CSE 121 – Lesson 5

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Music: 🌸k-pop girlies playlist🌸

sli.do #cse121

Announcements, Reminders

- Creative Assignment 1 released Wednesday
  - Due Tuesday, July 11th 11:59 PM

- Resubmission Cycle 1 was released yesterday, due next Thursday 11:59 PM

- **Quiz 0 [Take-home quiz]: Monday, July 10th**

  - **Will be open 12:01 AM – 11:59 PM**

  - **Open note, open internet, no AI assistants, light collaboration**

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Last Time

- Nested for loops
  - Syntax & conventions: `(i, j, k)`
  - Applications
- Random
  - `nextInt(int max)`: returns random `int` value [0, max) i.e. between 0 and max-1

Random rand = new Random();
type   name   Random creation code

(PCM) Methods

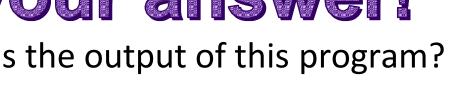Writing our own *methods* allow us to define our own statements / commands in Java!

- Naming conventions for methods are the same as variables: camelCased

```java
public static void myMethod() {
    /***
    Your code here
    **/
}
```

Poll in with your answer!

What is the output of this program?

```
public class MyClass {
    public static void main(String[] args) {
        welcome();
        hello();
        welcome();
        glad();
    }

    public static void hello() {
        System.out.println("Hello!");
    }

    public static void goodbye() {
        System.out.println("Goodbye.");
    }

    public static void welcome() {
        System.out.println("Welcome!!");
    }

    public static void glad() {
        System.out.println("Glad you're here.");
    }
}
```

A.
```
Hello!
Goodbye.
Welcome!!
Glad you're here.
```

B.
```
Hello!
Welcome!!
Glad you're here.
```

C.
```
welcome
hello
welcome
glad
```

D.
```
Welcome!!
Hello!
Welcome!!
Glad you're here.
```

Scope

The part of a program where a variable exists.

- From its declaration to the end of the { } braces
- Ex: a variable declared in a for loop only exists in that loop
- Ex: a variable declared in a method exists only in that method

```java
public static void example() {
    System.out.println("hello");
    int x = 3;
    for (int i = 1; i <= 10; i++) {
        System.out.println(x);
    }
}
```

i's scope

x's scope

Class Constants

A fixed value visible to the whole program (the entire *class*).

- Value can be set only at declaration; cannot be reassigned (so the value is *constant*)

```
public static final type NAME_OF_CONSTANT = expression;
```

(PCM) Parameters

A value passed to a method by its caller

```
public static void myMethod(int num) {
    System.out.print(num + " is the best!");
    ...
}
```

Calling a method with a parameter…

```
myMethod(42);
```

Poll in with your answer!

What will be the last line of output after this code has executed?

```java
public static void main(String[] args) {
    int count = 5;
    line(count);
    System.out.println("count is: " + count);
}

public static void line(int count) {
    for (int i = 1; i <= count; i++) {
        System.out.print("*");
    }
    count++;
    System.out.println();
}
```

A. count is: 5

B. count is: 6

C. count is: 1

D. I'm lost

Poll in with your answer!

What is the output of this program?

```java
public class ParameterMystery {
    public static void main(String[] args) {
        int x = 9;
        int y = 2;
        int z = 5;

        mystery(z, y, x);

        mystery(y, x, z);
    }

    public static void mystery(int x, int z, int y) {
        System.out.println(z + " and " + (y - x));
    }
}
```

A. 2 and 4
9 and 3

B. 5 and -7
5 and -7

C. 9 and -3
5 and -7

D. I'm lost