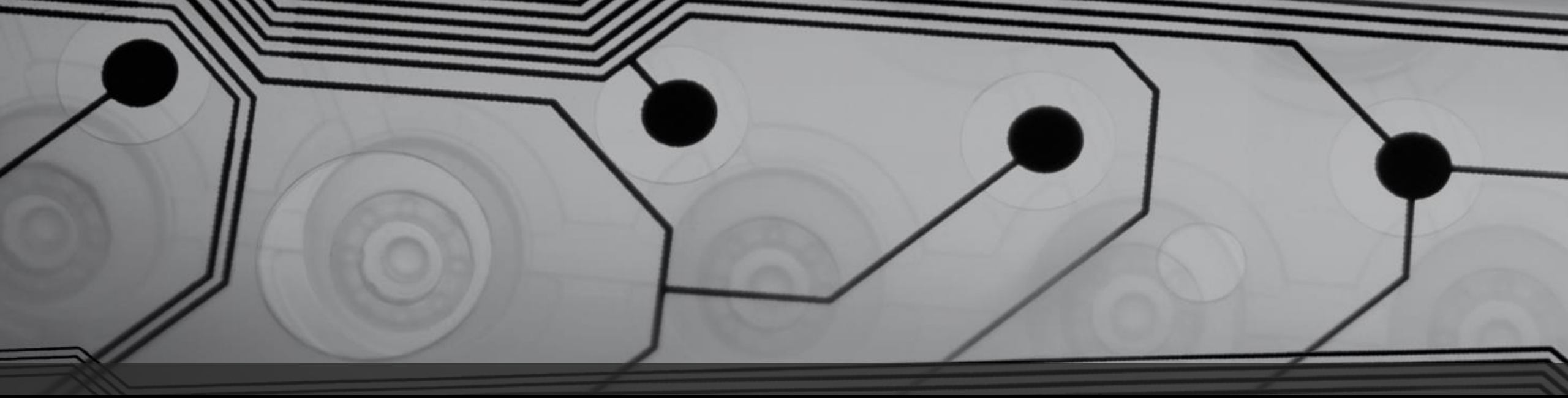

# CMSC 131

Fall 2018

# Announcements

- Today is the last day for schedule adjustment
- Project #0 due Wednesday 9/12

# Last Primitive Type (Boolean)

- boolean

Examples:

```
boolean result = true;
boolean state = false;
boolean hasFever = (temperature > 98.6);
```

# Summary – 8 Primitive Types

Variables for whole numbers:

```
long magnitude = 10500123971L;
int length = 705;
short height = 25;
byte age = 22;
```

Variables for floating point numbers:

```
double weight = 52.37;
float GPA = 3.98F;
```

Others

```
char symbol = '&';
boolean onFire = true;
```

# Demonstration (BasicTypes.java)

Let's see how to create a new project in Eclipse.

Points to raise:

- How to create a new Project
- How to create a new class (including a stub for main method)
- Declaring more than one variable in a statement
- What about spaces and blank lines?
- Proper indentation

# Example: TypeProblems.java

You can't usually mix types in Java!

Points to raise:

- Conversions between numerical types
- Distinction between char and String
- In Eclipse: Errors are in red, warning are in yellow

# Arithmetic Operators

| | |
|---|---|
| + | add |
| - | subtract |
| / | divide |
| * | multiply |
| % | modulus |

- Order of precedence?

Evaluate:

```
8 / 4 * 2
```

# Escape Sequences

Try writing a program that prints on the console:

```
I said “hi.”
```

Common escape sequences for String literals:

| | |
|---|---|
| \” | Quotation mark |
| \n | New line |
| \t | Tab |
| \\ | One slash |

# Example: IntegerDivision.java

What is the result of division of two integers in Java?

Example:

What is the value of the expression 28/6

# Comparison Operators

| | |
|---|---|
| < | Less than |
| > | Greater than |
| <= | Less than or equal to |
| >= | Greater than or equal to |

The following are “boolean expressions”:

```
7 < 12
8 > 50
2 <= 7
2 <= 2
x < 50
y >= z
```

# Equality Operators

| | |
|---|---|
| == | Equality |
| != | Not equal to |

The following are “boolean expressions”:

```
7 == 12
7 != 12
x == 5
z != y
```

# Example:  EqualityWithObjects.java

```
String a = myScanner.next();
String b = myScanner.next();
System.out.println(a == b);
```

Results are probably not what you want.  (We'll see why later… )

IMPORTANT:  == works with primitives.  To compare two objects use

```
a.equals(b)     // boolean expression
```