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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Software Testing (course)

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Course outline

- How does an NPTEL online course work? ()
- Pre-requisite Assignment ()
- Week 1 ()
- Week 2 ()
- Week 3 ()
- Lecture 10 - Assignment 2: Structural Coverage Criteria (unit?unit=30&lesson=31)
- Lecture 11 - Data Flow Graphs (unit?unit=30&lesson=32)

Week 3 : Assignment 3

Your last recorded submission was on 2022-08-17, 00:18 Due date: 2022-08-17, 23:59 IST. IST

1) Which of the following represents a basic block in a control flow graph? ***1 point***

- ○ A basic block of statements is a set of all statements that are a part of a function that the control flow graph represents.
- ◉ A basic block of statements is a sequence of statements such that if the first statement the sequence is executed then all the statements in the sequence will also be executed.

2) Consider a variable count of type int. Suppose there is a method that has a statement of the type $\mathrm{count}{+}{+};$. 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.
- ○ The statement is neither a definition nor a use of count.

3) Consider a variable x of type double and suppose a particular method in Java has a statement **if(Math.log(x)) >= 4.2**, will it be considered a definition of x or a use of x? ***1 point***

- ○ The statement is a definition of x
- ◉ The statement is a use of x.

4) State true or false: Consider a variable x in a program. Not every definition of x will always reach a use. ***1 point***

- ○ True.

○ False.

5) 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.

6) State yes or no: We group du-paths with respect to a variable by their definitions. ***1 point***

◉ Yes.

○ No.

7) Is it true that the all-du-paths data flow coverage criterion subsumes prime path coverage? ***1 point***

◉ Yes.

○ No.

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.

9) Which of the following defines a linearly independent path of execution 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.

10) State true or false: Node and edge coverage, as test requirements for structural coverage over graphs, are given with the input graph itself. ***1 point***

○ True.

○ False.

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers