

**Derivation of Algorithms**  
**CA 2 – Deriving programs**  
**(Replacing a constant with a variable)**  
**10%**

**Question**

Given an integer array  $f[0..N]$ , where  $\{N \geq 0\}$ , determine if all the array elements are greater than 100.

Your answer should contain the following parts:

Specification	[5 marks]
Invariant	[2 marks]
Outline solution	[5 marks]
S0; derivation	[5 marks]
S1; derivation	[6 marks]
Proof of termination	[2 marks]
Total	[25 marks]

**Deliverables**

Please upload a typed PDF version of your solution. This is an individual assignment. Any evidence of plagiarism will result in a grade of zero for all students involved. Please include a signed declaration form with your submission (form can be found on the MOODLE page).

**Deadline Sunday 8<sup>th</sup> of December**