

||  
7 centralized

||  
theory

distributed

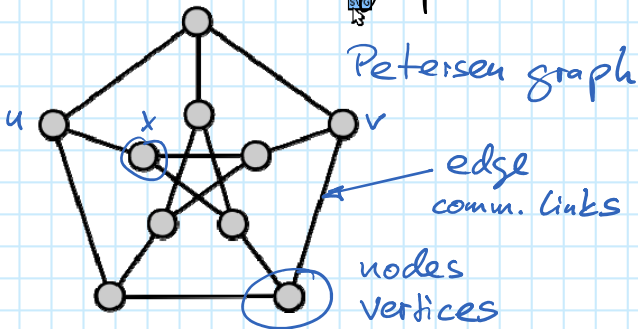
map reduce, cloud storage, GPU progr., Internet, P2P systems, sensor networks, ad hoc networks, multi-core

⇒ variety of models → go through them by examples

Organisation

- one topic per week
- lect. 10-12, ex. 12-2
- ex. sheet every week  
↳ no formal requirements

Networks ⇒ graphs



$G = (V, E)$

↑ set of nodes  
↑ set of edges

$n := |V|, m := |E|$

distance: length of shortest path  
diameter: largest dist.

diam  $D := \max_{u,v \in V} d(u,v)$

Basic assumption:

nodes have unique identifiers (IDs)

IDs from  $\mathbb{N}$

⇒ typically: size of IDs is  $O(\log n)$

$ID \leq n^{O(1)}$

sometimes: IDs from  $1, \dots, n$