Assignement #4

Due Date : 21/11/2023 at 23.55

**Question #1**

Given is the following program and initial input: a= 2; b = 3.

1. cin >> a;

2. cin >> b;

3. c= a+b;

4. if (a> (b-c))

{

5. if (b == (c-a))

{

6. c=2;

7. a=b+c;

}

8. else

{

9. a=3;

}

10. if (c < b)

{

11. b++;

12. a=3

}

13. else

{

14. b=0;

}

}

15. cout << c;

16. cout << b;

17. cout << a;

1. Create a dynamic PDG and compute a dynamic backward slice for S (c,15,last execution position), given the following input: Initial input: a= 2; b = 3
2. Compute dynamic forward slices for the given the following input: initial input: a= 2; b = 3. Calculate the slices for all variables until the end of the program. Make sure you show all the steps at each execution position - like what we did during the lecture.

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|  | Program Execution | a | b | c |
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**Question #2**

You have started a new position as a software maintainer. At your first department meeting your new boss is making the following announcement. “I am excited to announce that we are replacing our traditional regression testing approach with a profile based regression testing approach, which not only reduces the number of regression tests which we have to perform but also is safe.

Do you agree/disagree with this statement? Briefly justify your answer.