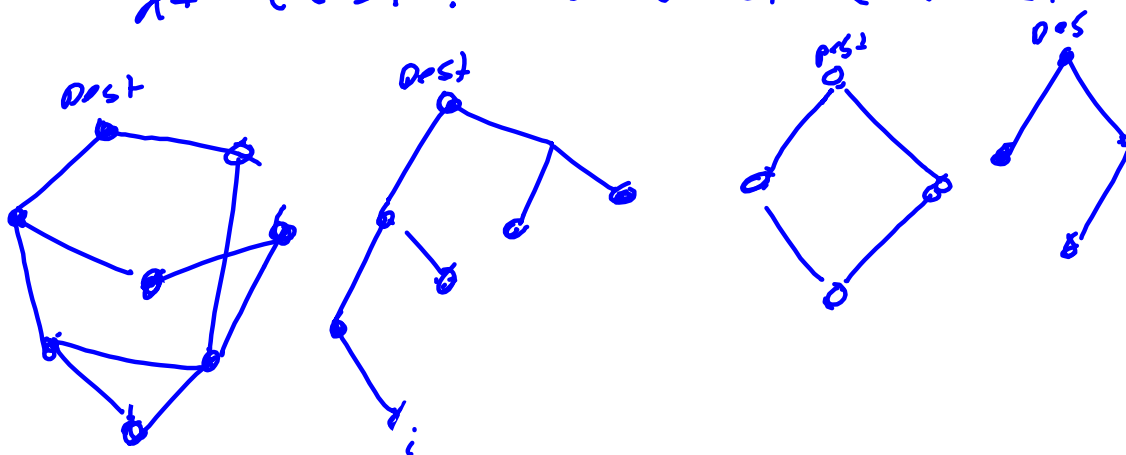


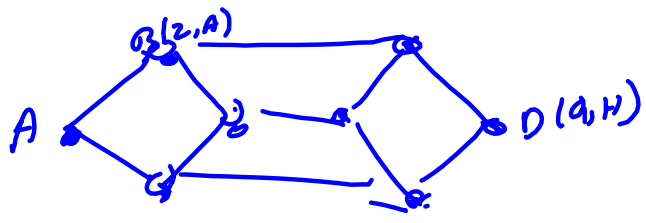
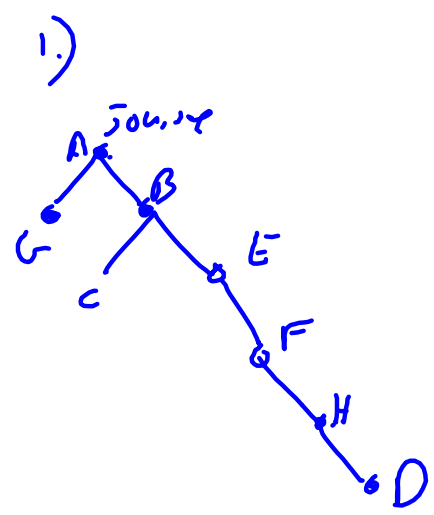
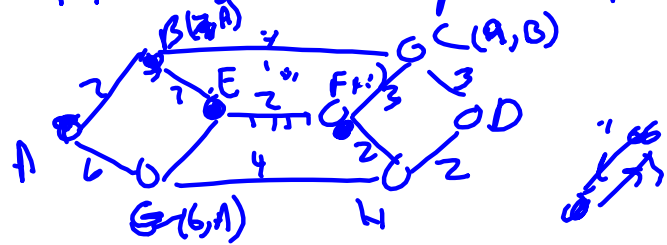
- need to pick something to optimize
- delay (propagating & transmission)
 - # of hops
 - geographic distance
 - total throughput
 - combo.

The set of optimal routes from all sources to a given dest form a tree rooted at dest. called sink tree.



Shortest path Routing (Dijkstra)

Find shortest path from A to F



Flooding

Every incoming packet is sent out on every outgoing line except the one arrived on.

Claim

Flooding follows optimal path with damping?

False

duplicate packets created.

clamping

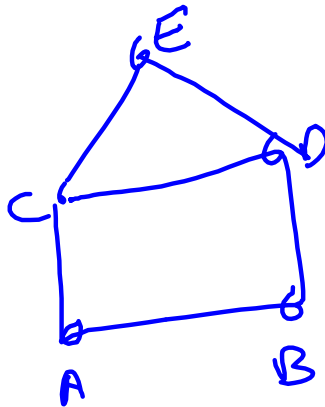
- 1.) use hop counter when zero discards packet
- 2.) Don't send packet more than once.

-

Distance Vector Routing (Dynamic)

- each router maintains a table of best known distance to each dest. and which line to use to get there.
- tables updated by exchanging info with neighbors
- router is assumed to know the "distance" to each of its neighbors

Example



A estimates delay to B, C to be 4, 10 respr.

A periodically receives a list of estimated delays to each destination from its neighbors.

	B
A	4
B	0
C	20
D	6
E	0

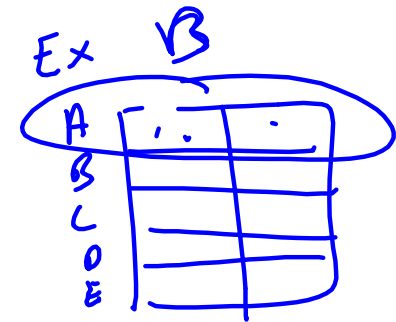
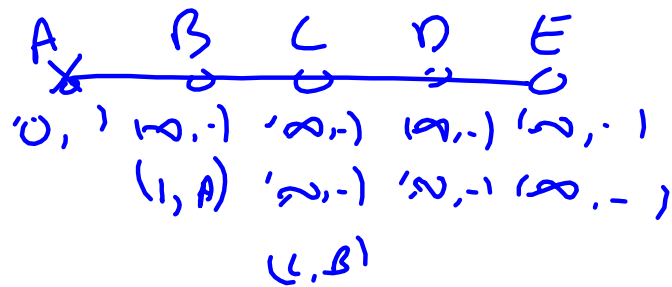
AB
8

	C
A	2
B	15
C	0
D	3
E	0

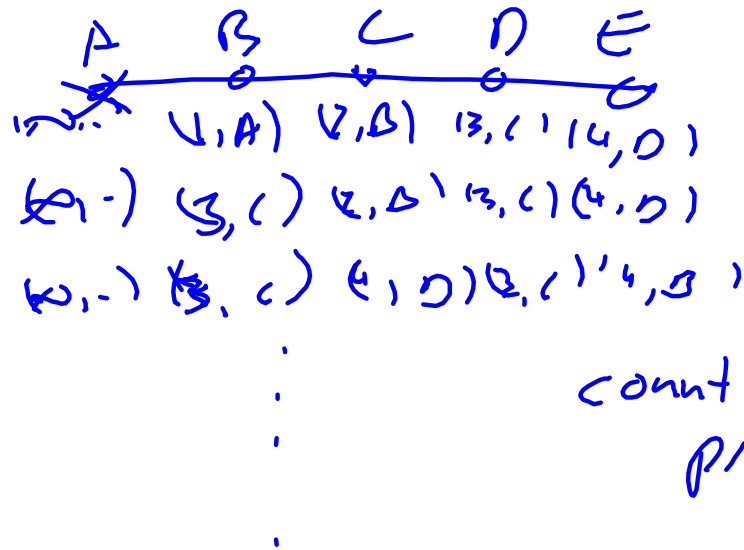
AC
10

	time	link
A	0	-
B	1	B
C	10	C
D	13	C
E	14	B

A sends this to neighbors C, B



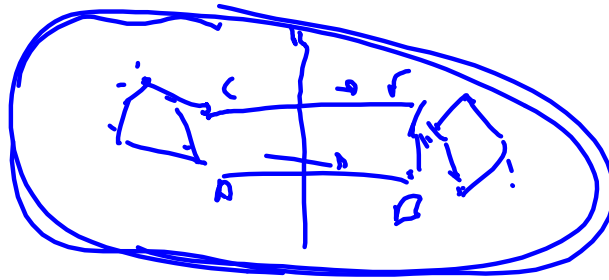
in a subnet with longest path length N hops, within N exchanges everyone will know about newly received router.



count-to-infinity
problem.

Link State Routing

- 1.) discover neighbors
Hello packet when connected
- 2.) Measure delays to neighbor
- 3.) Construct with this info.
- 4.) Send packet to all other routers
use Flooding
- 5.) Computes routes



Pritam