Derivation of Algorithms 2016

Partition Problem: Invariant Diagrams

CA worth 20%

Question

Formally specify and hence solve the following problem:

Given an array **f[0..N)**, **{N>0}** containing only the characters '∨', '∧' and '¬'. Sort the array using the correct logical operator order of precedence (see lecture notes). **NOTE:** only swap operations are allowed.

Your answer should include the following parts:

1. Formal specification
2. Diagram representing post condition
3. Invariant diagram showing snapshot during processing
4. Values for variables at **BEGINNING** of processing
5. Values of variables at the **END** of processing
6. Assignments for variables during the **MIDDLE** of processing
7. Termination proof for the above
8. Complete solution

Deliverables

Uploaded (MOODLE) PDF/Word or scanned document containing all solution parts.

Deadline

The deadline for this CA work is 18:00hrs on the 18th of March 2016.