

CSE 121 Lesson 11:

User Input (Scanner) and while loops

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Spring 2024



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[sli.do #cse121-11](https://sli.do/#cse121-11)

Today's playlist:
[CSE 121 lecture beats 24sp](#)

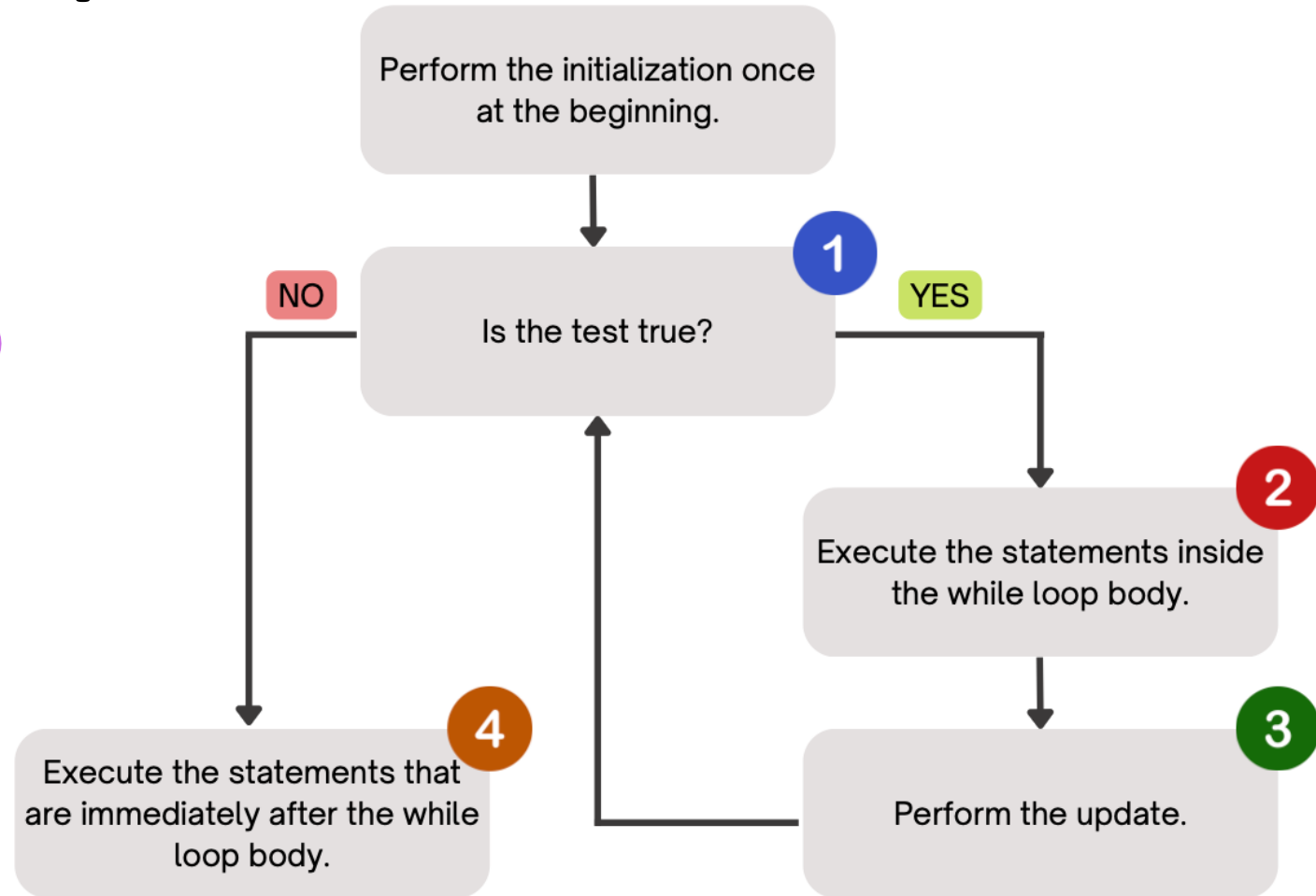
Announcements & Reminders

- Quiz 1 is next Thursday, May 9th!
 - please see [Ed announcement on study resources](#) (including practice quizzes, review sessions, and suggested problems!)
- Programming Assignment 2 will be released later tonight
 - Due Tuesday, May 14th
- No pre-class work for Wednesday :)
- Reminder: Practicelt Problems!

Last time: **While Loops**

```
while (test) {  
    body (statements to be repeated)  
}
```

Repeatedly executes its body **as long as** the logical test is true.



Last time: for loops vs. while loops ✂

For loops and while loops are quite similar! This is the first (but certainly not the last) time where you need to decide which to use!

There's not always a "correct" answer, but some advice:

- thinking of definite versus indefinite conditions
- phrasing the problem out loud!
 - "I will do __ X times" or "for each __ I will __" : sounds like a for!
 - "I will do __ until __" or "while __ is true, do" : sounds like a while!

(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
<code>nextInt()</code>	Reads the next token from the user as an <code>int</code> and returns it.
<code>nextDouble()</code>	Reads the next token from the user as a <code>double</code> and returns it.
<code>next()</code>	Reads the next token from the user as a <code>String</code> and returns it.
<code>nextLine()</code>	Reads an <i>entire line</i> from the user as a <code>String</code> 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)

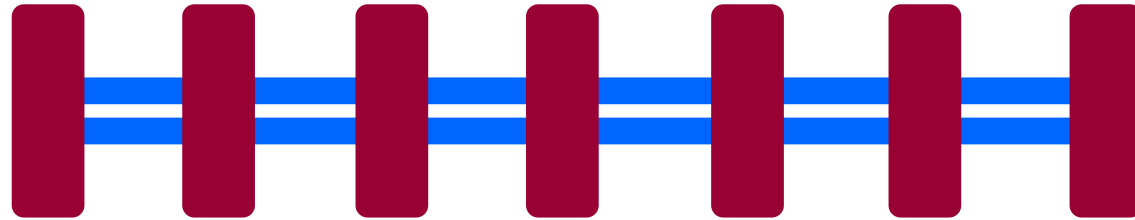
```
public static void cornbear() {  
    Scanner console = new Scanner(System.in);  
    int amt = console.nextInt();  
    String firstName = console.next();  
    String secondName = console.next();  
    double price = console.nextDouble();  
}
```

- 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

L - a - u - f - e - y - !



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

