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CSC410, Fall 2016 - Homework 5

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Lecture: Tuesday

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Problem 1

1,No, it does not.

(a || b) && (not a or b)

T === True, F === False

	a	b	c	d	Outcome
(a)	T	F	T	T	T
(b)	T	F	T	**F**	F
(c)	T	F	**F**	F	T
(d)	**F**	F	T	T	F
(e)	F	**T**	T	T	T

2,

Condition	Values of the other variables	Which test causes the branch condition to be true	Which test causes the branch condition to be false
d	a=True, b=False, c=True	Test (a)	Test (b)
a	b=False, c=True, d=True	Test (a)	Test (d)
b	a=False, c=True, d=True	Test (e)	Test (d)
c	a=True, b=False, d=False	Test (c)	Test (b)

3,

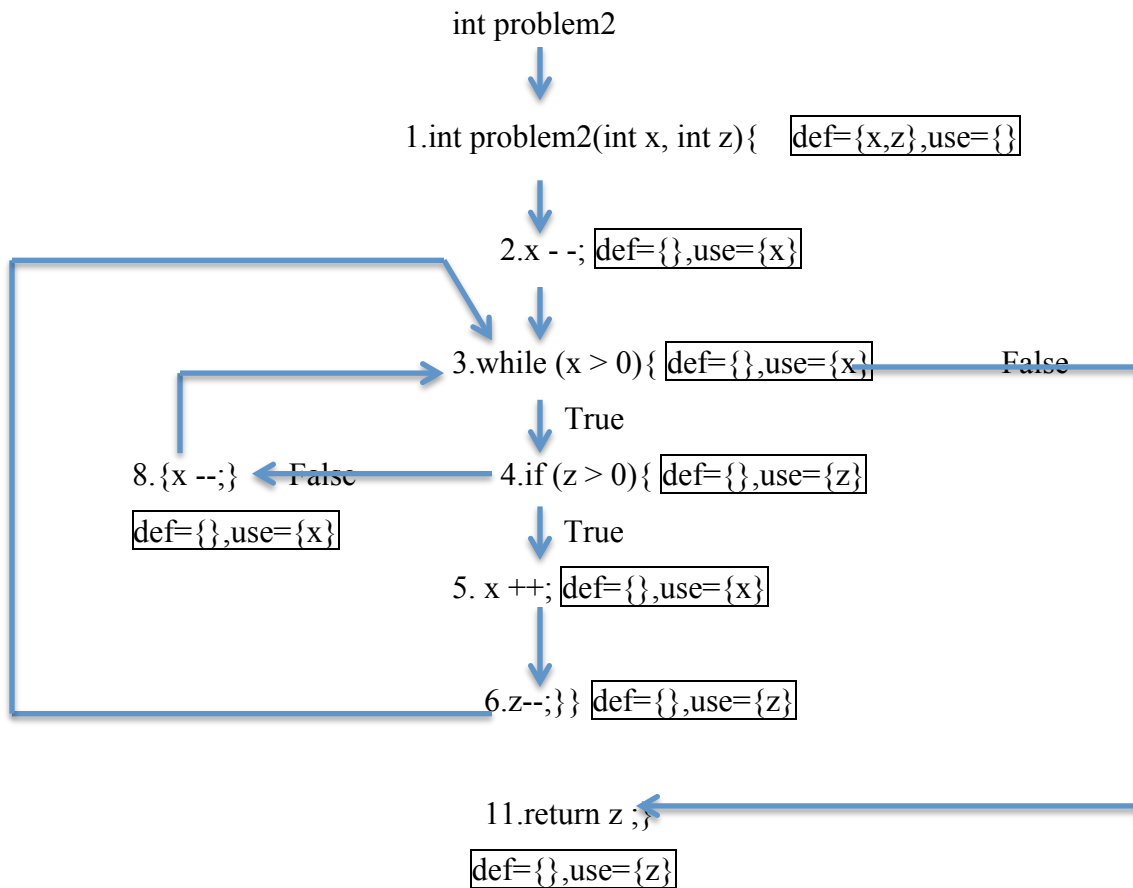Tests (a) and (b) are sufficient to provide 100% branch coverage.

Problem 2

1,

0 times: x = -1,z=1

One time: x =1,z = 0

Many time: x =1 , z = 100

2,

int problem2

1.int problem2(int x, int z){   def={x,z},use={}

2.x - -; def={},use={x}

3.while (x > 0){ def={},use={x}   False

True

8.{x --;}   False   4.if (z > 0){ def={},use={z}

def={},use={x}   True

5. x ++; def={},use={x}

6.z--;}} def={},use={z}

11.return z ;

def={},use={z}

3,

McCabe's Cyclomatic Complexity :$9 - 8 + 2 = 3$

Path1: $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 3$

Path2: $1 \rightarrow 2 \rightarrow 3 \rightarrow 11$

Path3: $1 \rightarrow 2 \rightarrow 3 \rightarrow > 4 \rightarrow 8 \rightarrow 3$

Problem 3,

1,

a), return statement replacement

b),AOR

c),SVR

d),SVR

e),AOR

f),return statement replacement

2,

a)

Mutants killed: b) and f)

b)

Mutants killed: a), b) and f)

c)

Mutants killed: a),b),c) and f)