

Lecture 2: Java & Javadoc

CS 62

Fall 2017

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Piazza

- Will soon send invitations. Check your email!

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Documentation

- Important for code maintainability
 - This matters even for 1st week assignments
- Critical when working on a team
- Create documentation first– this is design work

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JavaDoc

- Stylized form of comments, w/tools to extract
- Common tags:
 - for class:
 - `@author` author name
 - `@version` date
 - for method:
 - `@param` param name and description
 - `@return` value returned, if any
 - `@throws` description of any exceptions thrown

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Requirements

- Class header must have `@author`, `@version`
- Method header must include:
 - Description of what (not how) it does
 - `@param` line for each parameter
 - `@return` if method returns a value

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Packages

- Use them!
- Package name == folder name
- Helps organize large projects
- When writing programs, put all classes/ interfaces in packages:
 - `package assignment1;` ...

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Generics

- Can write classes parameterized by types
- See **Association** class
 - **Association** is part of Bailey structure5 library.
 - See documentation & code on web site!
- Can only instantiate type parameters by interfaces or classes, not primitive types
- "Wrapper" versions of primitive types must be used instead of primitive types:
 - `int` → `Integer`, `double` → `Double`, `boolean` → `Boolean`

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Text Input

- **Scanner** class
 - Constructor: `myScanner = new Scanner(System.in);`
 - can use file instead of `System.in`
 - `new Scanner(new File("filename"))`
 - Read values:
 - `myScanner.nextInt()` -- returns an `int`
 - `myScanner.nextDouble()` -- returns a `double`
 - `myScanner.nextLine()` -- returns `String` -- to end of line
 - see documentation for more

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Random Number Generator

- class **Random** in **java.util** package w/ method
 - **int nextInt(int n)** -- returns random k s.t. $0 \leq k < n$
 - See bottom of pg 30 in text.
- Create **Random** object once:
 - **Random rng = new Random();**
- send **nextInt** many times:
 - **int r = rng.nextInt(10);**
 - Repeat this step, not the creation of a new object
- See **LottoHelper** example.

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