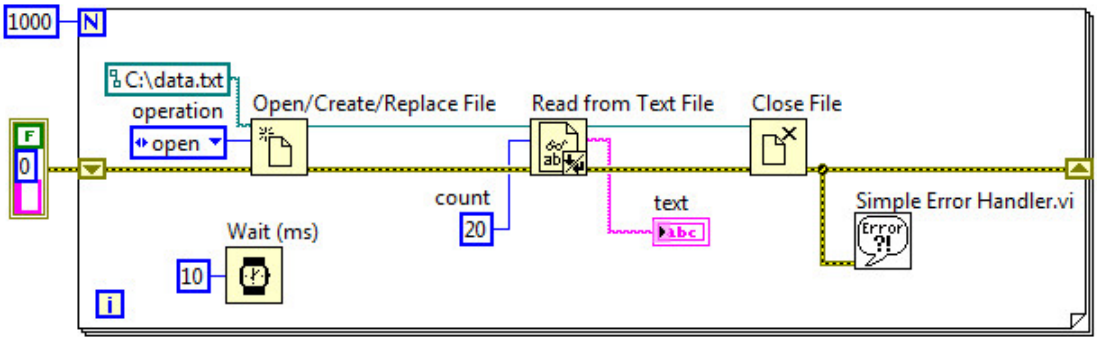
Q35: Which event does **NOT** occur when a user moves to and clicks on a Boolean Stop button?

A Drag Ended
B Mouse Enter
C Mouse Down
D Value Change

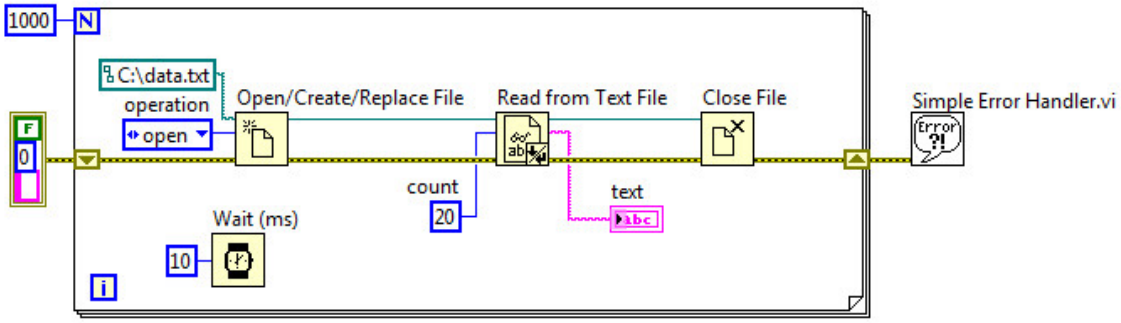
Q36: The file C:\data.txt does not exist, but the VI does not report an error. Which code snippet reports an error and stops?

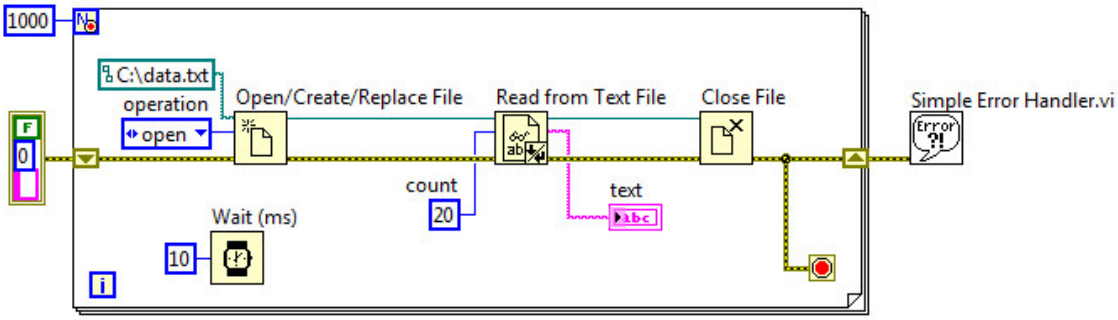


A

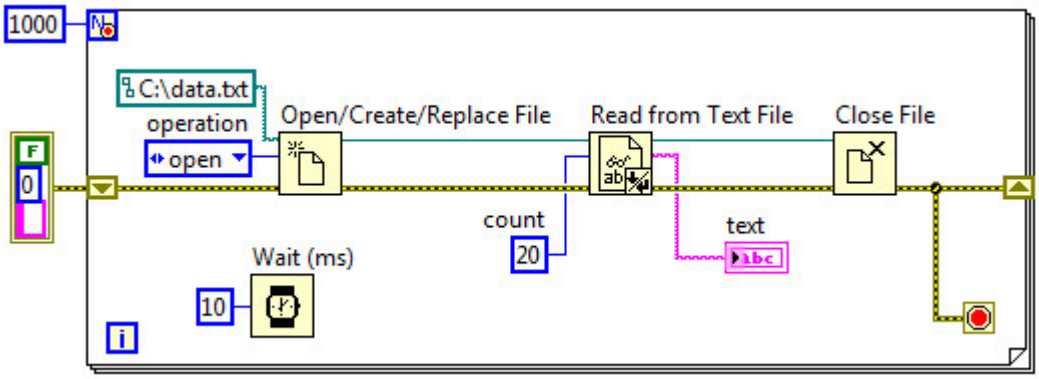


B





C

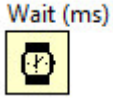


D

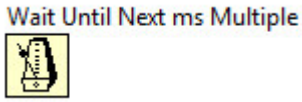
Q37: Which timing function can roll over during program execution?

A

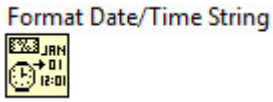
B



C



D



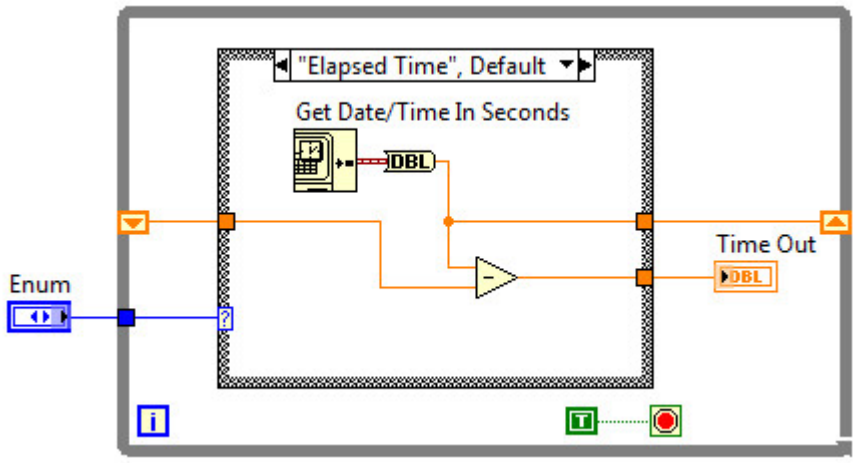
Q38: Which programming model does LabVIEW use to determine block diagram execution order?

A Control flow, program elements execute in sequential order
B Top to bottom, program elements execute in order of position, starting at the top and moving downward
C Left to right, program elements execute in order of position, starting on the left and moving right
D Dataflow, program elements execute when all their inputs are available

Q39: 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

Q40: In the following block diagram, how many iterations does the While Loop execute?



A 0
B 1
C 2
D Infinite