Programming Assignment #7:
Putting altogether

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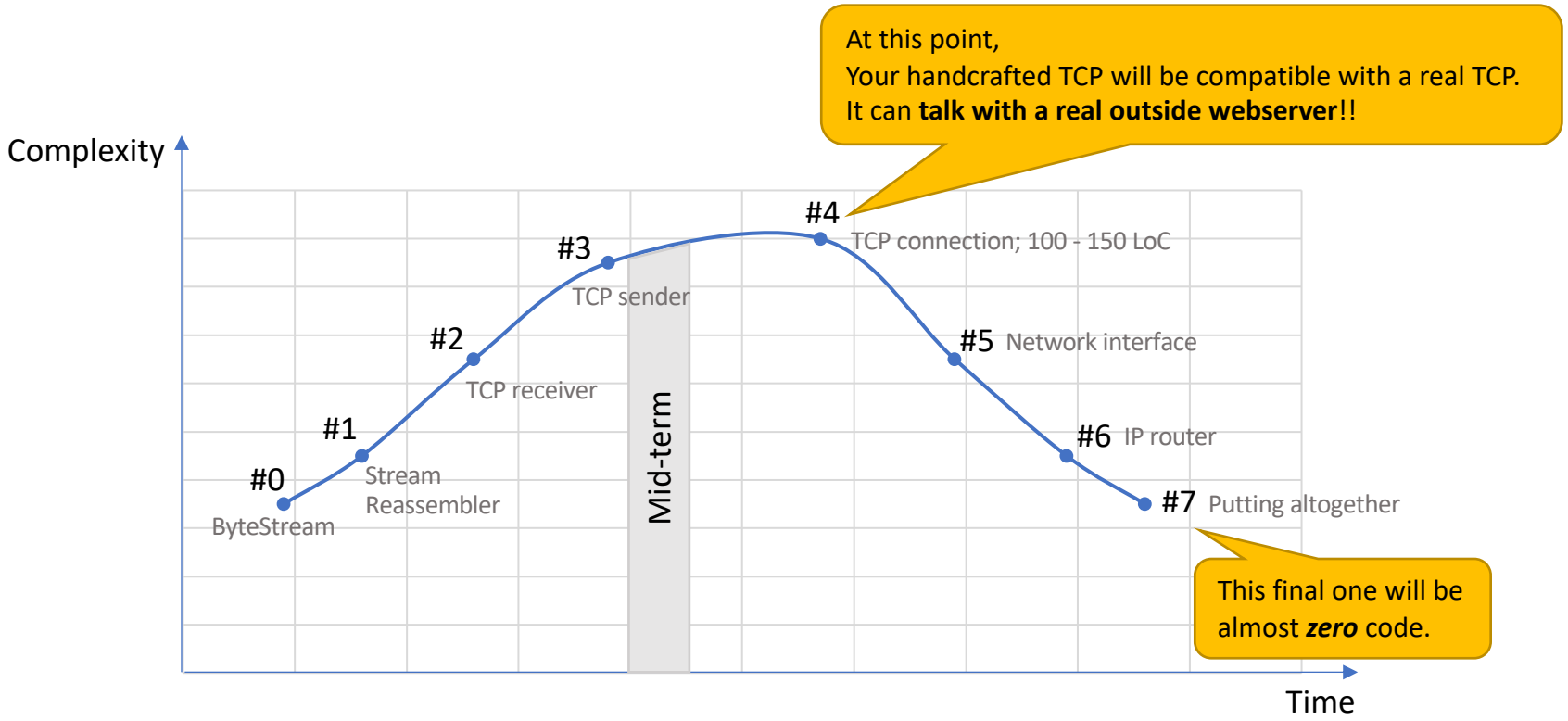
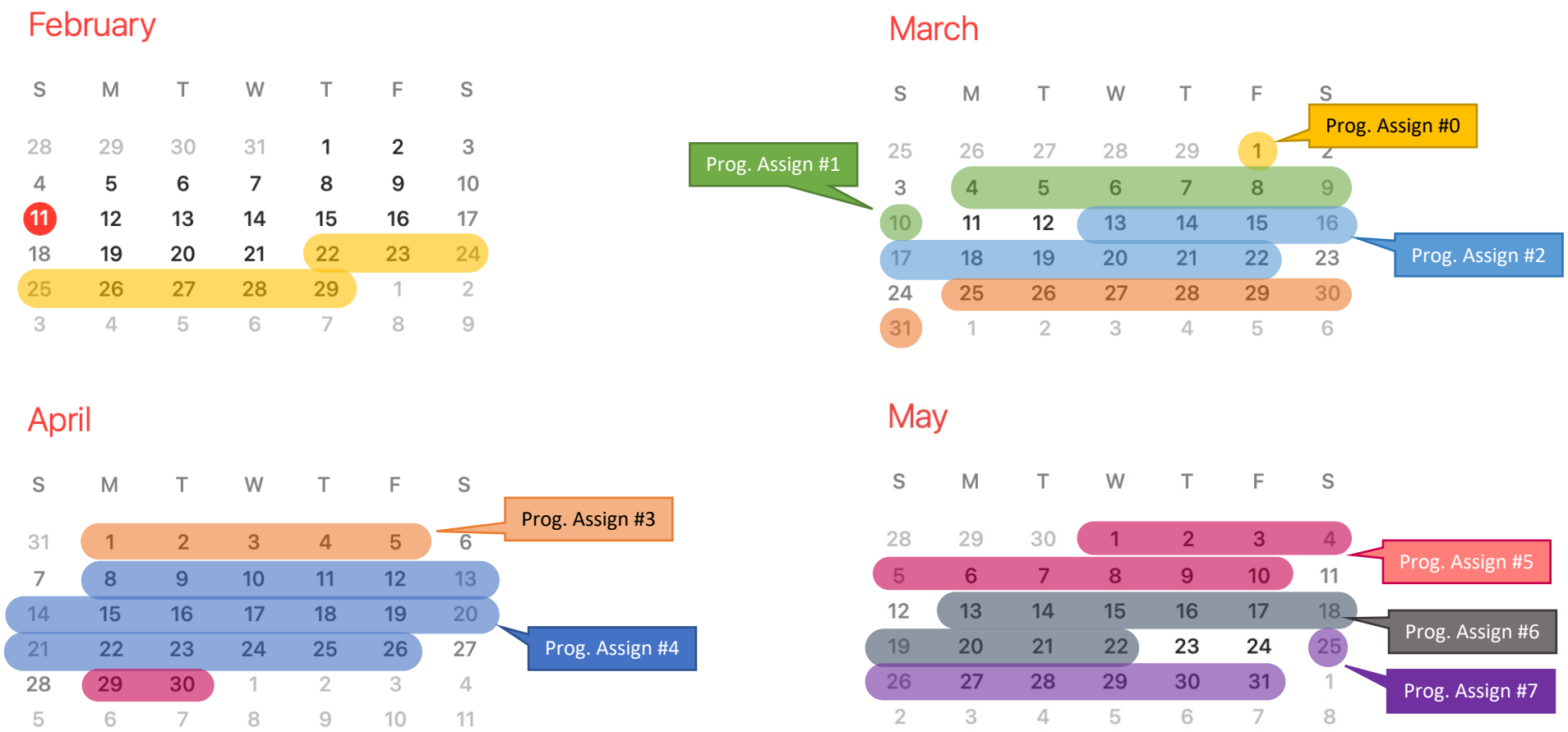
POSTECH CSE
Department of Computer Science & Engineering

Congrats on completing your handcrafted TCP/IP!



Master Timetable

Regular schedules indicated by color. Regular due is at 23:59 of the last day of the same color.
Late submissions are accepted until 24 hours grace period after the regular due (at **20% penalty**)



Allocated Days & Relative Score Weights

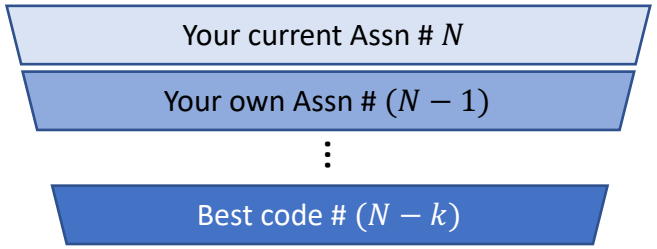
Source: "**Sponge**" in Stanford CS144 'Introduction to Computer Networking' by Prof. Keith Winstein

- We will provide our own materials with proper localization. While you are free to refer to the original CS144 materials, our materials will precede in case of discrepancy.
- Complexity would vary with assignment; LoC per assignment may be between 25 and 150 lines.
- Per-assignment weights and days are differently allocated, reflecting the varying complexity.
- After each assignment, within 7 days, the best submission will be chosen and disclosed to the class.
  The author of the best submission is rewarded with +10% extra score on top of what she/he earned from that assignment.

No.	Theme	Days allocated (regular + late)	Relative weights allocated
0	**Warmup**	9 + 1	7
1	**Byte streams**	7 + 1	9
2	**TCP receiver**	10 + 1	14
3	**TCP sender**	12 + 1	18
4	**TCP connection**	19 + 1 (including mid-term week)	18
5	**Network interface**	12 + 1	14
6	**IP router**	10 + 1	11
7	**Putting altogether**	7 + 1	9

Building upon best code

- As announced on Day 1, it is allowed to build your assignment #N on top of whole or part of the best code for assignment #$(N-k)$, $k \geq 1$
- If you used any part of best codes, **include the following in your writeup (assnX.md):** *"For this assignment, I used part or whole of the best codes of assignment #i, #j, …, #k."* (i.e., every best code number that you used)
  - Caution: See the whole dependency chain of your current code base.
    - You should specify all the past best submissions that currently exist in any part of your code base.
  - If you want to eliminate your dependency on best code #$(N-k)$, you can re-work on your assignment #$(N-k)$ and have your successive assignments based on it.



- Not specifying the use of best codes that exist in any part of your current code base will have our **automatic similarity checker trigger a cheating alert**. Please prevent such risks.
- To respect students who complete their submissions only on their own efforts, submissions that use any of previous best code #$(N-k)$ will have their top score **capped at 90%**. This policy will take effect from Assignment #2.
- When we select the best code in future assignments, our priority will be those without using others' best code.

Where to Submit

At PLMS:

Week 15 (05/27, 05/29)

- Chapter 7 & 8 Digest. Wireless, Mobile Networks, and Security
- Special Topic on "Networks beyond Connectivity" - Part III
- Course closing

[Assignment] #7. putting it altogether 2024-05-25 00:00:00 ~ 2024-05-31 23:59:00

Individual submission

For assignment description and resources, please refer to:

- Attached slides
- Our assignment webpage: https://tomahawk.postech.ac.kr/csed353/
  - For off-campus access including the dormitory, you need to turn on POSTECH VPN: https://vpn.postech.ac.kr/

학생에게 비공개

[Homework] Essay about great minds in computer networks 2024-05-19 00:00:00 ~ 2024-06-01 23:59:00

Team submission

(slides fixed and re-uploaded, at 08:54, May 22 Monday ~~at 23:57, May 21 Sunday~~)

This is team homework. Both members of a team will get the same score.

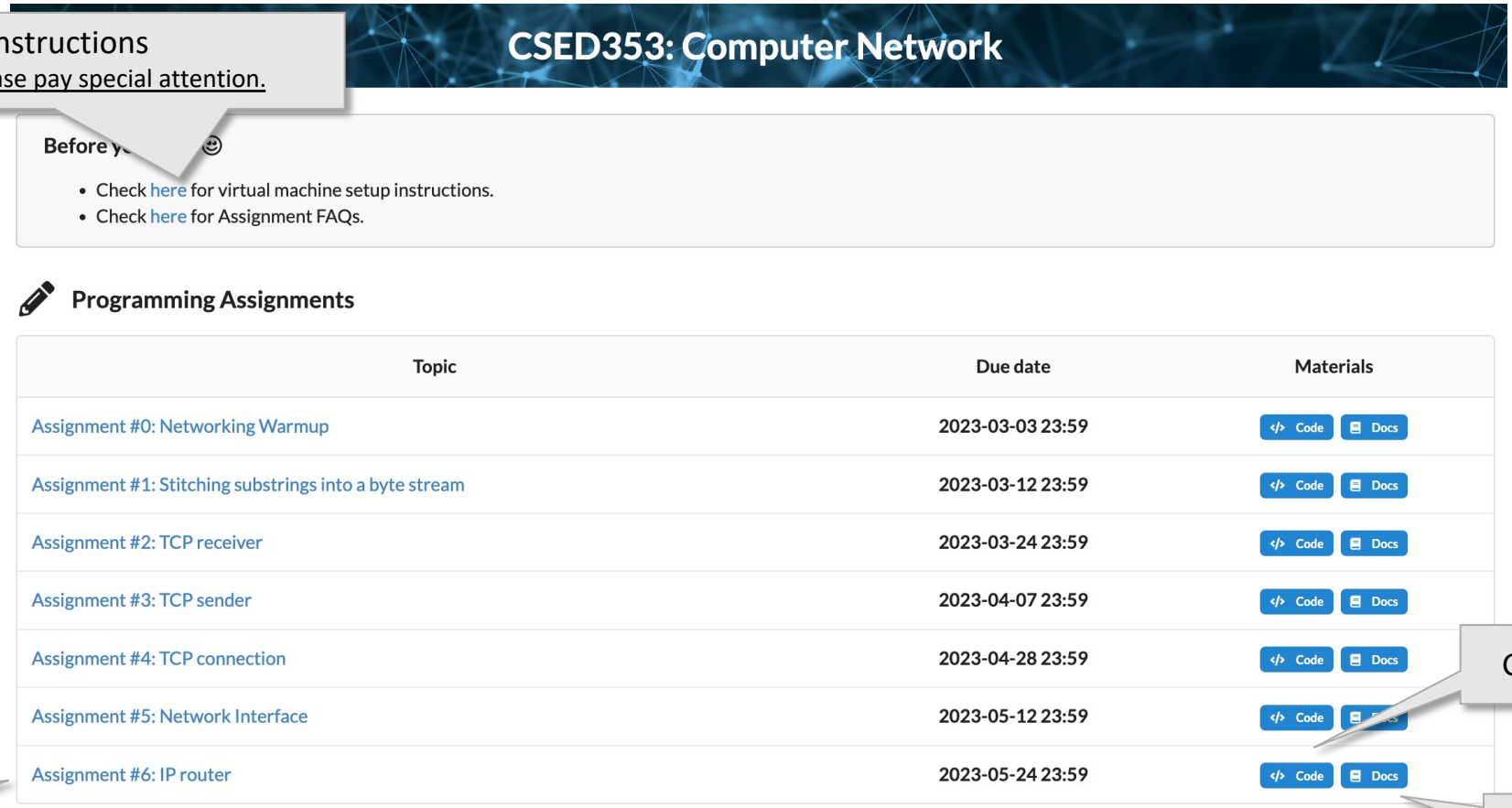
Please refer to assn7.pdf (linked to Assignment #7 entry) for essay guidelines.

No late submission is allowed. Please include all the references that you found information from.

(Your chosen teams will be applied by May 26, Friday)

Assignment Materials

VM setup instructions
Note. M1 mac users, please pay special attention.



GitHub repo

Assignment description

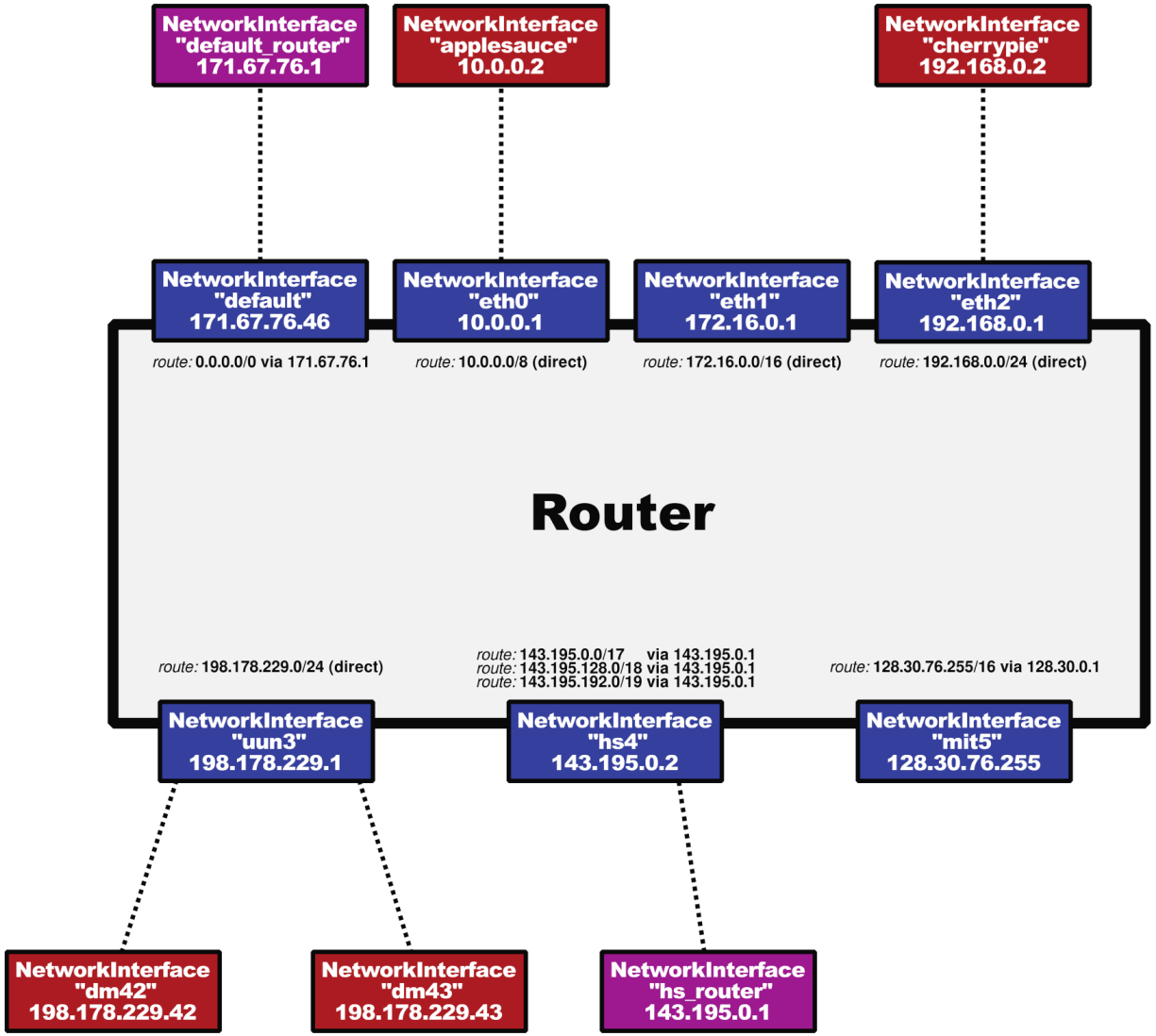
API docs

https://tomahawk.postech.ac.kr/csed353/

For off-campus access (including dormitory), get POSTECH VPN first: https://vpn.postech.ac.kr/

In addition, please visit regularly PLMS → Announcement bulletin for important updates about assignments.

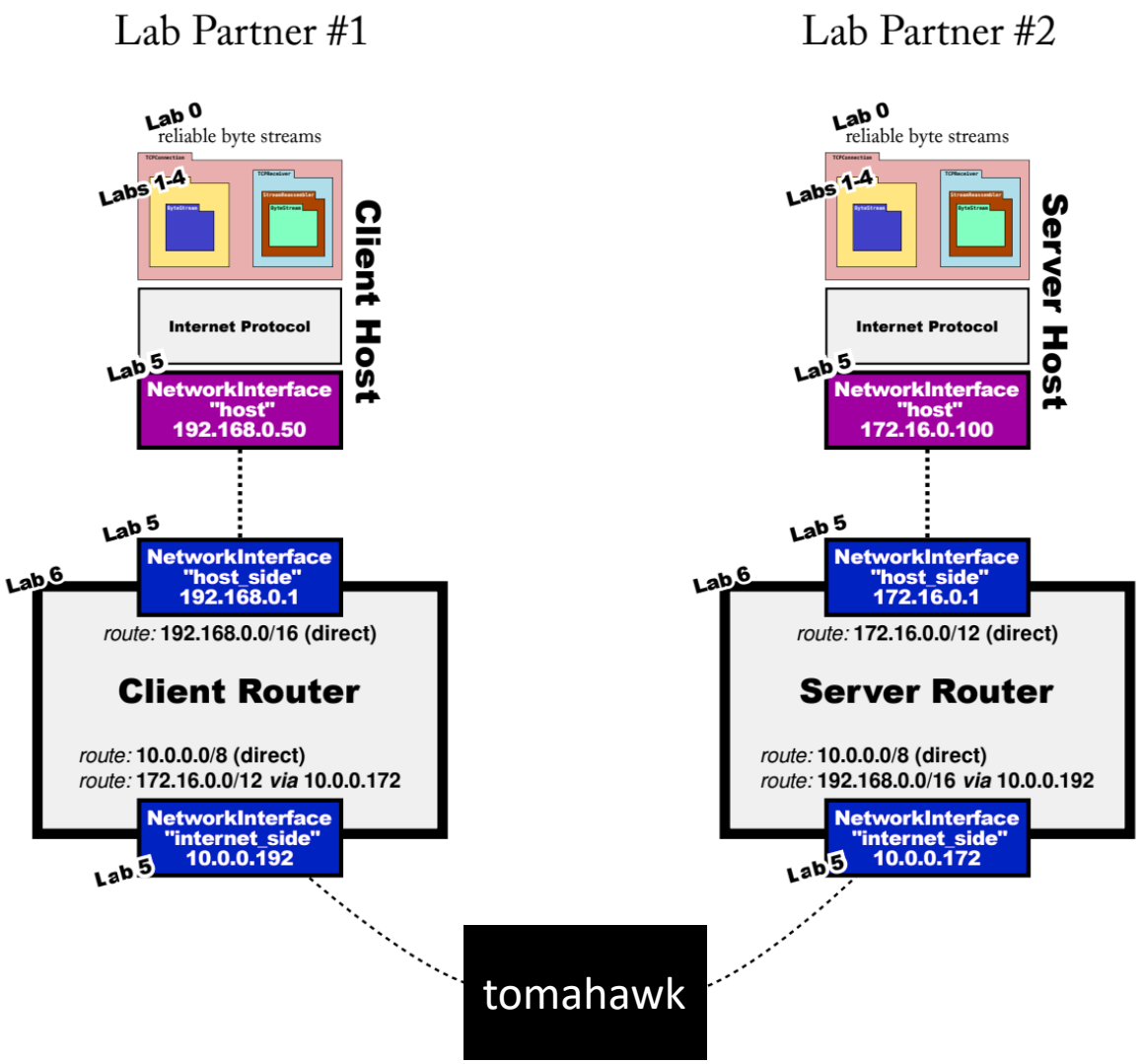
[Review] Programming Assignment #6: IP Router



- **Adding a new route**
  - Address prefix
  - Prefix length
  - Next hop IP address
  - Interface number
  - *Data structure for the routing table is up to you!*

- **Route a datagram**
  - Longest prefix match rule
  - Drop the datagram if no route matches or TTL expires
  - *No need to implement ICMP*

Programming Assignment #7: Putting it altogether



To Dos

- Solo portion
- Group portion
- Creative portion (optional; +50% if new & good)
- Essay (next page)

- **Regular due** : May 31, 23:59 (**10** days including today)
- **Late due** : June 1, 23:59 (20% penalty)
- **9% weight** out of the whole programming assignments
- **Naming convention**: <your_student_id>.git (e.g., 20209876.git)

Sign up for your team

Full details are in assn7.pdf

https://docs.google.com/spreadsheets/d/1f4WeV0xZCyNRTNyzDyU2b4ztogTQtffMkmb5zGwZhIo/edit?usp=sharing

1. Find a teammate
2. Select a team name that you like
3. Name yourselves next to your selected team name by Friday EOD (May 24, 23:59)
4. When you work on Assignment #7, use *only* the port numbers assigned to your team
5. If you think relay server is dead, post at Q&A board ASAP. Our almighty TAs will resurrect it.
6. Submit:
   1. To “Assignment 7” entry @PLMS: Submit your standard Assignment #7 deliverables to PLMS
   2. To “Essay” entry @PLMS: Submit your essay (PLMS entry will be ready by May 29 Wednesday)
7. Note: Essay goes to your homework scores.

	Team Name	Member "Alice" (POVIS ID)	Member "Bob" (POVIS ID)	Relay ports @Tomahawk	
				Server	Client
(Norman)	Abramson			63902	63903
(Marc)	Andreessen			63906	63907
(Victor)	Bahl			63910	63911
(Paul)	Baran			63914	63915
(Tim)	Berners-Lee			63918	63919
(Vint)	Cerf			63922	63923
(Kilnam)	Chon			63926	63927
(Whitfield)	Diffie			63930	63931
(Douglas)	Engelbart			63934	63935
(Deborah)	Estrin			63938	63939
(Albert)	Greenberg			63942	63943
(Sangtae)	Ha			63946	63947
(Richard)	Hamming			63950	63951
(Van)	Jacobson			63954	63955
(Raj)	Jain			63958	63959
(Robert)	Kahn			63962	63963
(Leonard)	Kleinrock			63966	63967
(Simon)	Lam			63970	63971
(Robert)	Metcalfe			63974	63975
(Ted)	Nelson			63978	63979
(Wesley)	Peterson			63982	63983
(Jennifer)	Rexford			63986	63987
(Injong)	Rhee			63990	63991
(Claude)	Shannon			63994	63995
(Ian)	Stoica			63998	63999
(Mark)	Weiser			64002	64003

Essay guidelines

Full details are in assn7.pdf

https://docs.google.com/spreadsheets/d/1f4WeV0xZCyNRTNyzDyU2b4ztogTQtffMkmb5zGwZhIo/edit?usp=sharing

A 20+ lines of (10-pt) **essay *per-team*** about your team's name (plain text; not bulleted lists)

- (~20%) Her/his career milestones
  - education (schools & degrees, when), professions (company, university, government, start-up, … when)
- (~50%) Her/his major contribution to either (or both)
  - Founding the major principles or building blocks of computer networks (e.g., Ethernet, congestion control)
  - Developing new systems or applications on top of computer networks (e.g., WWW, indoor localization)
- (~10%) Her/his major awards, if applicable
- (~20%) Your own thoughts about her/his impact – technical, social, etc.
- NOTE: Include all references. (e.g., URLs of Internet documents)

	Team Name	Member "Alice" (POVIS ID)	Member "Bob" (POVIS ID)	Relay ports @Tomahawk	
				Server	Client
(Norman)	Abramson			63902	63903
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(Deborah)	Estrin			63938	63939
(Albert)	Greenberg			63942	63943
(Sangtae)	Ha			63946	63947
(Richard)	Hamming			63950	63951
(Van)	Jacobson			63954	63955
(Raj)	Jain			63958	63959
(Robert)	Kahn			63962	63963
(Leonard)	Kleinrock			63966	63967
(Simon)	Lam			63970	63971
(Robert)	Metcalfe			63974	63975
(Ted)	Nelson			63978	63979
(Wesley)	Peterson			63982	63983
(Jennifer)	Rexford			63986	63987
(Injong)	Rhee			63990	63991
(Claude)	Shannon			63994	63995
(Ian)	Stoica			63998	63999
(Mark)	Weiser			64002	64003

Please start working on your assignment ***early***

- You may find troubles in setting up your environment.
- You may find some differences between your output and the assignment PDF.
  - Partly our mistakes that a known discrepancy was not fixed already.

- You are welcome to post questions, as long as you are not asking us to solve or debug your assignment directly.
- However, it takes time for us to provide responses, typically ≦ 24 hours.
  - If many of you do your assignment close to the deadlines, many questions will be poured in a short period of time.
  - Due to the peak load, our responses may get delayed.
  - In the worst case, you may not have your answer before the deadline. Still, the due won't be extended.