CO141 - Reasoning About Programs

Prelude

The content discussed here is part of CO141 - Reasoning About Programs (Computing MEng); taught by Sophia Drossopoulou, and Mark Wheelhouse, in Imperial College London during the academic year 2018/19. The notes are written for my personal use, and have no guarantee of being correct (although I hope it is, for my own sake). This should be used in conjunction with the (extremely detailed) notes.

Material Order

These notes are primarily based off the notes on CATe, as they cover the lecture slides in great detail. This is the order in which they are uploaded (and I'd assume the order in which they are taught).

1. *Introduction and Motivation (full notes).pdf*
2. *Stylised Proofs (full notes).pdf*
3. *Induction over natural numbers (full notes).pdf*
4. *Induction over Haskell data structures (full notes).pdf*
5. *Induction over recursive relations and functions (full notes).pdf*
6. *Java - Program Specifications (full notes).pdf*
7. *Java - Conditional Branches (full notes).pdf*
8. *Java - Method Calls (full notes).pdf*
9. *Java - Recursion (full notes).pdf*
10. *Java - Iteration Informal (full notes).pdf*
11. *Java Reasoning - summary.pdf*
12. *Loop case study.pdf*
13. *Java - Iteration Formal (full notes).pdf*
14. *Case Studies - overview (full notes).pdf*
15. *Case Studies - Dutch Flag Problem (full notes).pdf*
16. *Quicksort (full notes).pdf*