

University of Illinois at Urbana-Champaign  
Dept. of Electrical and Computer Engineering

## ECE 220: Computer Systems & Programming

### Error Taxonomy

## Specification Left Some Issues Unaddressed

**Does your think-pair-share solution work if the human types no values (starts with -1)?**

**No (fewer than 1% of students have identified the issue while solving this problem).**

**Why not?**

**Our specification did not cover this possibility!**

## Specification Ambiguities Can be Hard to Find

This type of error is

- called a **specification ambiguity**
- (not in P&P's taxonomy—we will add it).

**Why did it happen?**

**Why didn't you define the interface fully?**

**People can't think of everything.**

Specification ambiguities are **difficult to uncover** (no one thought of them).

## Ask Someone to Help you Spot Bugs in Your Code

**What else do our think-pair-shares teach us?**

**Code reading!**

Caveat:

- writing on paper/chalkboard
- under time pressure
- is not the best way to produce error-free code.

However, even when

- coding leisurely
- with computer tools to help,
- **someone else is more likely to spot mistakes.**