

# "New Java course material and available pool of .ppt presentations"

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7th Workshop SEERE, Risan, 8-15  
September, 2007


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## AGENDA

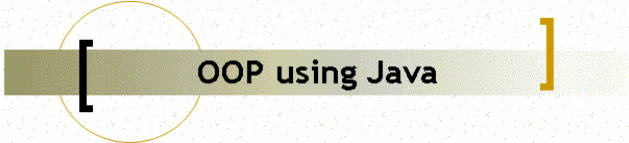
- 1. SubProject site – current state
2. Collected material from Berlin
3. Threads by Ioan, Timisoara
4. Created material from Novi Sad
5. Experiences and Students' Opinion
6. Further work (towards OOP2 course)

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# SubProject site – current state




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### Project Abstract

'Joint teaching materials on OOP using Java' is a subproject of the project that started as a 'Joint course on Software Engineering and Reverse Engineering' in 2001. The subproject started in 2004 and is devoted to creation of a joint teaching material (slides, examples, case studies, ...) for a number of [institutions](#) in Germany and south-eastern Europe. The subproject is supported by:




Stabilitätspakt für Südosteuropa  
Gefördert durch Deutschland  
Stability Pact for South Eastern Europe  
Sponsored by Germany

### Important documents

- [Template for slides](#) (protected)

### What's new

- Mar. 25, 2006 - 'Archive' significantly updated
- Sept. 13, 2004 - 'Workshop presentations' added
- Feb. 16, 2004 - Test version of the site



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## Collected material from Berlin

Berlin prepared English versions of some important topics

1. Basic Concepts of Object-Oriented Programming: Objects, Classes, Abstract Data Types
2. Objects and Classes: Additional Useful Features
3. Inheritance, Polymorphism, Dynamic Binding
4. Exception handling
5. Interfaces
6. Event handling
7. Threads & Processes
8. MouseMaze

With appropriate examples (sources).



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## Collected material from Novi Sad

- Serbian Java book
- First Edition Appeared in October 2005, 324 p.
- 200 copies, freely distributed to students



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## Collected material from Novi Sad

- Serbian Java book
- Second Edition Appeared in November 2006
- Price €10



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## Collected material from Novi Sad

- Differences between 2 editions
  - Sintactical errors
  - Minor text changes
  - Minor corrections in program codes



## Collected material from Novi Sad

- Topics, presentations for Java course prepared according to Serbian Java book
- Serbian and English versions of presentations – slides
- Further improvements are necessary – division of some topics in smaller units
- Current situation
  1. Program Structure in Java (S, E)
  2. Primitive Data Types (S, E)
  3. Statements (S, E)
  4. Referential data types (S, E in progress)
  5. Packages (S, E in progress)
  6. Exception handling (S, E in progress)
  7. Applets (S, E in progress)



## 1. Program Structure in Java

1.1 Java Program Basic Elements

1.2 Example of some small Java Program

1.3 Java Program Structure



## 2. Primitive Data Types

2.1 Importance of Data Types

2.2 Boolean Data Type

2.3 Integer Data Types

2.4 Real Data Types

2.5 Operators on Primitive Data Types



## 3. Statements

- 3.1 Block
- 3.2 Empty Statement
- 3.3 Expression Statement
- 3.4 Conditional Statements
- 3.5 Iteration Statements
- 3.6 Labelled Statement
- 3.7 `break` Statement
- 3.8 `continue` Statement
- 3.9 `return` Statement



## 4. Referential data types

- 4.1 Classes, Objects, Overloading, Static fields and methods  
Inheritance, Constructors, Polymorphism, Dynamic binding,  
Modifiers
- 4.2 Interfaces, Usage of interfaces, Multiple Inheritance,  
Interface Inheritance
- 4.3 Arrays, Arrays and Classes, Multidimensional Arrays
- 4.4 Operators on referential types



## 5. Packages

5.1 Packages and translation units

5.2 Packages and folders

5.3 Package names

5.4 Example



## 6. Exception handling

6.1 `try` statement, `throw` statement

6.2 User-defined Exception Handling

6.3 User-defined Generation of Exceptions



## 7. Applets

- 7.1 Getting started with applets, JFrame, JApplet classes, AWT, Swing
- 7.2 Drawing and Event Handling
- 7.3 Components, Containers, Layout Managers
- 7.4 Events and Listeners
- 7.5 Overview of Different Swing Components



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## Threads by Ioan, Timisoara

- Topic available as additional material for 2<sup>nd</sup> year students
- Can be used as introductory topic for 3<sup>rd</sup> year students (Operating Systems course)



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## Experiences and Students' Opinion

### About Presentations

#### ● PRO

- Lectures supported by more examples
- Replaces student notes
- Excellent for introduction or recapitulation

#### ● CONTRA

- Too boring lectures (students do not try to take notes, requires more interactive lectures)



## Experiences and Students' Opinion

### About Book

#### ● PRO

- Follows the course
- All aspects of Java, for PL course, in one book
- Replaces the too broad literature in English or badly translated books

#### ● CONTRA

- Too expensive (?!?)
- Too narrow (should we cover some other aspects of OOP?)



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## Further work

- Significant amount of Java topics is covered (most of the material will be available in English also)
- Presentations based on our book (in Serbian) contain a lot of examples (with code)
- Further improvements of all available material in future
- Other colleagues can add their English versions of presentations



## Towards OOP2 course

- Student interest in OOP inspired the Department officials to include new advanced OOP course into our new curriculum (firsts run of OOP2 is expected in 2 years)
- The core of the existing OOP course will become the obligatory OOP1 (basic OOP concepts)
- The advanced topics will be offered as an elective course OOP2 (to all students of Computer Science - starting from their 3<sup>rd</sup> semester)
- Another course, Programming Languages, can also be taken in order to cover other programming paradigms (functional, logical, etc.)



## Towards OOP2 course

- OOP2 will contain some advanced topics:
  - Collections
  - Network Programming
  - RMI
  - JDBC
  - Beans
  - Regular Expressions
  - Annotations
  - Servlets
  - JSP
  - JSF
  - AJAX
  - Struts
  - Ants
  - Hibernate
  - SWT
  - OO Design Patterns
  - ...