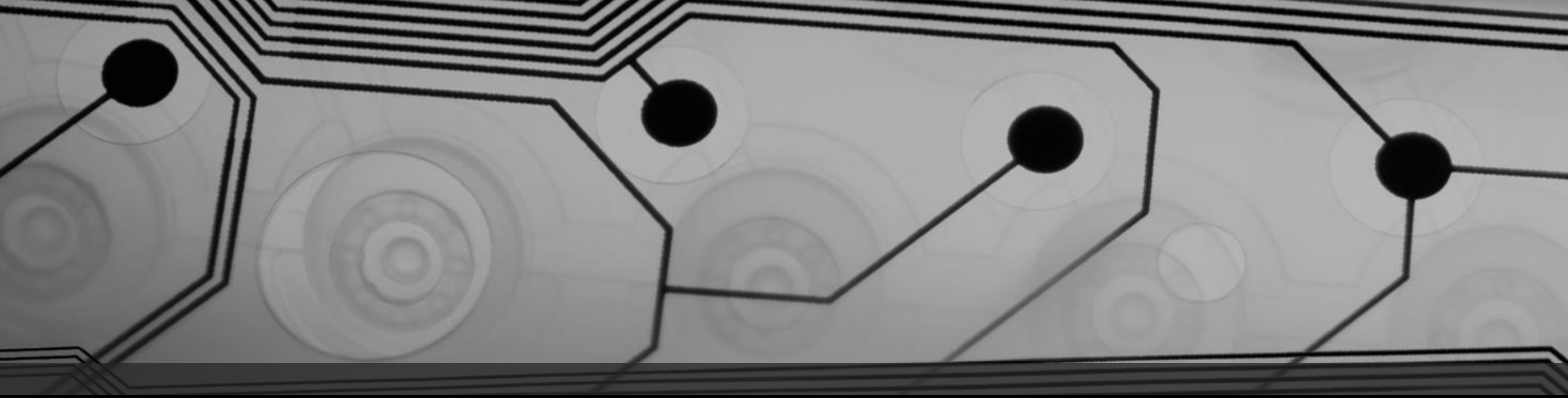

CMSC 131

Fall 2018

Announcements

- Project #3 is due Thursday

this (continued…)

2. Using “this” to call a constructor from another

   Must be the first statement in the constructor

   Examples:

   - Rewrite the constructors from Student class

Visibility and “API”

Who are the “users” of classes we write?

Visibility:

- public
- private

What is “API”?

Examples:

- Scanner API
- MyGrid API
- API for BattleField class

Public vs. Private

Which members should be private?

Key idea: API should be a small and simple as possible!

Why? Two reasons…

Data Encapsulation (Demonstration)

Reason #1: We maintain control over state of our objects.

Let's "encapsulate" the data in Student class:

1. Make the instance variables private
2. Provide getters and setters
3. Modify SubmitServer code so that it works again

Why is this better?

Example: Let's enforce the policy that tokenLevel can never be negative (without modifying our API – Why is this important?)

Data Encapsulation (Demonstration 2)

Reason #2: Wider latitude for modifying what's "under the hood" without having to re-code external modules.

Key Idea: Encapsulate things that might change with an interface that won't change.

- What is "spaghetti code" (and why is it awful)?
- How should our projects be organized?

Demonstration:

Let's modify the underlying data for a Student so that it uses a String to store the idNumber *(without modifying the API!)*