Princípy tvorby softvéru
Implementation

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Implementation

V rámci kurzu sme už pokryli veľa vecí, ktoré spadajú aj do fázy implementácie

- Dizajnové princípy
- DRY, Rule of 3
- Code smells, Refaktorizácie
- Písanie testov
- . . .

Coding conventions

Code conventions are important to programmers for a number of reasons (Wikipedia):

- 40%–80% of the lifetime cost of a piece of software goes to maintenance.
- Hardly any software is maintained for its whole life by the original author.
- Code conventions improve the readability of the software, allowing engineers to understand new code more quickly and thoroughly.
- If you ship your source code as a product, you need to make sure it is as well packaged and clean as any other product you create.

Coding conventions

coding konvencie možno prispôsobiť, upraviť podľa špecifických potrieb:

- Konvencie pre programovací jazyk
- Konvencie danej organizácie
- Konvencie pre projekt
- Konvencie pre komponent
- Konvencie pre unit

Coding conventions

- Comment conventions
- Indent style conventions
- Line length conventions
- Naming conventions
- Programming practices
- Programming principles
- Programming style conventions

Comment conventions

- Používať Docstringy (Python)/Javadocy, alebo nie?
- Ktoré komentáre sú povinné
- /* ... */ vs //   (C, C++)
- ...

Indent style conventions

- medzery alebo taby?
- koľko medzier?
- ako rozdeliť dlhé riadky (aritmetické výrazy, zoznamy parametrov, . . .)
- Kam dať { } (C++), Indentation style
- . . .

Line length conventions

79, 80, 99, 100, 180 (Mono), unlimited (Go), . . .

- Prehľad

Naming conventions

Čo?

- premenná (lokálna/globálna), namespace, konštanta, package, trieda, objekt, metóda, funkcia, procedúra, . . .

Ako?

- dĺžka
- veľke/male písmená
- veľke/male prvé písmeno
- skracovať dlhé názvy, spájať slová
- oddeľovanie slov:
  - CamelCase
  - snake_case
  - kebab-case

Naming conventions Java

- triedy - UpperCamelCase
- metódy - lowerCamelCase
- premenné - lowerCamelCase
- konštanty - UPPER_CASE_SEPARATED_BY_UNDERSCORES

Naming conventions

Brevity in programming could be in part attributed to (Wikipedia):

- Early linkers which required variable names to be restricted to 6 characters to save memory. . . .
- Code editors lacking autocomplete
- Low-resolution monitors with limited line length (e.g. only 80 characters)
- Much of computer science originating from mathematics, where variable names are traditionally only a single letter.

Example - Python

- PEP 8,
- PEP 20 (Examples, More examples)

Example - C++, C

- Google C++ coding standards
- SEI CERT C++ Coding Standard - pravidla (Example)

Linters

- pylint
- Cpplint

Zdroje

- Coding conventions - wikipedia
- Naming conventions - wikipedia
- Python - PEP 8
- Python - PEP 20
- pylint
- Google C++ coding standards
- Cpplint
- SEI CERT C++ Coding Standard - pravidla