ETH Zürich
Chair of Software Engineering

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
- Network programming
- Persistence
- Java, C#, and Eiffel: an objective personal assessment (Bertrand Meyer)

Useful info

Lectures:

- Mondays, 13:15-15:00 (starting from today!)
- Room IFW A36

Assistants

- Alexey Kolesnichenko
- Durica Nikolic
- Nadia Polikarpova

Exercise sessions:

- Mondays, 15:15-16:00
- Room IFW A 36
- Exercises will be corrected, not graded

Final exam:

- 26th May 2014
- 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/2014a_spring/JavaCSharp/
- (with links to reading material)

Course forum

- Please sign up at piazza.com/ethz.ch/spring2014/252028400l
- Q & A
- Project-related material
    - Will come later in the semester