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Week 3: Assignment 3

The due date for submitting this assignment has passed.

Due on 2021-08-25, 23:59 IST.

Assignment submitted on 2021-08-25, 16:21 IST

1) Consider a variable `num` of type `float`, i.e., it is a floating point number. Suppose a particular method has a statement `if(log(num)) >= 0.72`, will it be considered a definition of **num** or a use of `num`? ***1 point***

- The statement is a definition of **num** .
- The statement is a use of **num** .

Yes, the answer is correct.
Score: 1
Accepted Answers:
*The statement is a use of **num** .*

2) Consider a variable count of type `int`. Suppose there is a method that has a statement of the type `count++;`, which of the following statements are correct regarding the data flow definition of `count`? ***1 point***

- The statement is a definition of count.
- The statement is a use of count.
- The statement is both a definition and use of count.
- None of the above holds true.

Yes, the answer is correct.
Score: 1
Accepted Answers:
The statement is both a definition and use of count.

3) State true or false: For every variable in a particular program, every definition of a variable will always reach a use. ***1 point***

- True.
- False.

Yes, the answer is correct.
Score: 1
Accepted Answers:
False.

4) Which of the following best defines a du-path for a variable x? ***1 point***

- A du-path is a simple path from a definition of x to a use of x without any further definitions of x in-between.
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- A du-path is a path from a definition of x to a use of x without any further uses of x in-between.

Yes, the answer is correct.
Score: 1
Accepted Answers:
A du-path is a simple path from a definition of x to a use of x without any further definitions of x in-between.

5) State yes or no: We group du-paths with respect to a variable by its uses. ***1 point***

- Yes.
- No.

Yes, the answer is correct.
Score: 1
Accepted Answers:
No.

6) Which of the following properties should a side-trip taken to cover a du- path satisfy? ***1 point***

- Side trips should be use clear.
- Side trips should be def clear.
- Side trips should be def and use clear.
- Side trips need not satisfy any condition.

Yes, the answer is correct.
Score: 1
Accepted Answers:
Side trips should be def clear.

7) Is it true that prime paths coverage (a structural coverage criterion that we saw earlier) subsumes all-du-paths-coverage? ***1 point***

- True.

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False.

Yes, the answer is correct.
Score: 1
Accepted Answers:
True.

8) Which of the following statements are true when it comes to comparing traditional source code coverage criteria with graph based coverage criteria? ***1 point***

- (•) Node and statement coverage are the same, edge and branch coverage are the same.
- ( ) Edge and decision coverage are the same.

Yes, the answer is correct.
Score: 1
Accepted Answers:
Node and statement coverage are the same, edge and branch coverage are the same.

9) Which of the following defines a linearly independent path of eecution in a control flow graph? ***1 point***

- ( ) A path in which there are no branches.
- (•) A path which does not contain other paths within it.
- ( ) A path that represents structural complexity of a program.
- ( ) A path within a connected component.

Yes, the answer is correct.
Score: 1
Accepted Answers:
A path which does not contain other paths within it.

10) State true or false: An algorithm for enumerating prime paths works by enumerating all simple paths in order of increasing length and stops when there are no more such paths. ***1 point***

- (•) True.
- ( ) False.

Yes, the answer is correct.
Score: 1
Accepted Answers:
True.