

What is pair programming?

- Two programmers working together at the same computer.
- One is the *driver* performing the “on-computer” tasks needed to complete the program, including controlling the mouse and keyboard to enter, compile, and run the code.
- The other is the *navigator* actively watching the driver’s activities, making suggestions, pointing out errors and problems, asking questions, and thinking about slightly longer-term strategies.
- The navigator also considers the strategic direction of the work, coming up with ideas for improvements and likely future problems to address. This frees the driver to focus all of her attention on the "tactical" aspects of completing the current task, using the navigator as a safety net and guide.
- Every 20 minutes or so, the partners switch roles, to ensure true teamwork and to allow each the benefit of acting in each role. The pair continues working in this manner until the programming work is complete.

Benefits

- Shorter programs with better designs and fewer bugs -- code must be readable to both programmers and pairs typically consider more design alternatives.
- Knowledge passes easily between pair programmers -- they share knowledge of the specifics of the system and they pick up programming techniques from each other as they work.
- Difficult problems are easier to solve when pair programmers work together.
- Pair programmers report greater joy in their work and greater confidence that their work is correct.
- A partner keeps you honest -- pairs are less likely to skip important phases of software development.

A significant drawback to pair programming is forming a bad pair. Mismatched skill sets and conflicting personalities can cause problems.

How to form a pair

- Unless problems arise, CS 2420 students should form their own pairs. If you absolutely cannot find a partner, contact the course staff.
- Try to partner with someone whose programming ability matches your own. Admittedly, this may be hard to judge for someone that you do not know.

- To make sure that you and your partner will have enough time to complete an assignment, choose someone with a similar schedule who can meet with you in a central location, whether on-campus or off.
- If after forming your pair you find that you do not work well with your partner, do the best you can for the remainder of the assignment. Then form a new pair for the next assignment, steering clear of whatever it was about your previous partner that proved to be a bad match.
- For each assignment, you will be asked to evaluate your partner and the pair programming process.
- It is expected that a pair of CS 2420 students will submit just one copy of the program written together; however, each student must prepare and submit his/her own analysis documents. Sharing of any portion of the documents' text or figures among partners is considered cheating.

More information

- [Wikipedia article](#)