Assignment 6
Routing

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Thoughts on grading

- We're going to grade P5 and P6 via demo.
- Idea is that you set up a demo, than we go through your code with you.
- We'll bring extra test cases.
- Thoughts?

Due dates

- Design doc not due until May 3
- (You should have your design reviewed BEFORE May 3)
- Project six due May 10

Routing

- In projects 3 and 5, we've assumed that you can address a packet to anywhere and get it there.
- This doesn't happen by magic.
- Nodes can only send to neighbors.
- Need routers that know to forward things.

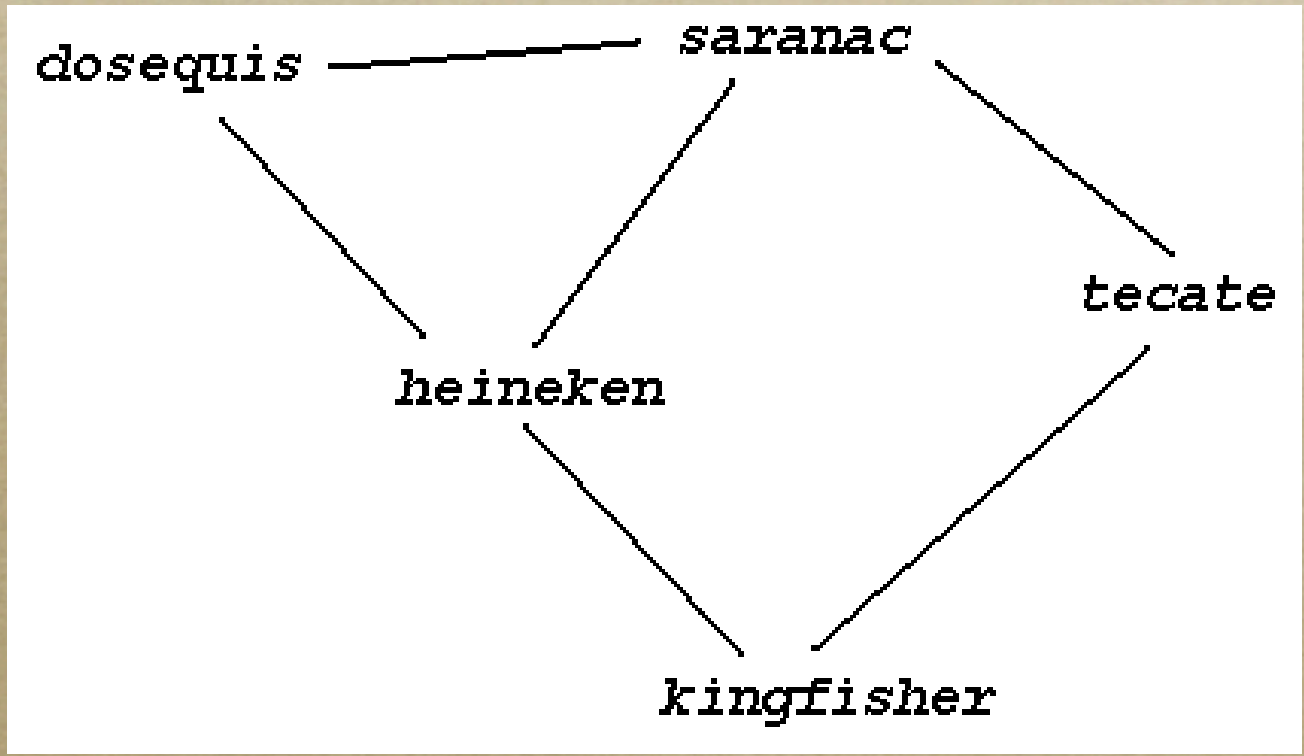
What we give you

- In network.h
  - #define BCAST_ENABLED 1
  - #define BCAST_USE_TOPOLOGY_FILE 1
- Create a topology file

A routing file

```
saranac
heineken
dosequis
kingfisher
tecate

.xx.x
x.xx.
xx...
.x..x
x..x.
```



We'll do it BGP style

- We'll do the routing "BGP style"
- Each node broadcasts a packet saying "I'm here" every five seconds.
- Broadcast gets repeated across network; nodes add selves to header of packet.
- A node hears "A is here (heard through B, C, and D)"

Code organization

- Your routing framework needs only one public interface method: *miniroute_send_packet*() in miniroute.[ch]
- Keep a routing table: fill in routetable.[ch]
- Also a revised interrupt handler, and a system thread to broadcast.

Handling interrupts

- Also modify interrupt handler to forward packets not for us and to handle routing broadcasts.
- Drop packets if no route exists.

Formats

- The miniroute header is defined for you.
- Format is a list of nodes, and a length.
- See if you can make your implementations interoperable!

Routing table

- Route table should give fast (better than linear time) access to routes.
- Routes should go stale after 30 seconds.
- What thread should expire the routes? (Design question!)

Broadcasts

- A broadcast starts off with only one name on the route in the header.
- Each succeeding node forwards if it's not in the route and doesn't already have a better route.
- At end, everybody has route to broadcaster.
- Have a system thread broadcast every few seconds...every 5-10 s would be fine.

Mini-IM

- We'd also like you to build a toy chat application on top of your routing.
- Doesn't have to be fancy. Just able to send and receive simple text messages.
- Use miniterm_read() in read.h
- Initialize it with miniterm_initialize() in read_private.h