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


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

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 **1 point** particular method has a statement `if (log(num)) >= 0.72`, will it be considered a definition of `num` or a use of `num`?

- ☐ 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 **1 point** statement of the type `count++`, which of the following statements are correct regarding the data flow definition of `count`?

- ☐ 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`.

☐ 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)

☐ Week 3
Feedback
Form:
Software
Testing (unit?
unit=30&lesson=37)

☐ Practice: Week
3: Assignment
3 (Non
Graded)
(assessment?
name=112)

☒ **Quiz: Week 3:
Assignment 3
(assessment?
name=124)**

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

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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.

☐

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.

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 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: 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.