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Assignment 2

The due date for submitting this assignment has passed.

Due on 2020-09-30, 23:59 IST.

Assignment submitted on 2020-09-30, 22:13 IST

1) Given a graph corresponding to control graph of a method, which of the options below define a reachable node? ***1 point***

- A node is said to be reachable if there is a path from any other node to that node in the graph.
- A node is said to be reachable if there is a path from the initial node to that node in the graph.

Yes, the answer is correct.
Score: 1
Accepted Answers:
A node is said to be reachable if there is a path from the initial node to that node in the graph.

2) When do we say that a test path *p* tours a path *q* ***1 point***

- We say that a test path *p* tours a path *q* if *q* is a sub-path of *p*.
- We say that a test path *p* tours a path *q* if *p* is a sub-path of *q*.

Yes, the answer is correct.
Score: 1
Accepted Answers:
We say that a test path p tours a path q if q is a sub-path of p.

3) State true or false: In control flow graphs corresponding to functions or methods, strongly connected components correspond loops in the control flow. ***1 point***

- True.
- False.

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

The following graph will be used for the remaining seven questions of this section, on structural graph coverage criteria. Please draw the graph. Consider a graph $G = (V, E)$ where the set of nodes V = {1, 2, 3, 4, 5, 6, 7}, initial node is 1, final node is 7 and the set of edges E is {(1, 2), (1, 7), (2, 3), (2, 4), (3, 2), (4, 5), (4, 6), (5, 6), (6, 1)}.

4) How many requirements are there for edge pair coverage? ***1 point***

- 10 requirements.
- 12 requirements.

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

5) Consider the test paths t_0 = [1, 2, 4, 5, 6, 1, 7] and t_1 = [1, 2, 3, 2, 4, 6, 1, 7]. Do the test paths t_0 and t_1 satisfy edge pair coverage? ***1 point***

- Yes, it covers all the edge pairs.
- No, they leave out edge pairs [3, 2, 3] and [6, 1, 2].

Yes, the answer is correct.
Score: 1
Accepted Answers:
No, they leave out edge pairs [3, 2, 3] and [6, 1, 2].

6) Which of the following test paths satisfy node coverage but not edge coverage on the graph? ***1 point***

- Test path [1, 2, 4, 6, 1, 7].
- Test path [1, 2, 4, 5, 6, 1, 7].
- Test path [1, 2, 3, 2, 4, 6, 1, 7].
- Test path [1, 2, 3, 2, 4, 5, 6, 1, 7].

Yes, the answer is correct.
Score: 1
Accepted Answers:
Test path [1, 2, 3, 2, 4, 5, 6, 1, 7].

7) How many test requirements are there for prime path coverage in this graph? ***1 point***

- 16 requirements.
- 14 requirements.
- 12 requirements.
- 15 requirements.

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

8) What do the prime paths [2, 3, 2] and [3, 2, 3] together represent? ***1 point***

- They represent two ways of going around the loop between the vertices 2 and 3.
- They represent more than one iteration of the loop between the vertices 2 and 3.

Yes, the answer is correct.
Score: 1

Accepted Answers:
They represent more than one iteration of the loop between the vertices 2 and 3.

9) What is the longest length prime path that can be found in this graph *G*? ***1 point***

- Longest length prime path will have length (number of edges) 6.
- Longest length prime path will have length (number of edges) 7.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Longest length prime path will have length (number of edges) 6.

10) Consider the simple path [3, 2, 4, 5, 6] and test path [1, 2, 3, 2, 4, 6, 1, 2, 4, 5, 6, 1, 7]. Does the test path tour the simple path directly or with a sidetrip? ***1 point***

- The test path tours the simple path directly.
- The test path tours the simple path with a side trip [4, 6, 1, 2, 4].

Yes, the answer is correct.
Score: 1

Accepted Answers:
The test path tours the simple path with a side trip [4, 6, 1, 2, 4].