

Topic 1.1: Collaboration

Collaboration Activity — Pair Programming Protocol

Practice working as a real development team. You will run the pair-programming model, swap roles, and use a simple protocol for making decisions and handling disagreements. (About 20 minutes.)

Goal

With a partner, work through one short programming task using pair programming. The point is not speed — it is to practice the two roles, swap cleanly, and make decisions together as a team.

The two roles

Role	What you do
Driver	Hands on the keyboard. Type the code, focus on the current line, and think out loud so your partner can follow.
Navigator	Eyes on the big picture. Review each line, watch for mistakes, keep the plan in mind, and suggest — but let the driver type.

Your task

Work through the task below together. It is written in plain pseudocode, so it works no matter what language your class uses — translate it into your tool as you go.

Pair task: safe-tide counter

GOAL: count how many tide readings in the list are above the safe level.

```
safe_level <- 4
readings  <- [3, 5, 2, 6, 4, 7]
count     <- 0
```

```
FOR EACH r IN readings:
  IF r > safe_level:
    count <- count + 1
```

DISPLAY count

STARTER BUGS TO FIND TOGETHER (the navigator should catch these):

- should the check be > or >= ? decide as a team
- what does the program show if NO reading is above safe_level ?
- rewrite the loop to also DISPLAY each unsafe reading

The protocol — follow these steps in order

- 1 Pick roles.** Decide who drives first and who navigates first. Write both names below.
- 2 Round 1 (about 6 min).** The driver types; the navigator reviews out loud. Work on the loop and the first starter bug.

- 3 Swap (this is the most important step).** Trade roles. The new driver takes the keyboard; the new navigator reviews. Do not let one person stay on the keyboard the whole time.
- 4 Round 2 (about 6 min).** Finish the remaining starter bugs together.
- 5 Decide together.** For the "> or >=" question, reach consensus: both partners must be able to say why you chose what you chose.

Names + role log

Partner A: _____ Partner B: _____

Round 1 — Driver: _____ Navigator: _____

Round 2 — Driver: _____ Navigator: _____

Team decision (consensus check)

We decided the check should be: ☐ > safe_level ☐ >= safe_level

Why we chose it (both partners must agree):

If you disagree — conflict-resolution checklist

- State the disagreement as a question about the code, not about the person.
- Each partner gives one reason for their choice — no interrupting.
- Look for a test you could run to settle it (what should the program show?).
- If you still disagree, negotiate: pick one option now and note the other to try later.

Reflection (individual, written, 3 min)

One thing your partner caught that you would have missed:

Which role felt harder for you, driver or navigator, and why?

One interpersonal skill (communication, consensus building, conflict resolution, or negotiation) you actually used today: