Advanced Programming (IT)

Dr. Simon Rogers (simon.rogers@glasgow.ac.uk, @sdrogers)

2nd December 2014

Formalities

Aims & timetable

Formalities

Assessment

- 70% exam
- 30% lab exam
- More details on both to be confirmed

Lectures and labs

- Lecture 1: Monday 3-4
  - Boyd Orr 513
- Lecture 2: Tuesday 11-12
  - Boyd Orr 513
- Lab: Wednesday 10-11
  - Boyd Orr level 10 - *Not* Ranking 108

Etiquette

- I will write example programs in the lectures
  - Feel free to bring laptops and do the same
- I'm very happy to address additional topics that you come across in your projects
- I'm also happy to answer lab questions in the lectures
  - Can't answer many questions in a one hour lab
- Ask questions any time. . . .
  - In class, labs or Moodle forums
- Will go through lab exercise in next lecture

Texts

- Big Java
  - I'm using 3rd ed.
  - I also have 5th Ed (early objects)
  - In recent editions, useful stuff is online only!
- Most things you need can be found in the online Java documents.
- I don't think it is essential to buy a book for this course

Contact

- simon.rogers@glasgow.ac.uk
- Room 306, Sir Alwyn Williams Building
- Moodle forums

Aims & timetable

Aims

- Build on semester 1 Java
- Develop a *deeper* understanding of programming (in Java)
- Design and write lots of code from scratch
- Be familiar with advanced concepts required in many applications:
  - Threading
  - Distributed systems
- Be familiar with the most common Design Patterns

Topics

- Semester 1 recap and Java basics [R]
- Concurrency [C]
- Distributed systems [D]
- Design patterns [DP]

Timetable (20 lectures, 10 labs)

- Course introduction (1 lecture)
- [R] Semester 1 recap and some Java Basics (2 lecture)
- [C] Introduction to concurrency and threads in Java [2 lectures]
- [C] Race conditions and synchronisation [1 lecture]
- [C] Blocks and locks [1 lecture]
- [C] Conditions [1 lecture]
- [C] Threads in Swing [2 lectures]
- [C] Class design exercise [1 lecture]
- [D] Introduction to distributed systems in Java [2 lectures]
- [D] Allowing for multiple connections [1 lecture]
- [D] Class design exercise [1 lecture]
- [DP] Introduction to design patterns [1 lecture]
- [DP] TBC
- [DP] TBC
- [DP] TBC
- Revision class [1 lecture]