

Worksheet Class 2: Protocols and Layering

Part 1: A Note Between Roommates (~4 minutes)

Alice and Mila are Swatties starting out their semester and are roommates. Alice wants to leave Mila a written reminder to get milk.



1. Construct the message. Write out exactly what Alice posts to Mila. (Example on class slides.)

2. Metadata. Besides the sender and receiver, what other information about the message might Alice include so Mila interprets it correctly? List at least two things.

Part 2: A Birthday Card Across the Country (~11 minutes)

Alice moves to Chicago and Mila to Seattle for summer internships. Alice wants to mail Mila a birthday card. Think of this as filling in two different pieces of information: (1) the birthday card itself, and (2) the mailing envelope.

1. Message and header. What goes on the card, and what goes on the envelope? Which parts changed from Part 1, and which stayed the same?

2. The “mail sending protocol.” Write out the protocol Alice uses: the message format and the transfer procedure (the ordered steps to get the card into the mail system).

- a. Who chooses the drop-off point this time? How does that differ from the roommate note?
- b. Is this the only protocol involved in delivering the card to Mila? What others can you think of?

3. Division of labor. Once the card is in the mailbox, whose job is it to:

- a. choose the carrier (USPS, FedEx, ...)?
- b. plan the route the card takes across the country?
- c. physically move the card from place to place?
- d. notice and fix it if the card is lost?

4. Wrap-up: separation of concerns. Look at your answers to question 3. Does Alice need to know how any of those jobs are done? Does the mail carrier need to read the birthday card? In one or two sentences: what does each party need to know, and what can they safely ignore?