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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)

Lecture 12 - Algorithms: Data Flow Graph Coverage

Week 3 : Assignment 3

The due date for submitting this assignment has passed.

Due on 2022-08-17, 23:59 IST.

Assignment submitted on 2022-08-17, 23:55 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.

Yes, the answer is correct.
Score: 1

Accepted Answers:
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.

Yes, the answer is correct.
Score: 1

Accepted Answers:
The statement is both a definition and use of count.

Criteria (unit?unit=30&lesson=33)

Lecture 13 - Graph Coverage Criteria: Applied to Test Code (unit?unit=30&lesson=34)

Lecture 14 - Testing Source Code: Classical Coverage Criteria (unit?unit=30&lesson=35)

Practice: Week 3 : Assignment 3 (Non Graded) (assessment?name=123)

Quiz: Week 3 : Assignment 3 (assessment?name=138)

Week 3 Feedback Form: Software Testing (unit?unit=30&lesson=126)

Week 4 ()

Week 5 ()

Week 6 ()

Week 7 ()

Week 8 ()

Week 9 ()

Week 10 ()

Week 11 ()

Week 12 ()

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.

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

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

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

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

- Yes.
- No.

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

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

- Yes.

Learning Materials ()

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- (●) No.

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

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 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.

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

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.

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