CSE 121 – Lesson 11

User Input (Scanner) & more while loops

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sli.do #cse121-11

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Today's playlist:
CSE 121 24wi lecture beats :D

Announcements & Reminders

- Quiz 1 is next Thursday, February 15th!
  - quiz covers up until Wednesday's lecture (i.e. includes while loops, but not Scanner or next Wednesday's material)
  - if you're sick – please stay home and email Elba & me (before your quiz time)
- Programming Assignment 2 will be released later tonight
  - Due Tuesday, February 20th
- No pre-class work for Wednesday :)

Poll in with your answer!

How would you describe what the variable x calculates?

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```
public static void mysteryMethod(
    Random rand, int sides, int lucky
) {

  int roll = -1; // priming the loop
  int x = -1;
  while (roll != lucky) {
    roll = rand.nextInt(sides) + 1;
    if (x < roll) {
      x = roll;
    }
  }
  System.out.println(roll + ": it's my lucky num!");

}
```

A. The largest value rolled
B. The smallest value rolled
C. The last value rolled
D. The first value rolled
E. The sum of all values rolled
F. Error
G. -1

Poll in with your answer!

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How would you describe what the variable x calculates?

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  while (roll != lucky) {
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    if (x < roll) {
      x = roll;
    }
  }
  System.out.println(roll + ": it's my lucky num!");

}
```

Another way to think about this block of code:

```
if (roll > x) {
    x = roll;
}
```

Poll in with your answer!

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How would you describe what the variable x calculates?

```
public static void mysteryMethod(
    Random rand, int sides, int lucky
) {

  int roll = -1; // priming the loop
  int x = -1;
  while (roll != lucky) {
    roll = rand.nextInt(sides) + 1;
    if (x < roll) {
      x = roll;
    }
  }
  System.out.println(roll + ": it's my lucky num!");

}
```

Yet another way to think about this block of code:

```
x = Math.max(x, roll);
```

(PCM) Scanner

```
Scanner console = new Scanner(System.in);
```

type name Scanner construction code

An **object** that we can use to *read in input*

In the `java.util` "package"!

Methods	Description
`nextInt()`	Reads the next token from the user as an `int` and returns it.
`nextDouble()`	Reads the next token from the user as an `double` and returns it.
`next()`	Reads the next token from the user as an `String` and returns it.
`nextLine()`	Reads an *entire line* from the user as an `String` and returns it.

(PCM) Tokens

A unit of user input, as read by the `Scanner`

- Tokens are separated by *whitespace* (spaces, tabs, new lines)

```
23   John Smith
       42.0     "Hello world"  $2.50 "  19
```

Poll in with your answer!

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When calling the following method, which of these user inputs would not cause an error? (choose multiple)

```
public static void cornbear() {
  Scanner console = new Scanner(System.in);
  int amt = console.nextInt();
  String firstName = console.next();
  String secondName = console.next();
  double price = console.nextDouble();
}
```

A. 6 Lucy's Treats $12.48

B. 3 Oatmilk Latte 16.47

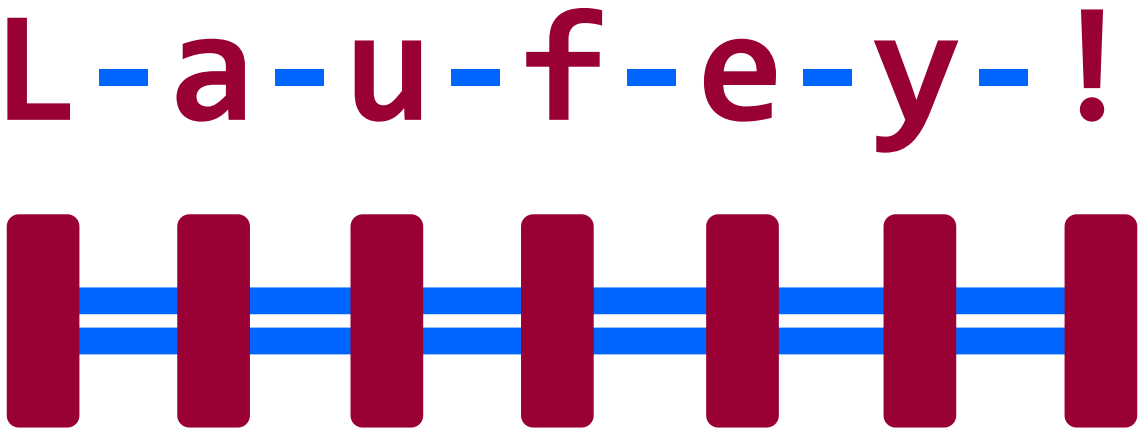
C. 2 The Hunger Games 21.98

D. 4 Gigis 900.24

E. 2 Grammy Awards 90095

Fencepost Pattern

Some task where one piece is repeated *n* times, and another piece is repeated *n-1* times and they alternate



Quick Meals for Thought (Names)

What assumptions are we making here?

```
String firstName = console.next();
String lastName = console.next();
```

1. All first and last names have no spaces
2. All people only have one first or last name
3. All people have at least one first or last name

Interesting readings: Falsehoods Programmers Believe About Names, For Afghans, Name and Birthdate Census Questions Are Not So Simple

Quick Meals for Thought (Inputs)

Another assumption: all computer users have a keyboard & mouse!

- many blind & low-vision users only use keyboards (no mice)
- some users cannot use keyboards and use alternatives
  - e.g. "switch access" – famously used by Stephen Hawking

This isn't "just" about disability:

- your user might be on a phone, tablet, gaming console, or "smart" TV!
- your user could be using text-to-speech!
- your user's keyboard or mouse might be broken!

Recent Development: Accessible Controllers