

The background of the slide features a light gray circuit board pattern with various traces and circular components. A solid dark gray horizontal band runs across the middle of the image, serving as a background for the text.

CMSC 131

Fall 2018

Announcements

- Project #5 due on Thursday
- Exam #2 in two weeks (11/19)

Java Interfaces

What is a Java Interface?

Continue Example: Tours.Java, TourGuide.java, Tourist.java, etc.

Polymorphism (via Interfaces)

Observations:

- What does it mean for a class to “implement” an interface?
- Tourguide guide;
 What kind of objects can be assigned to this variable?
- What methods can be run via the guide variable?
- What happens when we call a method via the guide variable:
 `guide.sayGreeting();`

Wrappers

What is a wrapper class?

What does this accomplish?

Have we seen examples of wrappers?

- FancyWord
- MyDouble

Java's built-in wrappers around primitives:

Byte, Short, Integer, Long, Float, Double, Character, Boolean

- Why do these exist?
- Note that they are all immutable
- Let's look at the API for one of them (Integer)

Auto-Boxing and Auto-Unboxing

- What is auto-boxing/auto-unboxing?
- Why is this useful?

FindMin Example

Let's write a method like this (and a JUnit test):

```
public static Integer findMin(Integer[] a)
```

Now let's write one that works with Strings (and a JUnit test):

```
public static String findMin(String[] a)
```

How can we use an interface to write ONE universal findMin method?