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Become a Java Craftsman in 70 Examples

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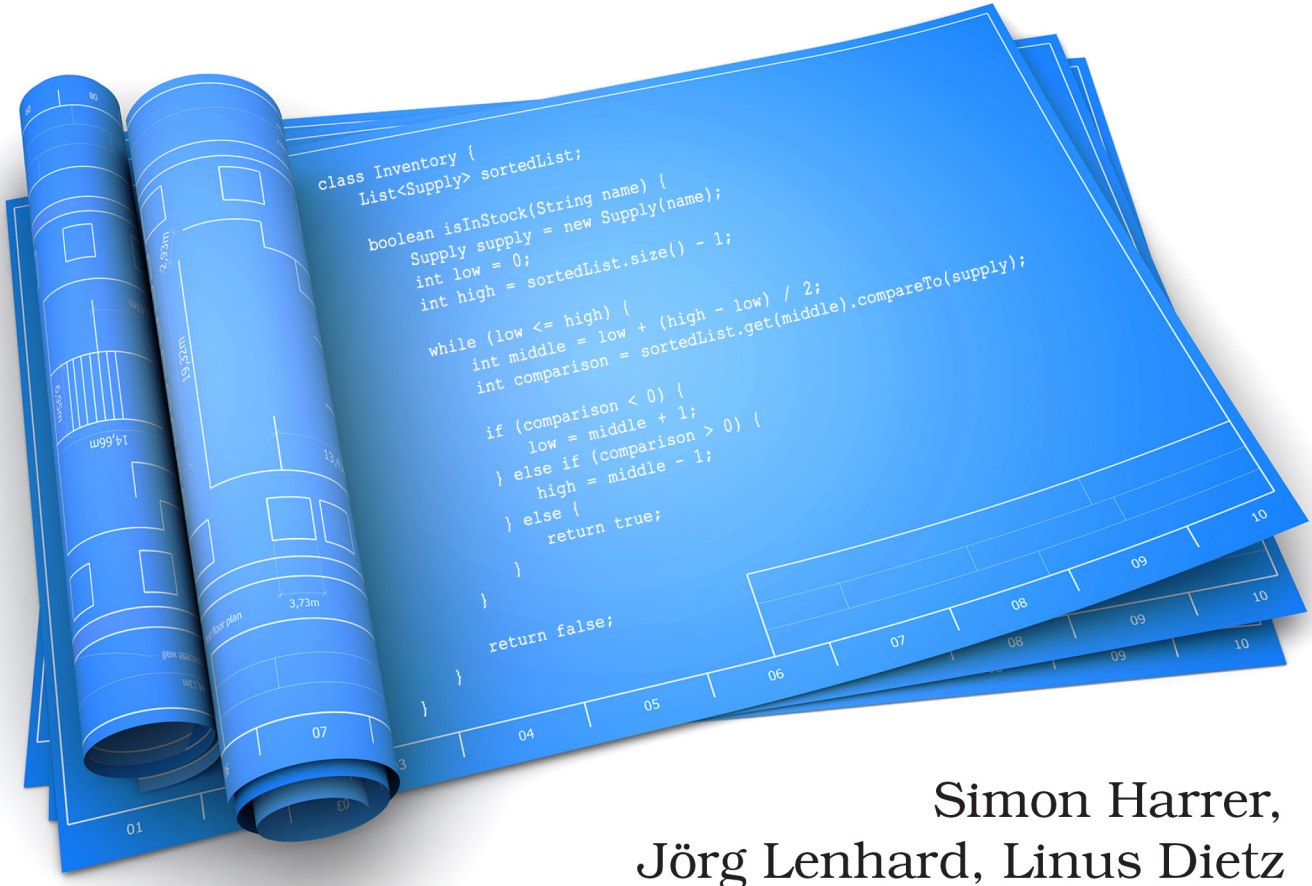

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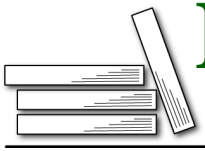

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Document Using Examples

```
class Supply {

    /**
     * The code universally identifies a supply.
     *
     * It follows a strict format, beginning with an S (for supply), followed
     * by a five digit inventory number. Next comes a backslash that
     * separates the country code from the preceding inventory number. This
     * country code must be exactly two capital letters standing for one of
     * the participating nations (US, EU, RU, CN). After that follows a dot
     * and the actual name of the supply in lowercase letters.
     */
    final static Pattern CODE =
            Pattern.compile("^S\\d{5}\\\\(US|EU|RU|CN)\\.[a-z]+$");
}
```

Some programming constructs are very powerful, but also very complex. Regular expressions fall into this category. You should document complex constructs in a way that makes them easier to understand.

Above, you see a lengthy regular expression. Its name, `CODE`, doesn't help you to understand what it's good for, but there's also a lengthy comment.

This might seem like a good solution. After all, at least there's a comment and not just the code. The comment describes the sort of strings that the regex will match, and the code even takes care that the regex is compiled exactly once.

The problem isn't that the documentation is wrong (it's not). The problem is that it's less precise than it should be, and it only duplicates what a skilled developer can already read from the regex code itself.

"Lead by example" is always good advice. This comes in very handy for documenting a regex.

Comment Mode

You can also add comments within your regular expressions like this: `B[1-9]# Beta Release Numbers`. For that to work, you need to pass in the `Pattern.COMMENTS` flag. Those comments can help, especially for long and complex regular expressions, but we think that examples are even more helpful.

Have a look at how we can improve the documentation:

```
class Supply {

    /**
     * The expression universally identifies a supply code.
     *
     * Format: "S<inventory-number>\<COUNTRY-CODE>.<name>"
     *
     * Valid examples: "S12345\US.pasta", "S08342\CN.wrench",
     * "S88888\EU.laptop", "S12233\RU.brush"
     *
     * Invalid examples:
     * "R12345\RU.fuel"      (Resource, not supply)
     * "S1234\US.light"      (Need five digits)
     * "S01234\AI.coconut"   (Wrong country code. Use US, EU, RU, or CN)
     * " S88888\EU.laptop "  (Trailing whitespaces)
    */
    final static Pattern SUPPLY_CODE =
            Pattern.compile("^S\\d{5}\\\\(US|EU|RU|CN)\\.[a-z]+$");
}
```

The comment above is a little more lengthy, but it's also more structured, and it provides a lot more information. In a nutshell, it describes the format in semi-natural language, and it gives several valid and invalid examples.

The starting sentence is the same as before, but the `Format:` part condenses the content of the prior example into a single line. This line's just a variation of the code, but with the actual semantics instead of regex syntax. `<inventory-number>` is just so much more understandable than `\\d{5}`. The parts that are just syntax, such as `\` or `.`, don't need a further explanation.

Next, there are concrete examples. Usually, a valid example let's you understand the expression within a second. That's not something that the code or a lengthy explanation does. The invalid examples are a good quick reference when something goes wrong.

Sure, examples don't usually cover all possible cases. But they're good enough in 90% of all cases, and you'll find them so much easier to understand. Plus, if you want you can use the example in unit tests!

Last, we've also taken the opportunity to give the variable a more meaningful name, `SUPPLY_CODE`.