

LEC 10

CSE 121

# While Loops

BEFORE WE START

*Talk to your neighbors:**What's your favorite spot  
on the Ave?*Music:  [CSE 121 26sp Lecture Tunes](#) **Instructor:** Matt Wang**TAs:** Abdul Amogh Anant Anum Cayden  
Dalton Ethan Hayden Jesse Jessica  
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Ruslana Sam Savannah Spencer Shayna  
Tamsyn TJ Trey

Questions during Class?

Raise hand or send here

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# Agenda (1/3)

- **Announcements, Reminders** ←
- while loop review
- [if time allows] flipping coins!

# Announcements, Reminders

- C2 due **Thursday, May 7<sup>th</sup>**
- R2 due **Thursday, May 7<sup>th</sup>**
  - Eligible: **C0**, P0, C1, P1
  - Reminder: C0 is cycling out of eligibility for resubmission
- P2 out soon, due **Tuesday, May 19<sup>th</sup>**
- Quiz reminders:
  - [Quiz 0 feedback out!](#)
  - Quiz 1: **Thursday, May 14<sup>th</sup>**
    - while loops (today's topic) is the *last* topic on Quiz 1

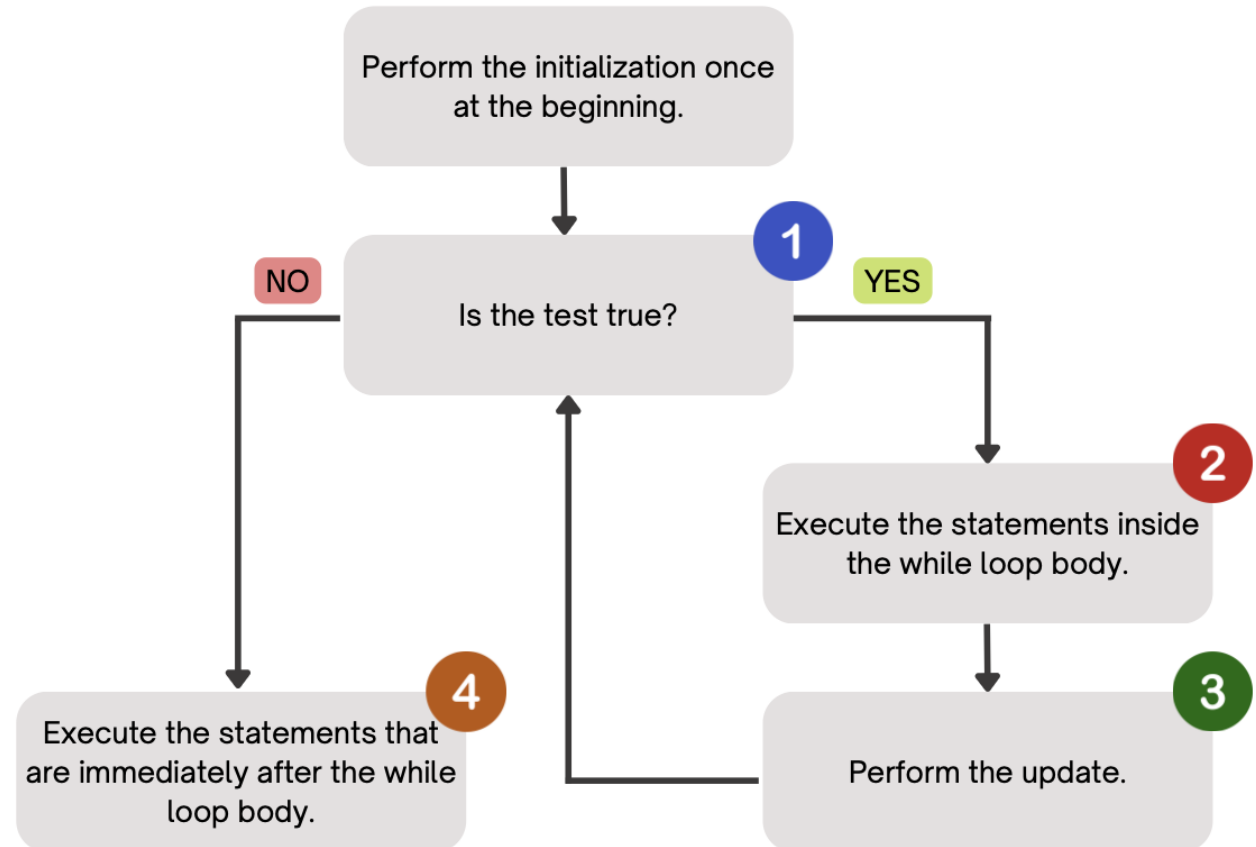
# Agenda (2/3)

- Announcements, Reminders
- **while loop review** ←
- [if time allows] flipping coins!

# PCM Review: while loops

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

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





# Practice: Think



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```
public static void mystery(Random randy,
                           int lucky) {

    int roll = -1; // "priming" the loop
    int x = -1;

    while (roll != lucky) {
        roll = randy.nextInt(20) + 1;
        if (x < roll) {
            x = roll;
        }
    }
    System.out.println("Lucky number " + x);
}
```

How would you describe what the variable x calculates?

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



# Practice: Pair

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```
public static void mystery(Random randy,
                           int lucky) {

    int roll = -1; // "priming" the loop
    int x = -1;

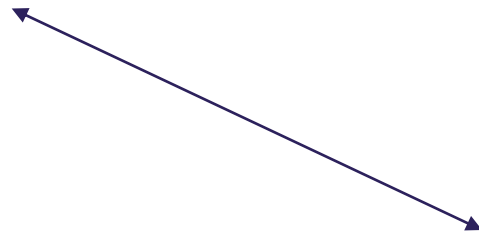
    while (roll != lucky) {
        roll = randy.nextInt(20) + 1;
        if (x < roll) {
            x = roll;
        }
    }
    System.out.println("Lucky number " + x);
}
```

How would you describe what the variable x calculates?

- A. The largest value rolled
- B. The smallest value rolled
- C. The first value rolled
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# for loops are while loops?

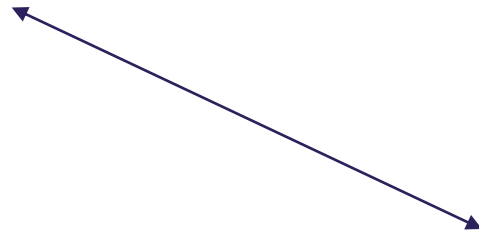
```
for (int i = 0; i < bigYikes; i++) {  
    // ...  
}
```



```
int i = 0;  
while (i < bigYikes) {  
    // ...  
  
    i++;  
}
```

# for loops are while loops! (almost\*)

```
for (int i = 0; i < bigYikes; i++) {  
    // ...  
}
```



```
int i = 0;  
while (i < bigYikes) {  
    // ...  
    i++;  
}
```

\*as a technical note, these aren't exactly the same – there are some minor technical details that are different, most notably the scope of `i` is different in the two loops

# 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:

- is the condition definite or indefinite
- Describing the problem!
  - “I will do \_\_ X times” or “for each \_\_ I will \_\_” – sounds like for!
  - “I will do \_\_ until” or “while \_\_ is true, I will” – sounds like while!
- it's okay to change your mind after you try one approach!

# Agenda (3/3)

- Announcements, Reminders
- while loop review
- **Flipping coins!** ←