Teaching Problem Solving

Integrating Problem Solving in Your Classes
What we saw last week

The IDEAL framework

- **I** Identify the problem:
  - What needs to be solved? What are we trying to?
- **D** Define and represent the problem:
  - How to formalize it? How do we represent it?
- **E** Explore possible strategies or solutions:
  - List a number of possible techniques that can be used / approaches
- **A** Act on a selected strategy or solution
  - Identify a ranking of the approaches / which one should be tried first?
- **L** Look back and evaluate
  - According to success / performance metrics
Important Note

- IDEAL is a framework
- You can use it as you see fit
- E.g., you could decide to just focus on I, ID, E, L in a given class, to teach different skills
  - AND: lower the fear of "I don't know how to code this" 😊
Last week, you also...

Worked on a problem in small groups, one of the following ones:

- Sudoku
- N-Queen
- Bridge-crossing optimization problem
Reporting...

- How did you approach your problem?
- Did you use IDEAL? Why? Why not?
- If you used IDEAL, how did that feel?
- What do you foresee happening if you asked your students to work on your problem?
Today, let’s explore using IDEAL

- Using the problem you worked on, pick one of these: I, ID, E, or L, and think of / design a class activity for this letter.
Reflection on your current practice

- You probably do some of that already
- Let’s think about the power of “labeling”
- Take a few minutes to think about a practice you currently use in your class and that fits some part of IDEAL
- When does it happen? Possibly describe the activity/the topic
- Which part of IDEAL do you use and how?
- In light of what we have done, what would you do different / more / less?
Questions / Discussions on IDEAL