

Coding Style and Documentation Guidelines

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Naming Convention

- ▶ Constants should use all uppercase letters, with an underscore between words
 - E.g., MAX_INT, UPPER_LIMIT
- ▶ Variables, methods, and packages should use lowercase letters (use uppercase letters to start second and subsequent words)
 - E.g., length, indexOf, getName, type
- ▶ Classes should capitalize the first letter of each word
 - E.g., String, Integer, StringBuffer, TreeMap

Statement Layout

- ▶ Write only one statement per line
- ▶ Wrap lines longer than 80 characters
- ▶ Leave exactly one space around operators
 - E.g., $x = a + 5;$
- ▶ Indent each block one tab (approx. 4 spaces) relative to its braces

Braces

- ▶ Always use braces in control structures, even if the block contains only one line
- ▶ Vertically align corresponding opening and closing braces

Magic Numbers

- ▶ Avoid the use of hard-coded numeric literals (a.k.a., “Magic Numbers”)
- ▶ Exceptions:
 - Declaring a constant in a “final” statement
 - Using the literal zero, +/- one, or +/- two

Full Style Guide with Examples

www.eecs.yorku.ca/teaching/docs/type/style.pdf

Documentation

- ▶ Using in-code comments as documentation has the following benefits:
 - Easier (more concise) to read than code
 - Moves with the code
 - Easier to reference
 - Easier to maintain (update/correct)
 - Can explain design choices, rejected techniques, reasons for code modifications

Layouts

- ▶ **Single-Line Comments**

```
// This is a single-line comment.
```

- ▶ **Multi-Line Comments**

```
/* This comment can persist  
over multiple lines as needed. */
```


JavaDoc Example

```
/**
 * This function takes as its argument an integer C,
 * and returns the smallest integer that is a factor
 * of C, other than 1.
 *
 * @param C An integer to factor.
 * @pre. C must be greater than 0.
 * @return The smallest factor of C.
 */
public int smallestFactor(int C)
{
    ...
}
```

JavaDoc Example (2)

smallestFactor

```
public static int smallestFactor(int C)
```

This function takes as its argument an integer C, and it returns the smallest integer that is a factor of C, other than 1.

Parameters:

C - An integer to factor.

Returns:

The smallest factor of C.

Precondition:

C must be greater than 0.

JavaDoc Template for 1030

```
/**
 * Description about the method
 *
 * @param paramName ParamDescription
 * @pre. PreconditionDescription
 * @return ReturnDescription
 */
public rtnType methodName(paramType paramName)
{
    ...
}
```

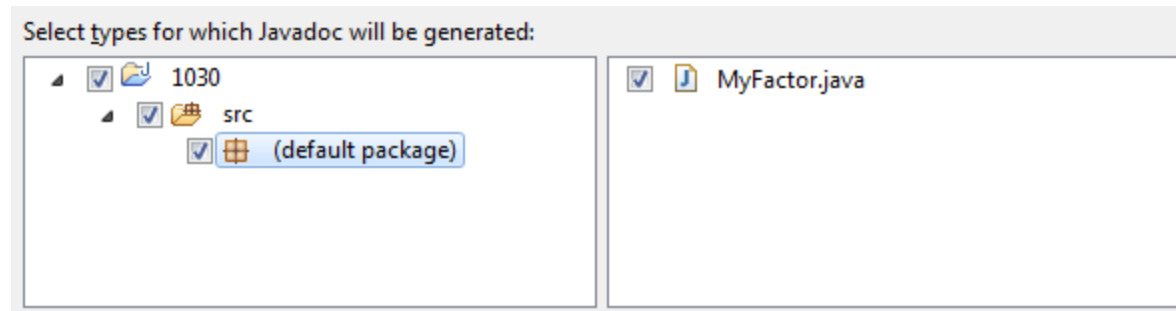
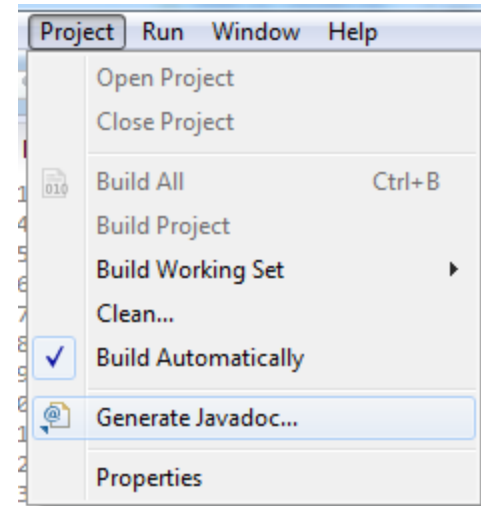
Generating JavaDoc (Terminal)

- ▶ Navigate to the src directory containing your .java files and enter the following command:

```
javadoc -d ../doc -tag pre.:a:"Precondition: " *.java
```

Generating Javadoc (Eclipse)

- ▶ Project > Generate Javadoc
- ▶ Select your class (e.g., MyFactor.java)
- ▶ Click “Next” twice



Generating JavaDoc (Eclipse) (2)

- ▶ Enter the JavaDoc options for the custom “pre” tag:

Extra Javadoc options (path names with white spaces must be enclosed in quotes):

```
-tag pre::a:"Precondition: "
```

- ▶ Click “Finish”
- ▶ Open the html page (MyFactor.html) in the newly created doc directory