C++ cvičení

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faltin@ksi.mff.cuni.cz

i++ vs. ++I (1/3)

1. for(int i = 0; i < max; ++i) { do_work(); }
2. for(int i = 0; i < max; i++) { do_work(); }

i++ vs. ++i (2/3)

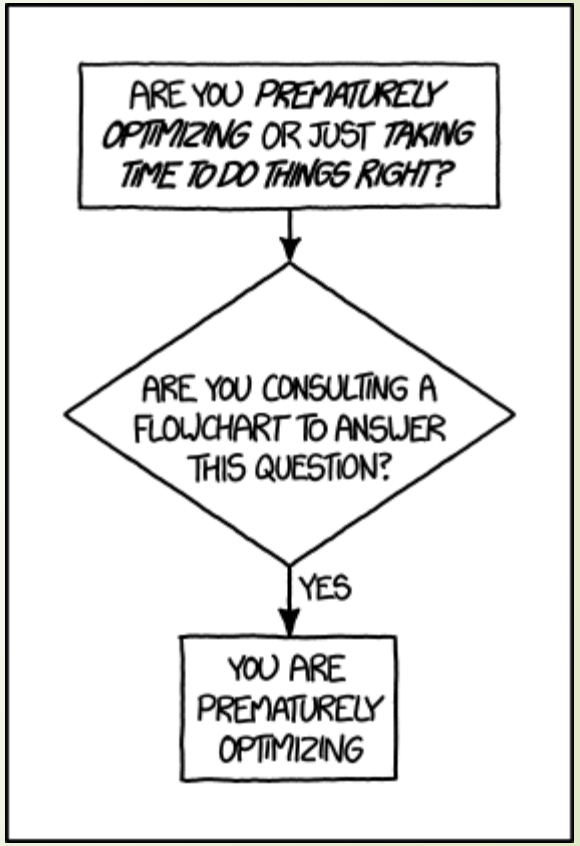
```
T& T::operator++() {  // ++i
  ++data;
  return *this;
}

T T::operator++(int) { // i++
  T copy(*this);
  ++data;
  return copy;
}
```

1. for(int i = 0; i < max; ++i) { do_work(); }
2. for(int i = 0; i < max; i++) { do_work(); }

i++ vs. ++i (3/3)

- Premature optimization is the root of all evil! -- Knuth
- Benchmark first!



Source: https://xkcd.com/1691/

Deklarace/definice

my_class.hpp

```
#ifndef MY_CLASS_HPP
#define MY_CLASS_HPP

void fn(int x);

class my_class {
public:
  my_class();
  int exec(int x);

private:
  double d;
};

#endif // MY_CLASS_HPP
```

my_class.cpp

```
#include “my_class.hpp”
#include <iostream>

void fn(int x) {
  cout << “fn()”;
}

my_class::my_class() : d(1.0) {
  cout << “ctor”;
}

int my_class::exec(int x) {
  for(int i=0; i < x; ++i) { … }
}
```

Kruhová závislost

```
class one; // declaration
class two {
  shared_ptr<one> ptr; // Uses class one.
};

class one : public two {}; // Uses class two.
```

enum

```
enum class Colors {
  BLUE, RED, YELLOW, GREEN
}
```

Úkoly

1. Úkol 3 z minula + třída Complex
   - **poslat mailem do dnešní půlnoci**
2. Piškvorky pro 2 hráče
   - Třídy, OOP, vector<T>

Úkol 3 (z minula)

```
void fn_copy(C c) {}
void fn_ref(const C &c) {}

// Print 1, 2, …, 20
int main() {
  cout << “1”;
  C c;
  cout << “5”;
  fn_copy(c);
  cout << “10”;
  fn_ref(c);
  cout << “15”;
}
```

- Vytvoř třídu/strukturu C (ostatní musí zůstat stejné)