

Notes on homework

- Think! - Домашно?
- Why upload files using user interface
- No comments in bulgarian
- You should have looked up enums
- There shouldn't have been any commented out code
- Prefer circle literals
- Git mv

Efficiency

Type of Efficiency

- RAM
- ROM
- CPU
- DB queries
- Disk reads/writes/seeks

“premature optimization is the root of all evil”

Donald Knuth

“The real problem is that programmers have spent far too much time worrying about efficiency in the wrong places and at the wrong times; premature optimization is the root of all evil (or at least most of it) in programming.”

Donald Knuth

First we think and then measure

- Is it really slow
 - We measure 28s. Is that fast or slow?
- Which part is slow
- The 20/80 rule

- timeit
- profile and cProfile

Array of Objects vs Object of Arrays

What we do is experimentation and statistical testing

- Control independent variables
- Independent and paired t-tests

Profile demo

Python specific tips:

- While 1
- `@functools.lru_cache(maxsize=128)`
- List comprehension
- Multiple assignment
- String concatenation