Professional Issues II
Unit 1: code commenting
Discussion of Lab 1

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Concepts & Constructs

Definition of the terms

Concept:

an abstract idea; in Philosophy: an idea or mental image which corresponds to some distinct entity or class of entities. From Latin conceptum 'something conceived'.

Construct:

a physical thing which is deliberately built or formed. From Latin construct 'heaped together, built'.

(from the Oxford English Dictionary)

In the context of "documentary comments"

Tools offer constructs to realise a concepts, e.g.,

- Javadoc offers the @author tag to realise the concept of the documentary "author" comment.

- However, Javadoc fails to offer a construct to support the concept of the documentary "version history" comment.

In the context of "commenting method declarations"

Tools offer constructs to realise a concepts, e.g.,

Javadoc supports

- to write a "narrative" concisely describing what a method does;

- to explain the parameters with the @param tag;

- to provide a formula / a text how the result is computed out of the parameters with @return tag.

However, Javadoc fails to offer a construct to support commenting if method

- is referentially transparent.

- has side effects.

Naturally, the excellent student would develop some HTML formatting scheme in order support these concepts.

"Referentially transparent" only for non-void methods

As the notion "referentially transparent" concerns the return value of a method, it only makes sense to consider it for methods with a return type $\neq$ void.

Tools for programming

Seen in the lab

- Console – comes often with a
  - command line interpreter (shell – in Windows: PowerShell); origin of scripting languages such as Python.

```bash
#!/bin/bash
T1="foo"
T2="bar"
if [ "$T1" = "$T2" ]; then
   echo expression evaluated as true
else
   echo expression evaluated as false
fi
```

- Editor: Notepad++

- Java Compiler; Java virtual machine; Javadoc

IDE

An integrated development environment (IDE) is a software application that provides comprehensive facilities for software development. An IDE normally consists of a:

- Source code editor
- Compiler and/or interpreter
- Build automation tools
- Debugger

(freely quoted from Wikipedia).

The IDE in future labs: Eclipse

Multi-language software development platform comprising an IDE and a plug-in system to extend it. It is written primarily in Java and is used to develop applications in this language and, by means of the various plug-ins, in other languages as well - C/C++, Cobol, Python, Perl, PHP and more. (wikipedia)

Useful links to get started:
`http://open.ncsu.edu/se/tutorials/eclipse/`
`http://www.eclipse.org/resources/?category=Getting%20Started`

What you should have learned from this reflection

Definitions

- IDE

What you should be able to exlain in your own words

You should be able to name and explain various tools for software developement, including

- Terminal

- Editor

- Compiler

- Javadoc

- IDE