

Aum Amriteswaryai Namah

19CSE205 – Program Reasoning – Assignment – 7

Please do the following and submit with proofs.

1. **Try the demonstrations given in the pdf (Week 8) and understand the intricacies of the loop and proving correctness of loop. Submit screenshot proof for each.**
 - Failure to prove post condition when while loop is present.
 - Able to prove for fixed n.
 - Able to prove for bound n.
2. **Work out the 9 changes given in the last slide of Loops and get a good grip of the subtleties involved in specifying loop invariants. Submit screenshot proof for each.**
 - Able to prove post condition when loop invariant is correctly specified.
 - Failure to prove full criteria which each change is made.
3. **Write a program and correctness criteria for $1^2 + 2^2 + \dots + n^2$ in a similar fashion and prove the correctness. Submit screenshot proof.**

Submit all the programs along with the frama-c output (as given in Sample-Snapshot.png). Note that you must capture the snapshot for every change tried.

Note: Don't crop snapshot in any way. The entire terminal that includes command prompt, the program, the frama-c command and the frama-c output should all be visible for each exercise.
