DISTRIBUTED STEPWISE REFINEMENT OF FINITE SEQUENCES

on Mondays: Aug 20, Aug 27, Sep 3

an introduction
(with nothing like full proofs)

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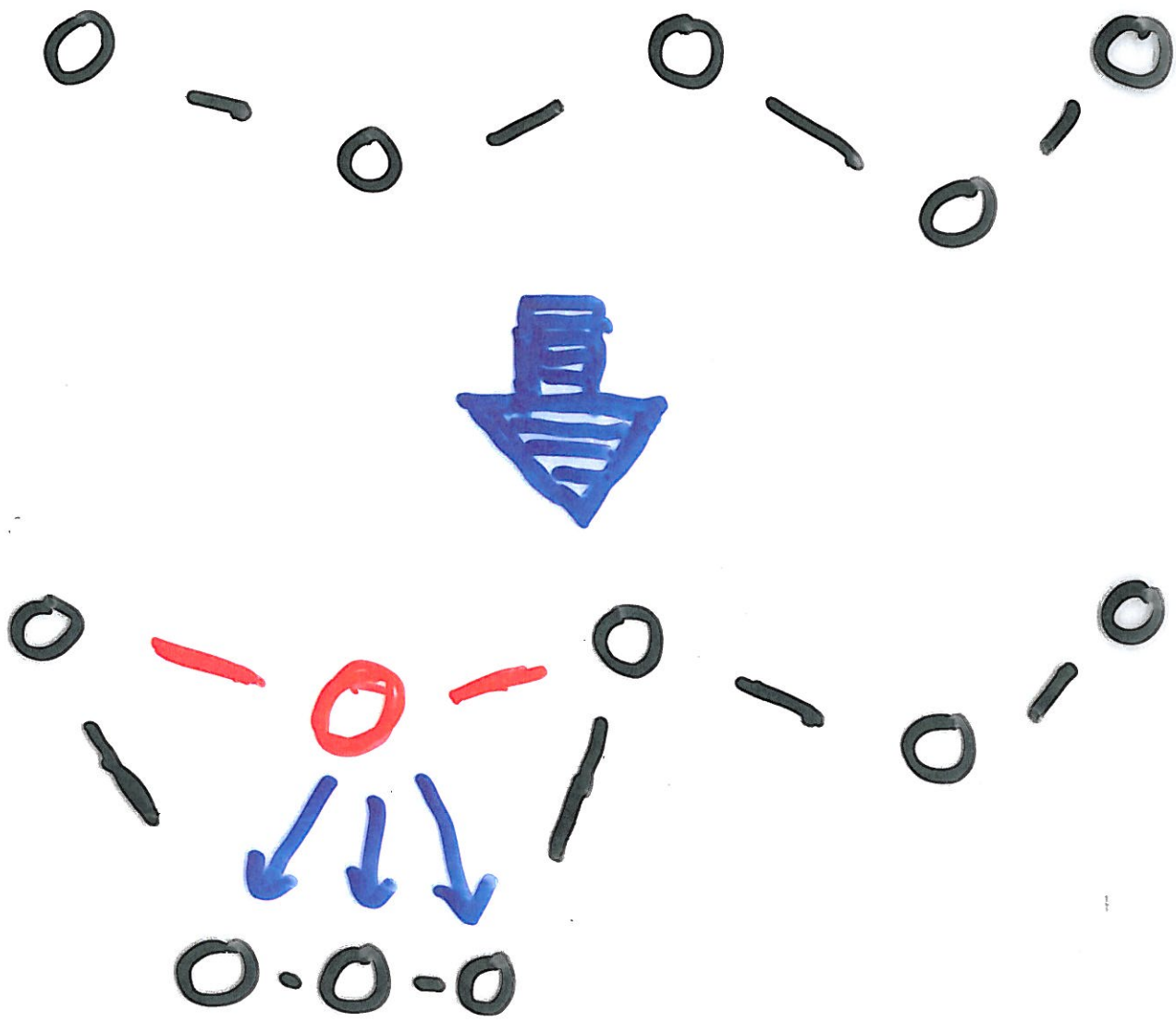
http://users.ics.aalto.fi/ela/
(even an outline available)

CONTENTS

TO-DAY

A REFINEMENT STEP



On the refinement rules

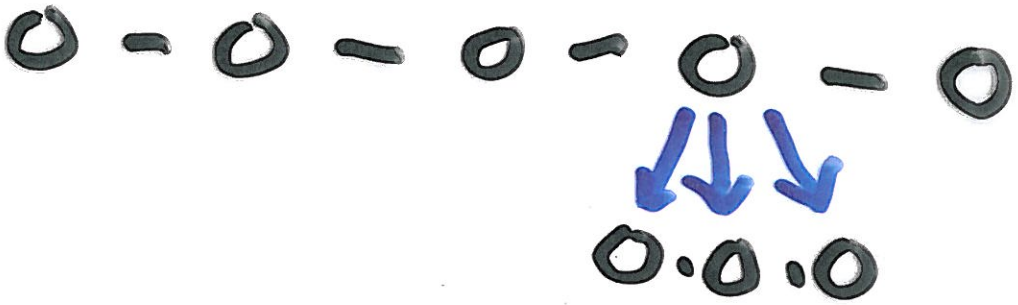
- at a time, only a single data item is refined
- unboundedly context-sensitive
- should be sound, i.e. preserve the semantics

The rule base should be "orthogonal" to the control mechanism

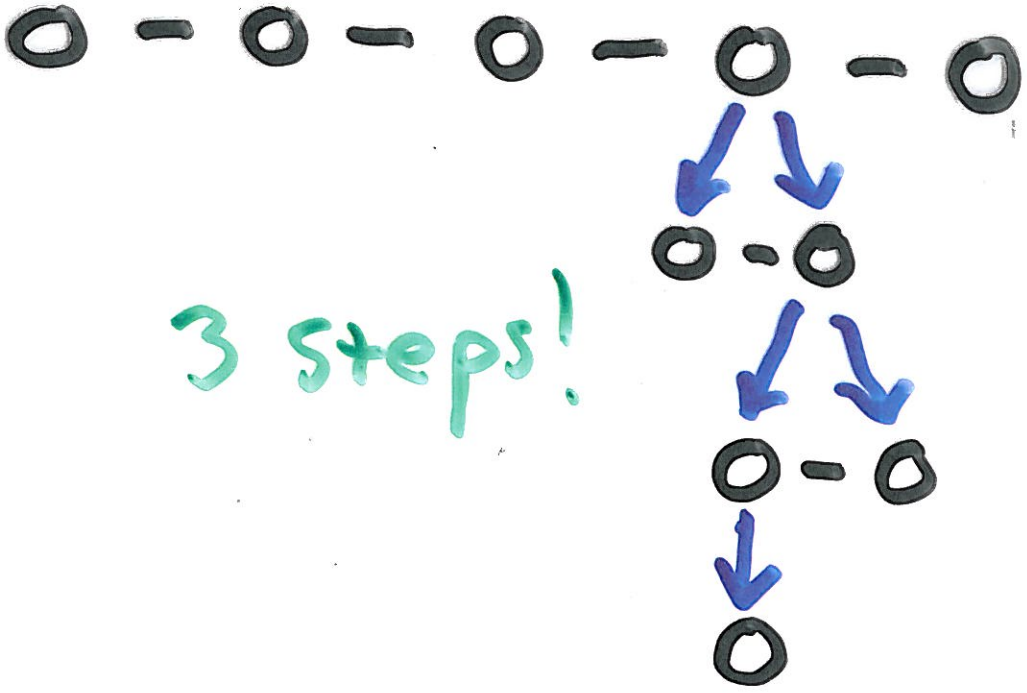
THREE SOUND CASES

A

B



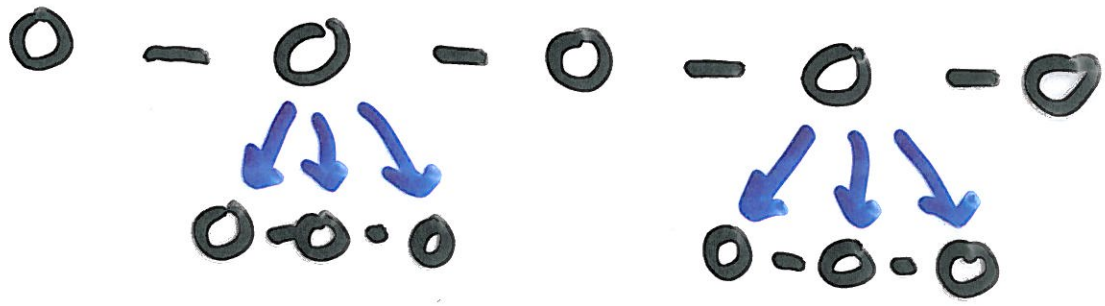
C



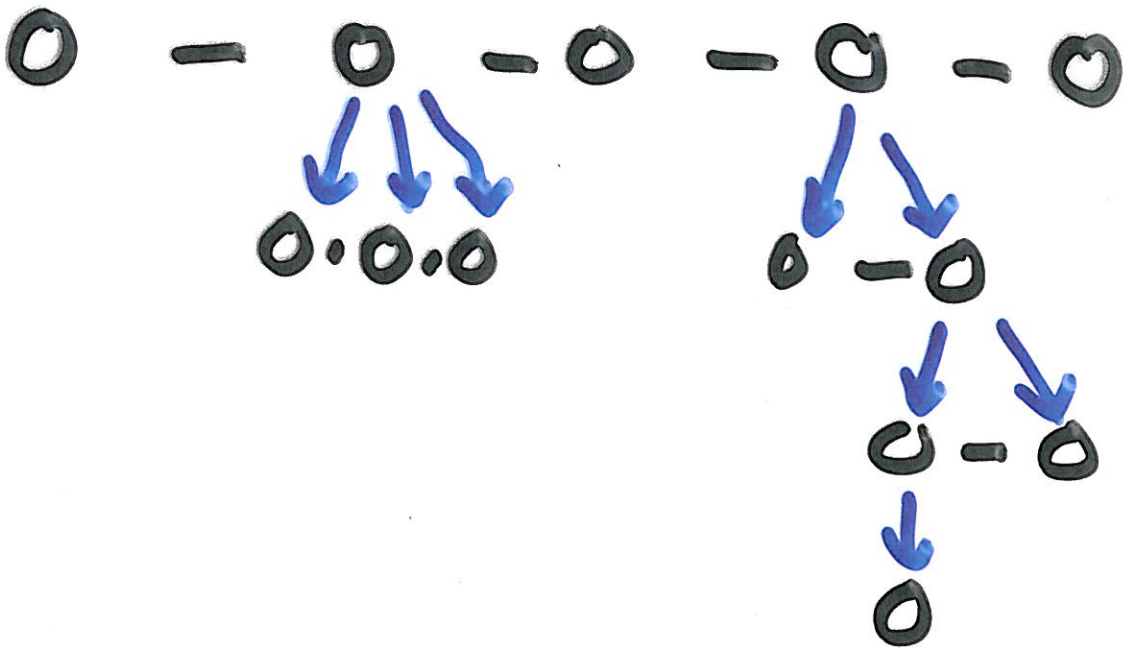
3 steps!

CAN THE RESULTS BE MERGED?

A + B ?



A + C ?



How to achieve soundness when the rewritin process is...

- sequential? - Easy
  A, B, C
- synchronously parallel?
  A + B
- asynchronously parallel?
  A + C

TREE GENERATION PROCESS

- an auxiliary root node is placed on top of the input sequence
- the tree grows downwards

BUT:

- where and when are the refinement rules to be applied?
- how is output extracted?