Software System Verification and Validation

Topic Seminar 05 www.cs.ubbcluj.ro/~avescan

Seminar Objectives

Correctness & Bug advocacy

Topics

- Floyd, Hoare, Dijkstra
- Developing correct algorithms from specification
- ESCJAVA
- Bug advocacy - RIMGEN

Assignment 1 - 10-15 minutes - Discussion

Topics

- Correctness
- Lecture 6:
  - Floyd, Hoare, Dijkstra, - see Slides from Lecture 6 + in-class examples
  - Refinement rules - see file from Lecture 6 - Developying correct algorithms from specification.pdf
  - ESCJAVA – see file from Lecture 6 - JMLandESCJava2Installation.zip and DemoLecture06.zip

Assignment 2 – 30-40 minutes – Correctness

- Demonstrate correctness for a given algorithm using:
  - Floyd's method
  - Hoare rules
- Dijkstra
  - Wp
- Developing correct algorithms from specification
- ESCJAVA
  - jmlc/jmlrac – example discussion
  - escj – example discussion

Assignment 2 – 30-40 minutes – Correctness

Team work (requisite A4 papers, color pencils):

- 6 teams (TeamR, TeamI, TeamM, TeamG, TeamE, TeamN)
- 20 minutes work on Bug Advocacy – create a A4 paper information
  - What it is? When it is used? Why it's useful?
  - Description/Definition
  - Coding error vs. Design error
    - Essential/Important/Useful
  - Example for
    - Coding error
    - Design error
- 3 minutes - presentation for each team
- 10 minutes - debriefing

Assignment 3 – 5-10 minutes – Quiz (seminar content)