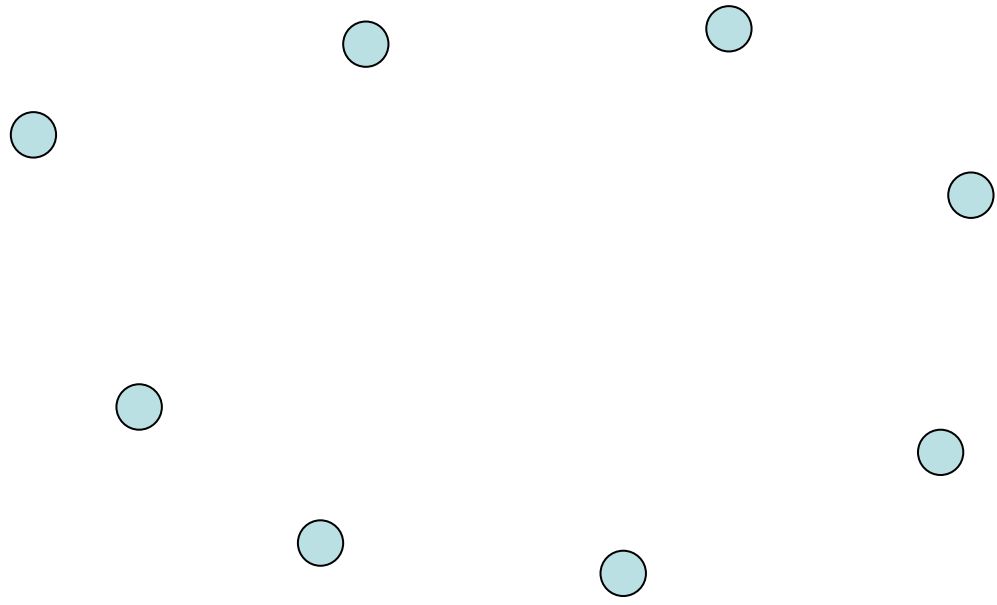


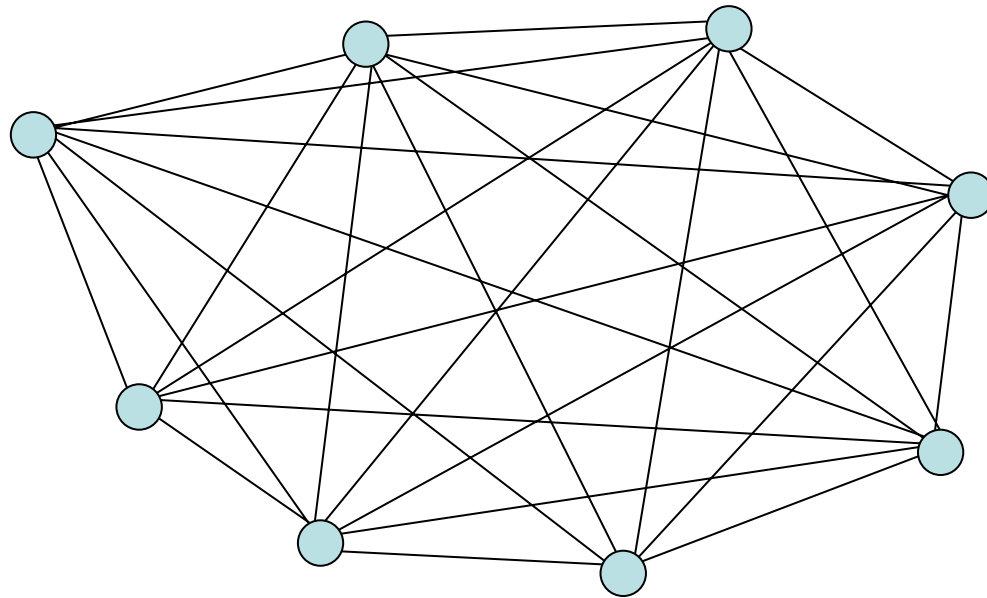
Structural programming for parallel algorithms

About abstraction hierarchies and data waves

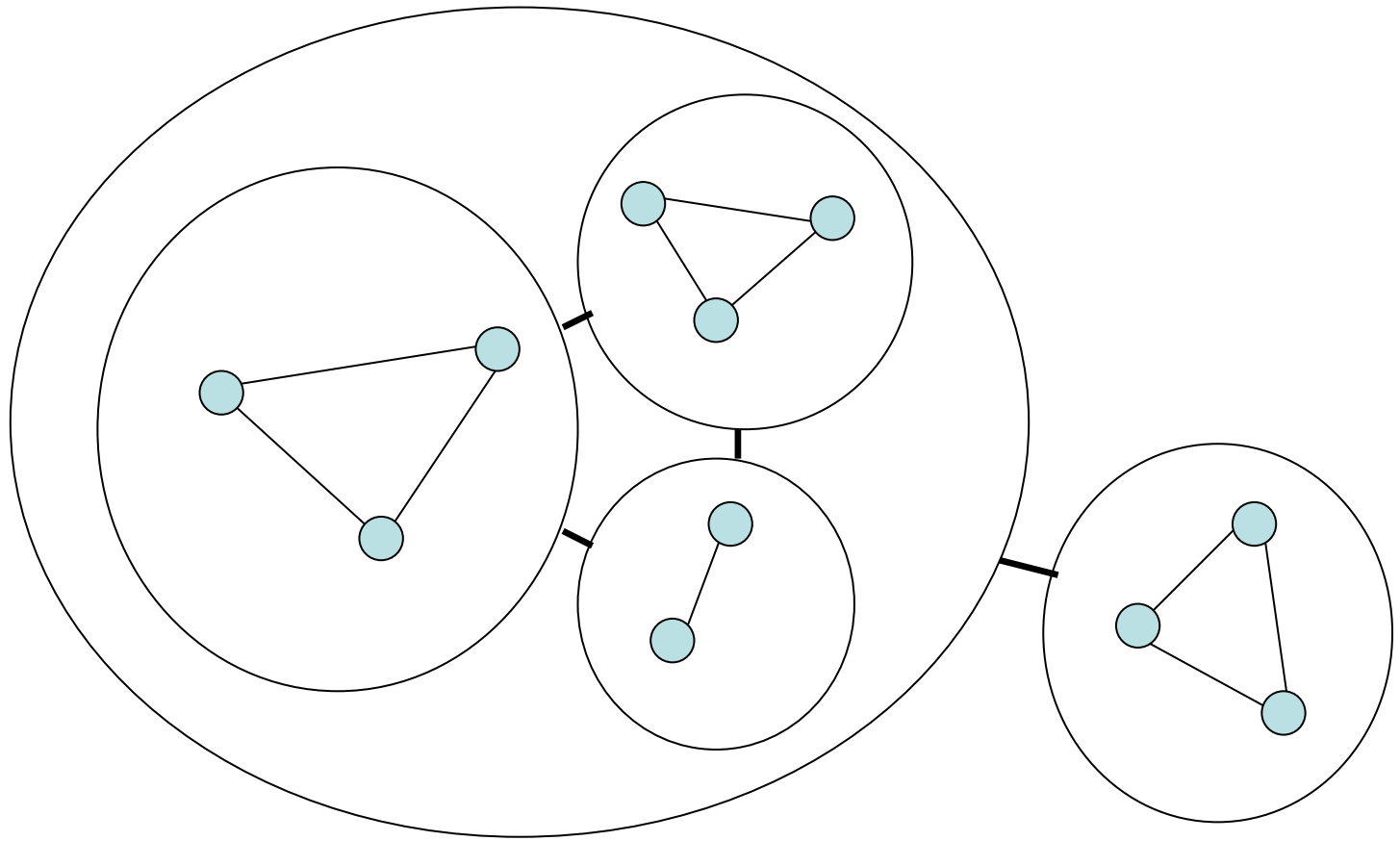
Tarmo Kaldma,
Estonian Meteorological and
Hydrological Institute



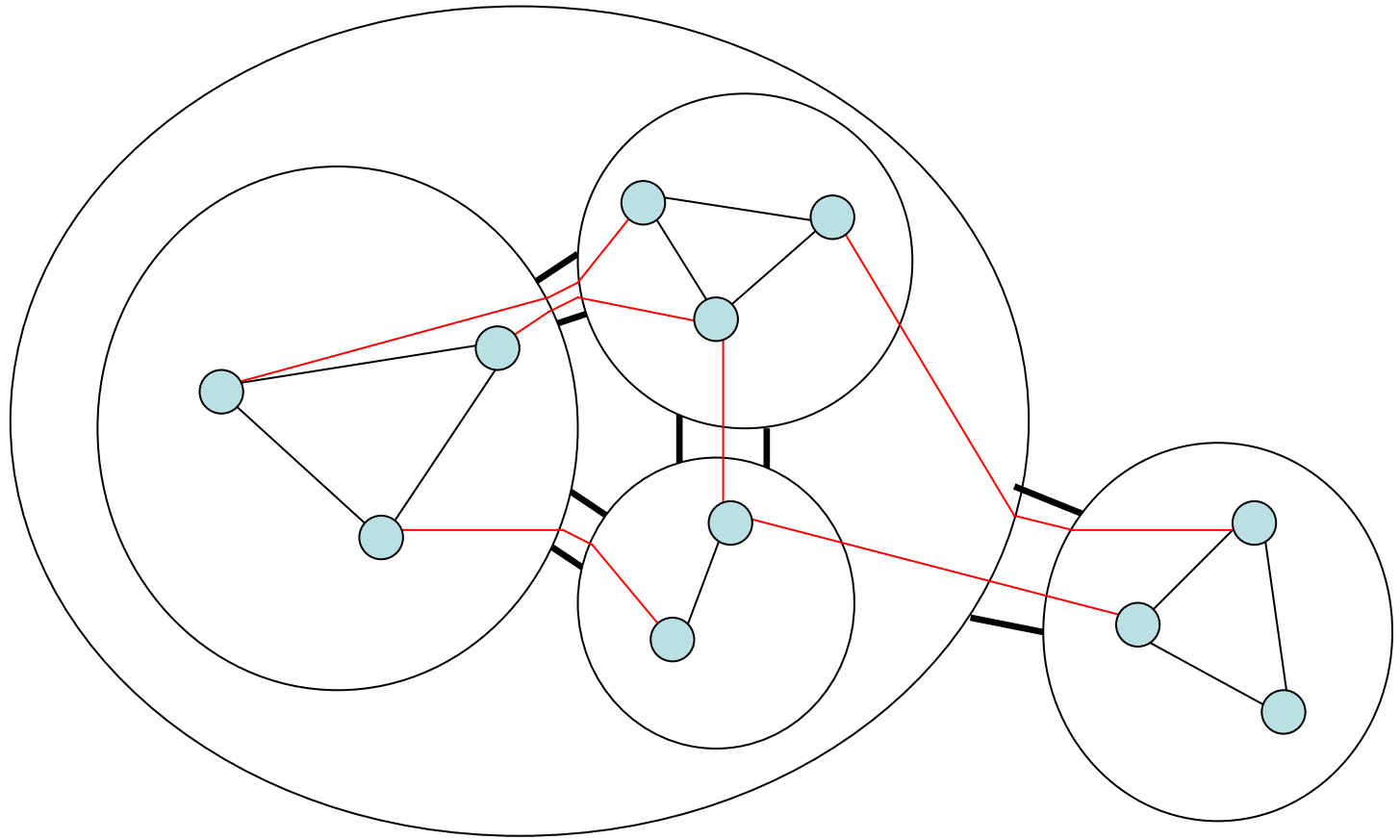
Simple system (objects)



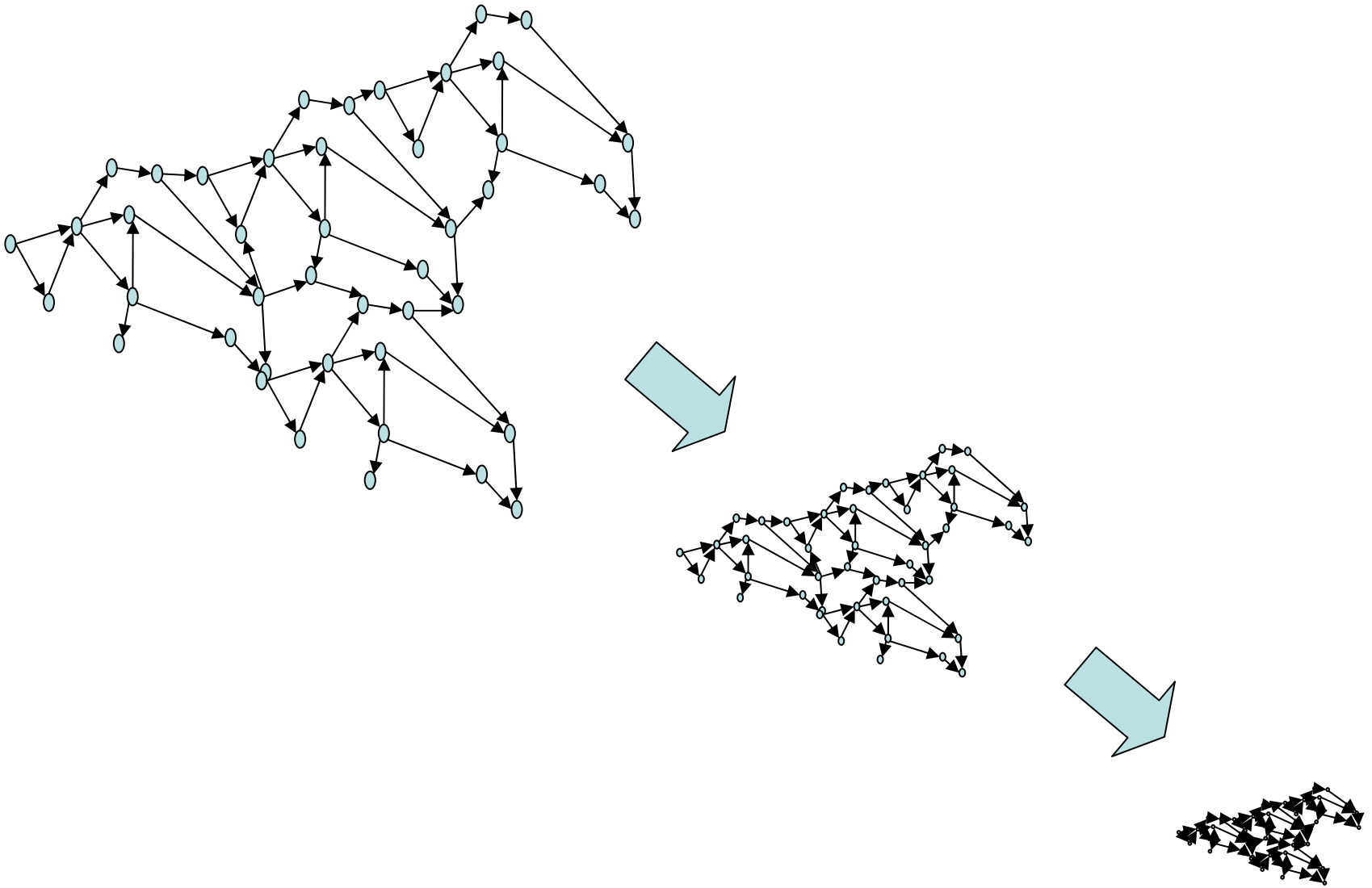
Simple? system (objects + relations)



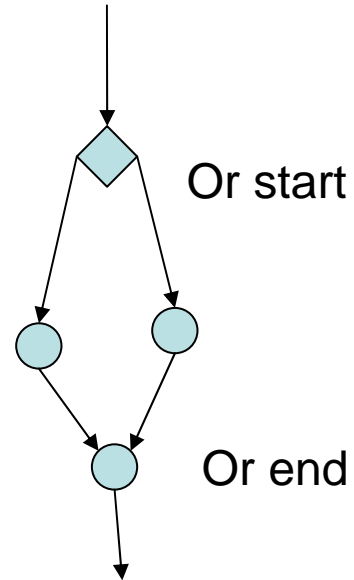
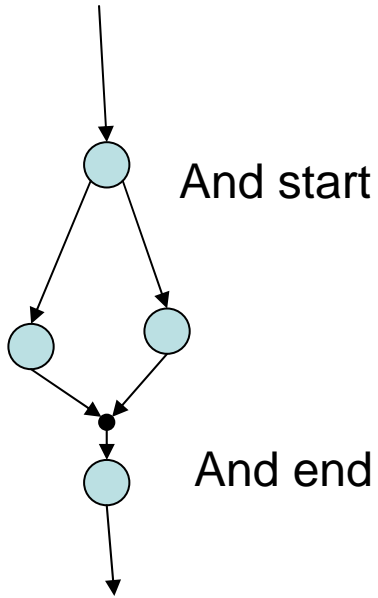
The abstraction hierarchy



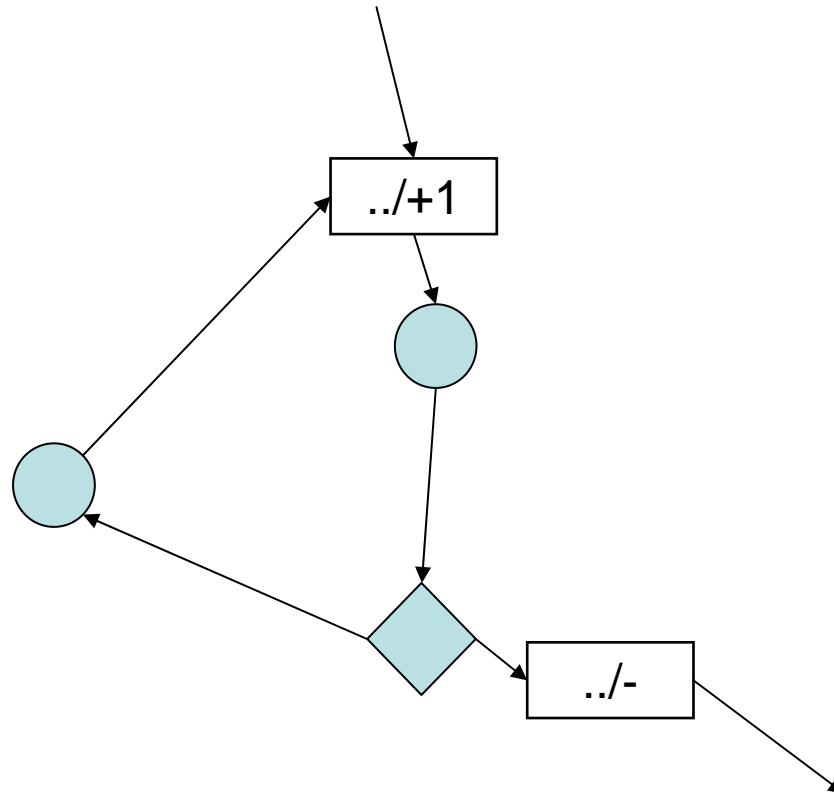
Connections abstraction (data structures)



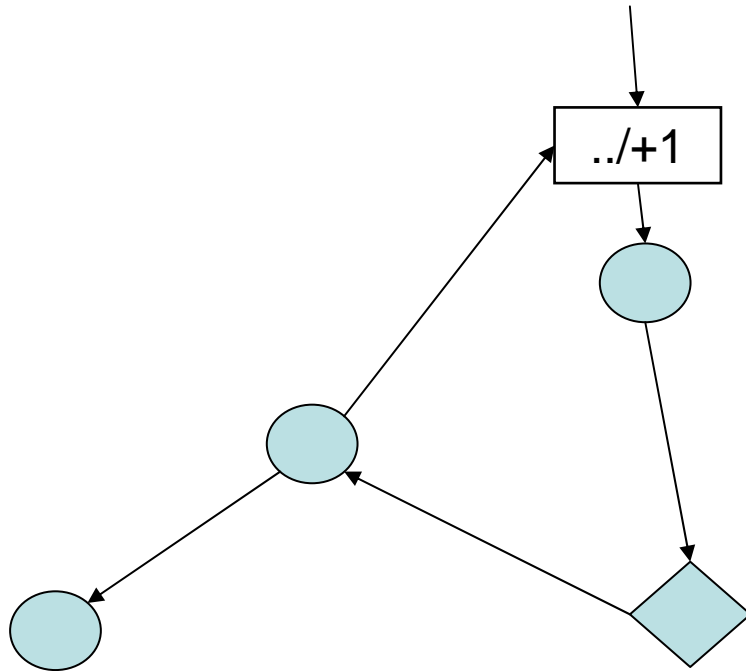
Forest behind trees



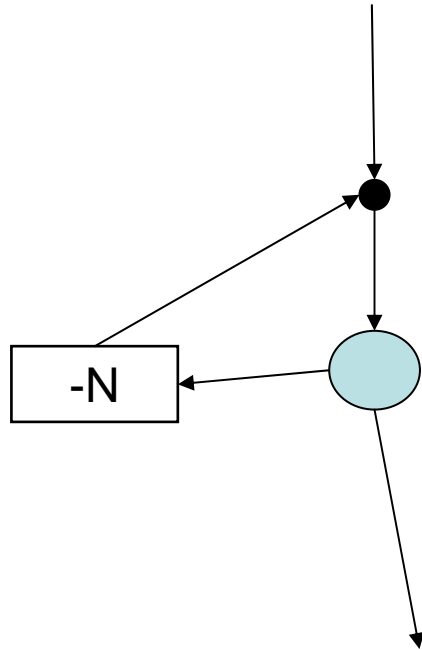
Dynamic (flow operations)



Waves in the loop



Loop as waves generator



Memory in the system

Conclusions

- System is treated as continuous
- Data is flowing through system as waves
- Waves are identified by names that are labels on data elements
- Wave names are nothing else than loop counters
- There is no other synchronisation than by wave names
- Memory in the system is nothing else than interaction between waves from different generations
- Any dataflow style graph is abstraction on some level