LEC 10

CSE 121

While Loops

BEFORE WE START

Please sit in the middle 4 rows*

Talk to your neighbors:

What's your favorite spot on the Ave?

Instructor: Hayden Feeney

TAs: Anisha Savannah William Cayden Tamsyn

Questions during Class?

Raise hand or send here

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Agenda (1/3)

- **Announcements, Reminders** ⟵
- while loop review
- flipping coins!

Announcements, Reminders

- C2 due **Thursday, July 30th**
- R2 due **Thursday, July 30th**
  - Eligible: **C0**, P0, C1, P1
  - Reminder: C0 is cycling out of eligibility for resubmission
- P2 out soon, due **Thursday, August 6th**
- Quiz reminders:
  - Quiz 0 feedback out!
  - Quiz 1: **TOMORROW (Thursday, July 30th)**
    - Can't make it? Email Hayden at hbfeeney@cs.washington.edu ASAP

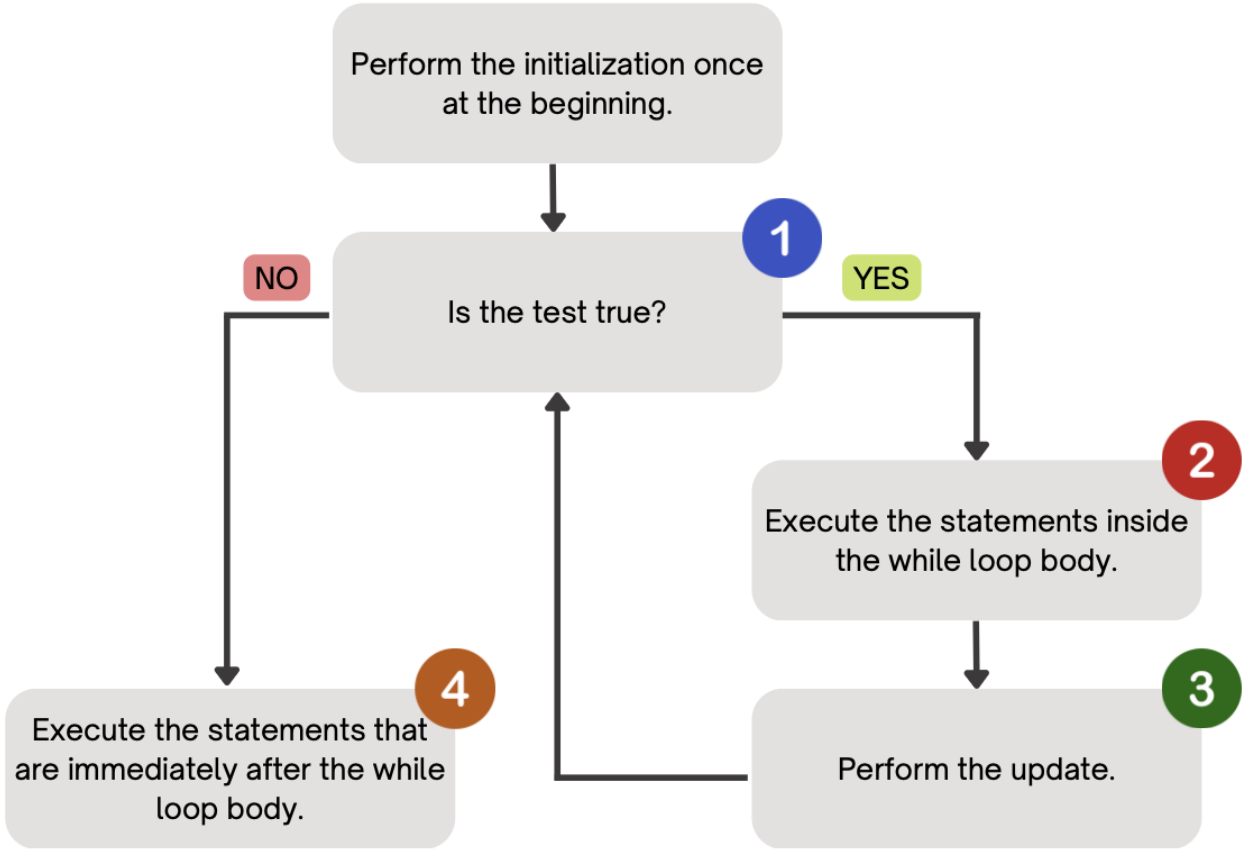
Agenda (2/3)

- Announcements, Reminders
- **while loop review** ⟵
- 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("X is " + 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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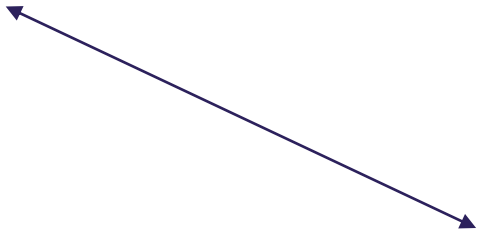
```
public static void mystery(Random randy,
                           int lucky) {

  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("X is " + 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

for loops are while loops?

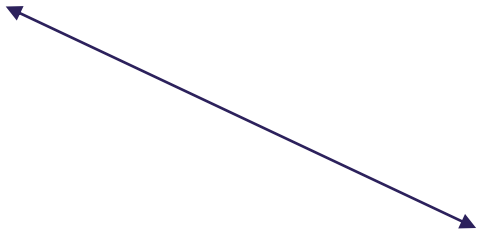
```
for (int i = 0; i < bigYikes; i++) {
  // ...
}
```



```
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!** ⟵