


Recitation 10: RON + Performance

MIT - 6.033

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Henry Corrigan-Gibbs 

Plan

- Recap on Row
- The Evaluation Section
- Debate: Zoom should use Row to improve quality of our video chats.

Logistics

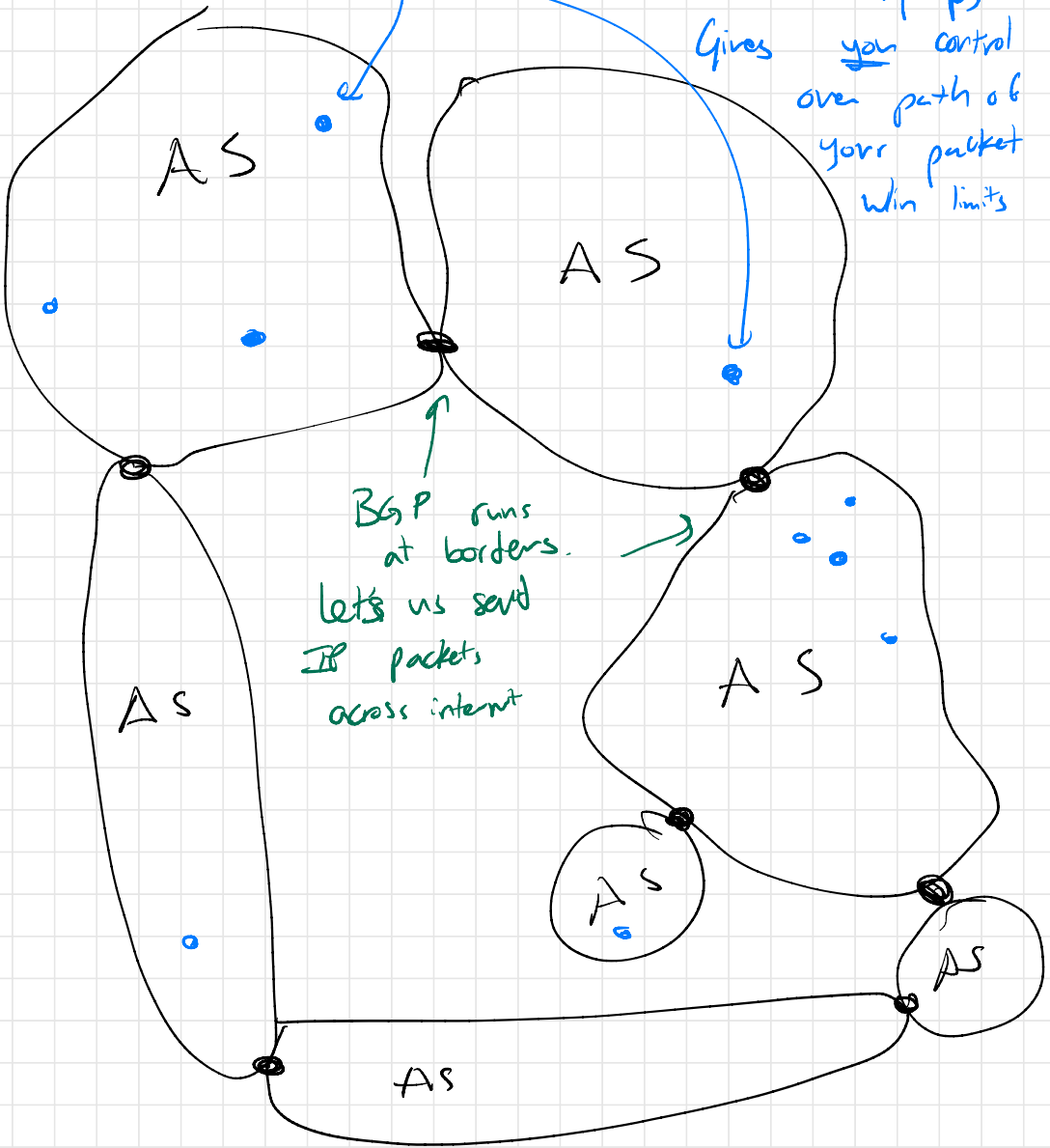
- * DP Prep report assignment at due 3/30
- * Mid-semester feedback form (see your email)
- * For Tuesday: DETCP

Recap: Goal of Ron

1. Route quickly around net failure
2. Application-specific metric in path election
3. Expressive routing policies

Row runs on normal machines
in each AS (e.g. your laptop)

Gives you control
over path of
your packet
w/in limits



In science, what is the goal of an experiment?

* Test a theory / hypothesis

↳ Earth is flat

"Our system is a good idea"

* Measure a constant / quantity

↳ Speed of light, acceleration due to gravity

"Cost of our system is MB/\$/..."

* [In engineering] Compare costs to alternatives

↳ This engine uses 2x fuel than the other

"Our system is better than prior one."

* Others?

Which are happening here?

- Test a theory

↳ Low improves throughput

- Measure constant

↳ Loss rates / Low port

- Compare to alternative

↳ Plain internet

A Debate

Resolved: Zoom should implement RON to improve video experience for our 20-person Zoom calls.

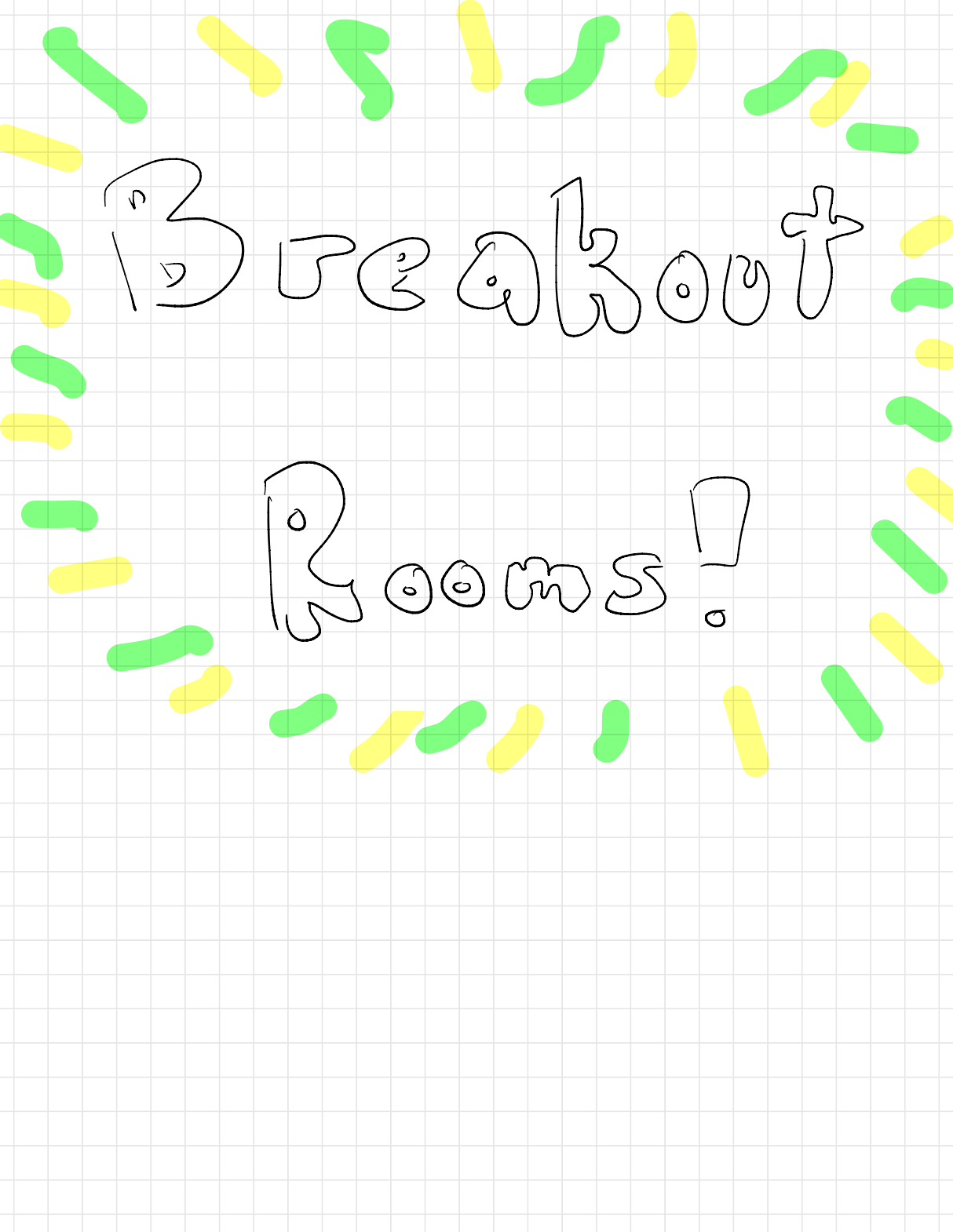
- Does RON solve an problem?
- Is it fast/cheap enough?
- What could go wrong?

Even Rooms : In favor

Odd Rooms : Against

- 1) Use paper to find points supporting your position.
- 2) Nominate one person to give persuasive short points in support
- 3) We'll alternate rooms.

↳ Everybody wins? 😊



Breakout

Rooms!

- Could RON make ~~net~~ performance worse?

- Extra hops
- Extra processing
- Extra policy restrictions?
- "too clever"
- b/w consumption

- Scaling: Why doesn't RON scale to thousands of nodes?

→ Quadratic cost of probes!

- How costly are the probes?

↳ Worth it?

Why don't we use PON?

- Scaling is one major issue
- For whom is it worth the trouble?
 - ↳ Maybe Google, but they run their own fiber?
- Can you run PON w/ mutually distorting parties?
- How frequently do we see net outages of the kind that PON could fix?
 - ↳ worth the cost?

Example of one that is used: Tor

↳ Not for performance but for functionality