CSCE 330 Fall 2004

QUIZ 7

Assigned Tuesday, 2004-09-21

To show that I is a loop invariant for a loop whose condition is B, you need to prove three of the following properties. Which three?

1. I is implied by the precondition of the loop
2. I implies the precondition of the loop
3. $I \wedge \neg B$ implies the postcondition of the loop
4. If $I \wedge \neg B$ holds before at the beginning of the loop, I holds after executing the body of the loop.
5. If $I \wedge B$ holds before the body of the loop, I holds after executing the body of the loop.

Answer: The first (I is implied by the precondition of the loop), the third ($I \wedge \neg B$ implies the postcondition of the loop), and the fifth (If $I \wedge B$ holds at the beginning of the loop, I holds after executing the body of the loop.