Java and C# in depth

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Overview and organizational issues
Course Goals

- Illustrate the Java and C# languages
  - Focus on language features
    - E.g., type system, inheritance, genericity, ...
  - Also some additional topics
    - E.g., concurrent programming, GUI, persistence, ...
- Highlight the key differences and similarities between Java and C#
- Illustrate some dark corners
- Practice (exercise sessions & project)
Course Approach

- Not a comprehensive language tutorial
  - Combines two “in depth” courses into one
  - Focus on key features

- Not an object-oriented programming introduction

- A side by side presentation of the various features without forcing symmetry at all costs

- Importance of hands-on experience
  - During exercise sessions (case study)
  - On your own, working on the project
  - On you own, experimenting with topics not covered in class
Prerequisites

- Some programming experience
- Familiarity with basic object-oriented concepts
  - You don’t have to be an expert but need some previous exposure
  - We will do a very concise review of the key concepts before starting with Java and C#
- If you know already some Java or C#, some of the classes may be a bit of a repetition
Roadmap

- Language framework overview
- Basic types
- In-the-small features
- O-O features
  - encapsulation, inheritance, polymorphism, constructors, ...
  - genericity
  - exceptions
- Reflection mechanisms
- GUI programming
- Threads and concurrency
- Persistence
- Web services
- Java, C#, and Eiffel: an objective personal assessment (Bertrand Meyer)
Useful info

Lectures: Mondays, 13:15-15:00 (starting from today!) Room IFW A 36

Assistants
  - Group 1: Christian Estler (A-Fa), Room RZ F 21
  - Group 2: Max (Yu) Pei (Fr-Kon), Room IFW C 31
  - Group 3: Alexey Kolesnichenko and Julian Tschannen (Kos-Z), Room IFW A 36

Exercise sessions: Mondays, 15:15-16:00
  - Exercises will be corrected, not graded
  - Please go to your group according to your last name

Final exam: 27th May 2013
  - 50% grade: written exam (yes books/notes, no electronic devices)
  - 50% grade: project
Material and References

Slides
- Lecture slides
- Exercise sessions slides

Course webpage
- [http://se.inf.ethz.ch/courses/2013a_spring/JavaCSharp/](http://se.inf.ethz.ch/courses/2013a_spring/JavaCSharp/)
  - (with links to reading material)

Course forum
- Please sign up at piazza.com/ethz.ch/spring2013/252028400
- Q & A
- Project-related material
  - Will come later in the semester