COMP3018J Systems Design and Verification. Assignment 1.

Please write postconditions for all of the problems below. Then, take 1 problem from section A and 1 problem from section B and for each of them construct the finished algorithm using the method we have been studying.

Section A.

1. Given g[0..1000) of Int which already contains values, construct an algorithm to determine the smallest value in the 2nd half of g.

2. Construct an algorithm to determine the product of the natural numbers from 10 to 49 inclusive.

3. Given f[0..N) of Int which already contains values, construct an algorithm to find the smallest index i where the value at f.i is an even number. We guarantee that the array f contains some even numbers.

Section B.

4. Given f[0..100) of Int which already contains values, construct an algorithm to count the number of negative values in f. A negative value is a value less than zero.

5. Given g[0..500) of Int which already contains values, construct an algorithm to add the positive values in the 2nd half of g. A positive value is a value greater than or equal to zero.

6. Given f[100..300) of Int which already contain values, construct an algorithm to determine whether the second half of f is an exact copy of the first half of f.

Notes.

Handwritten solutions are fine. Please scan or photograph your work and put in a single file. Try to write neatly so I can read your work. You must submit the work on Brightspace before the deadline indicated.