

In-Class Exercises Week 8

Software Testing

SWE 437/637

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(Dr. B for short)

Exercise #1

Assume a graph defined as follows:

$$N = \{ 1, 2, 3, 4 \}$$

$$NO = \{ 1 \}$$

$$Nf = \{ 4 \}$$

$$E = \{ (1,2), (2,3), (3,2), (2,4) \}$$

1. Draw the graph
2. List *test paths* that satisfy node coverage but NOT edge coverage, or explain why that is not possible
3. List *test paths* that satisfy edge coverage but NOT edge-pair coverage, or explain why that is not possible
4. List *test paths* that satisfy edge-pair coverage

Exercise #2

Assume a graph defined as follows:

$$N = \{ 1, 2, 3 \}$$

$$NO = \{ 1 \}$$

$$Nf = \{ 3 \}$$

$$E = \{ (1,2), (1,3), (2,1), (2,3), (3,1) \}$$

1. Draw the graph
2. Which of the following paths are test paths? Why or why not?
 - $p1 = [1,2,3,1]$
 - $p2 = [1,3,1,2,3]$
 - $p3 = [1,2,3,1,2,1,3]$
 - $p4 = [2,3,1,3]$
 - $p5 = [1,2,3,2,3]$
3. List the requirements for edge-pair coverage
4. Do the previously-identified test paths satisfy edge-pair coverage? Why or why not?
5. Consider the prime path $[3,1,3]$ and test path $p6 = [1,3,1,2,1,3]$
 - Does $p6$ tour the prime path $[3,1,3]$ directly?
 - Does $p6$ tour the prime path $[3,1,3]$ with a sidetrip? If so, what is the sidetrip?