

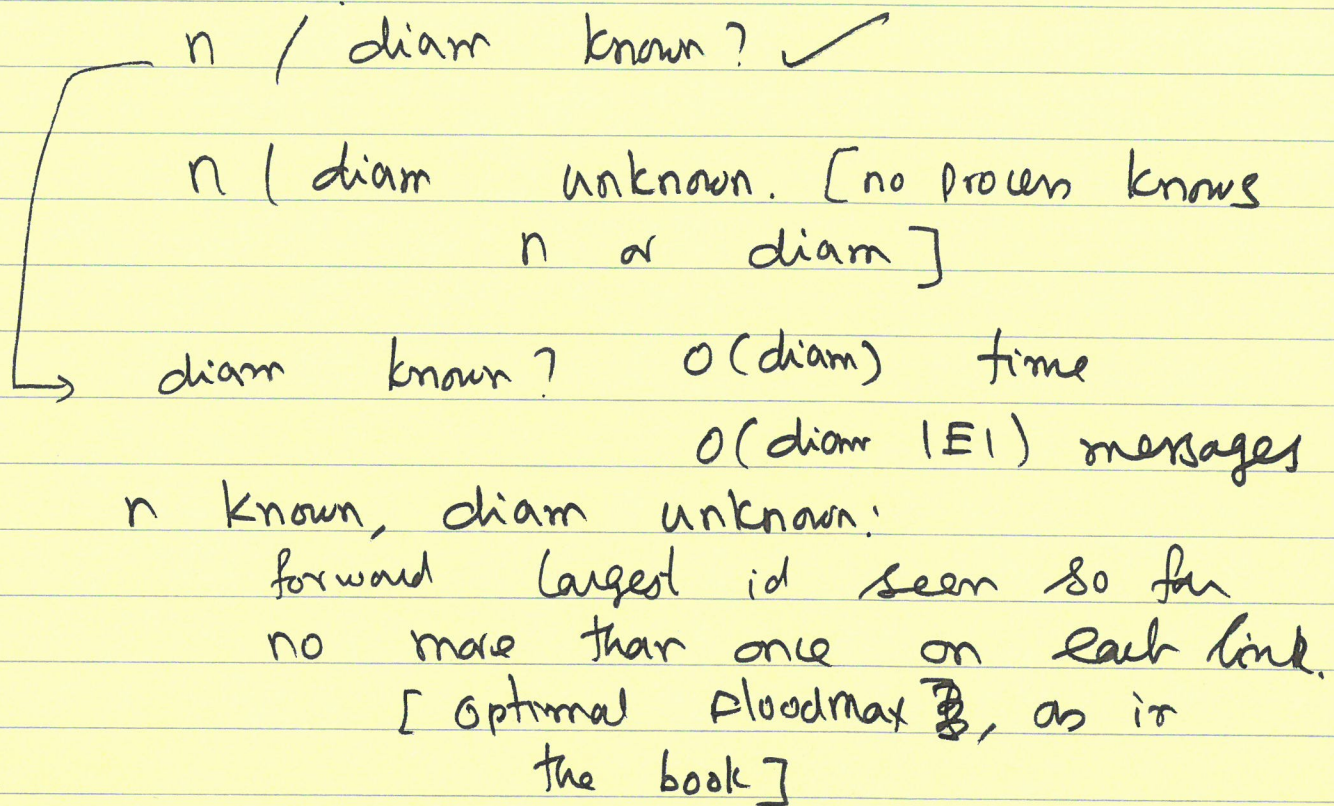
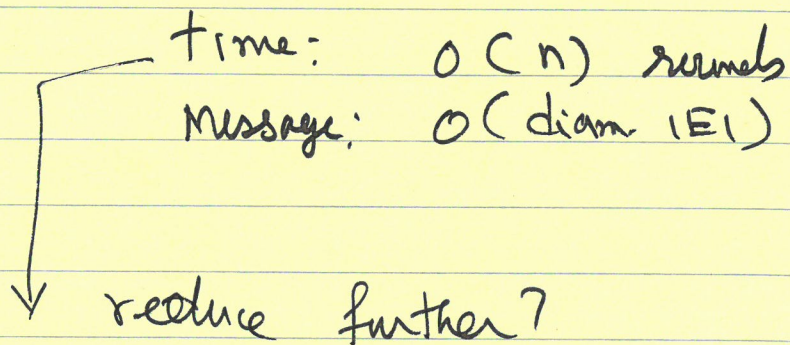
①

9-5-2019

General Synchronous network

Floodmax algorithm for leader election

Termination ?

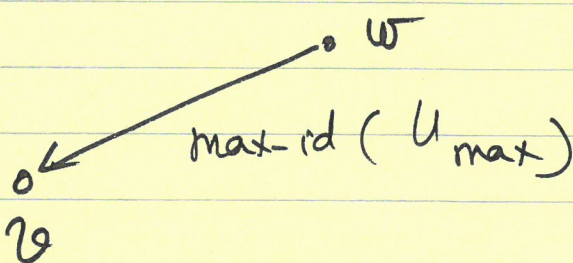
run for $n-1$ rounds.

keep messages $O(\text{diam} \cdot |E|)$ } when n & diam unknown.
 time $O(\text{diam})$.

② Let us look at the process with max-id.

• u_{max}

A message containing u_{max} arrives at a process, say, v for the 1st time.



v does the following

Choose w as its parent

updates largest-id-seen-so-far to u_{max}
forward this id to all others.

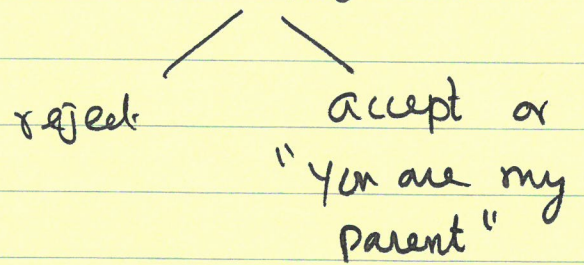
[if u_{max} came in the same round from multiple neighbors choose one of them to be the parent]
this "tree" will grow.
This tree is rooted at u_{max}

example

• 225

• 123

③ Every message will get a "reply".

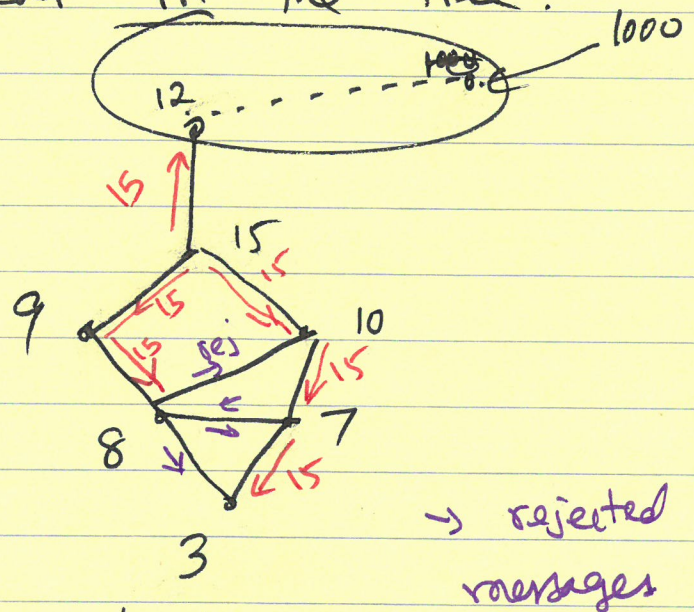


The tree grows.

When does the tree stop growing?

All forwarded messages are \oplus rejected?

I'm a leaf in the tree.



Termination starts from leaf processes:

Send a ~~I'm~~ I'm done message to parent.

Non-leaf: (interior vertex in the tree),

when a reply (I'm done or reject) is received, send I'm done to parent