[Data Structs]

Schedule:
- Midterm: week 4, contributes 25% grade
- Exam: week 8, Tuesday, closed-book

Contact:
- f.i.van.raamsdonk@vu.nl, course in subject
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- Some problems can't be solved, some can, some efficiently. efficiency := speed, power, security, etc.

- example algorithm - Euclid's greatest common divisor
  - two non-negative numbers, $a \geq b$
    - if $b = 0$, return a
    - if $b \neq 0$, then gcd of b and $(a \bmod b)$

- important aspects
  - correctness: does it output what it should?
  - termination: does it eventually produce out?
  - efficiency/complexity: how much time/mem does it use?

- complexity as a function of input
  - time: how long does it take?
  - space: how much space does it use?
  - counting elementary steps, if n is size of input, a function of n is the number of steps
  - approach: worst-case asymptotic time complexity
    function $T(n)$ giving time complexity for ipt size n
    want to know what happens to T as n gets very large