Code Conventions

von Patrick Rauber, bearbeitet von Manuel Leuenberger

Overview

Why conventions?

Naming Rules

- Pitfalls

Naming Conventions

- Variables
- Constants
- Methods
- Classes

Good Practice

- Naming
- Comments
- Formatting

Why conventions?

Why conventions?

That's why!

```
public class A{public int a; public int b; public final double c
= 7.6; public static void calc(){A e = new A(); e.a = 100; e.b =
200; double f = (e.a + e.b) * (e.c/100) + e.a + e.b;
System.out.println(f);}}
```

Naming Rules

Naming Rules

<identifier>:=(_ | [a-zA-Z])+(_ | [a-zA-Z] | [0-9])*

Every identifier starts with at least one letter followed by as many letters or numbers as you want. Underscores (_) are considered letters (please use it only for constants).

Naming Rules - Pitfalls

reserved keywords in Java

class, new, private, extends, ...

Java is case-sensitive

hello   HELLO   Hello

Naming Rules - Pitfalls

identifiers must be unique in scope

```
class MyClass {
   int a = 1;
   double a = 0.1; // not o.k.
   double b( int a ) { return 0.1; } // o.k.
}
```

Naming Conventions

Naming Conventions - Variables

- begin with lower-case letter
- camelCaseForComposedNames
- nouns for variable names

Naming Conventions - Variables

```
int answerToLifeTheUniverseAndEverything;

String lastName;

ArrayList books;
```

Naming Conventions - Constants

- UPPERCASE_LETTERS_ONLY
- '_' as separators
- nouns for constant names

Naming Conventions - Constants

```
final int AMOUNT = 2;

final double TWO_PI = 2 * Math.PI;
```

Naming Conventions - Methods

- same as variables
- camelCase
- begin with lower-case letter
- verbs as method names

Naming Conventions - Methods

```
public String translate();

public void makeMeHappy();

private boolean isReady();
```

Naming Conventions - Classes

- begin with UPPERCASE letter
- CamelCase
- file name must be the same as class name
- nouns as class names

Naming Conventions - Classes

```
public class Pizza;

public class PizzaShop;

public class Library;
```

Good Practice

Good Practice – Naming

- no abbreviations

- naming:
  - class: **noun**, what is it?
  - method: **verb**, what does it do?
  - variable: **noun**, what does it stand for?

Good Practice – Comments

Comments should be added to:

- every class
- every method
- every class variable
- important variables
- complex code

Good Practice – Formatting

- 4 spaces (or 1 tab) for every indentation
- lines with at most 80 characters (printer friendly)
- be consistent!

Without conventions

```
public class A{public int a; public int b; public final double c
= 7.6; public static void calc(){A e = new A(); e.a = 100; e.b =
200; double f = (e.a + e.b) * (e.c/100) + e.a + e.b;
System.out.println(f);}}
```

With conventions

```
/**
 * TaxCalculator.java
 * author: patrik rauber
 * matrikel number: 06124093
 *
 * a calculator. calculates the tax to pay and adds it to the sum
 * of two prices.
 */
public class TaxCalculator extends Calculator {

    public int price1; // the first price in dollars
    public int price2; // the second price in dollars
    public final double TAX_RATE = 7.6; // the tax rate

    /** adds two values together, adds the tax, prints it out */
    public static void calculate(){
        TaxCalculator calculator = new TaxCalculator();
        calculator.price1 = 100;
        calculator.price2 = 200;

        // add the two prices together and add the tax
        double outcome = (calculator.price1 + calculator.price2)
            * (calculator.TAX_RATE/100)
            + calculator.price1 + calculator.price2;
        System.out.println(outcome);
    }

}
```

References

http://www.oracle.com/technetwork/java/codeconv-138413.html

A quote to remember

„Always code as if the guy who ends up maintaining your code will be a violent psychopath who knows where you live.“

Rick Osborne

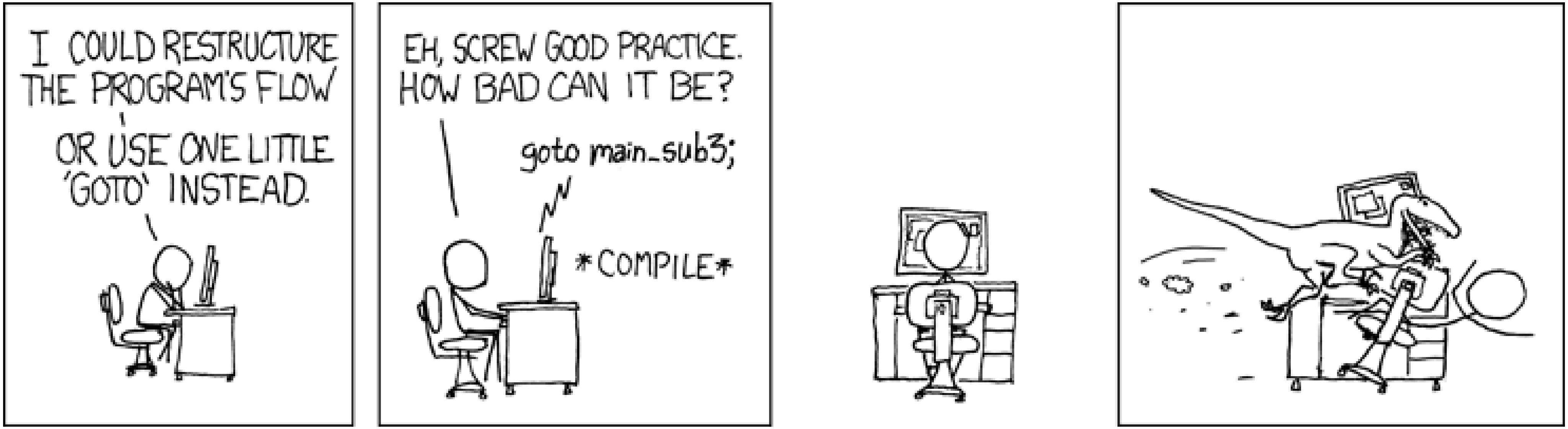
A quote to remember

Be aware – I know where you live!

Questions

?

Finishing move


I COULD RESTRUCTURE THE PROGRAM'S FLOW
OR USE ONE LITTLE 'GOTO' INSTEAD.
EH, SCREW GOOD PRACTICE. HOW BAD CAN IT BE?
goto main_sub3;
COMPILE

xkcd.com