LEC 10

CSE 121

While Loops

Questions during Class?

Raise hand or send here

sli.do #cse121

BEFORE WE START

Talk to your neighbors:

What's your favorite spot on the Ave?

Music: ❄ CSE 121 26wi Lecture Tunes ❄

Instructor: Miya Natsuhara

TAs:

Amogh	Hayden	Anum	Sam	Shayna
William	Aki	Abdul	Ethan	Jesse
Johnathan	Spencer	Janvi	Jessica	Minh
Anant	Savannah	Navya	Paul	Cayden
Reese	Tamsyn	Ruslana	Carson	

Agenda

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

Announcements, Reminders

- C2 due **Thursday, February 12th**
- R2 due **Thursday, February 12th**
  - Eligible: **C0**, P0, C1, P1
  - Note: C0 is cycling out of eligibility for resubmission
- P2 out soon, due **Tuesday, February 24th**
- Quiz reminders:
  - Quiz 0 feedback coming this week!
  - Quiz 1: **Thursday, February 19th**

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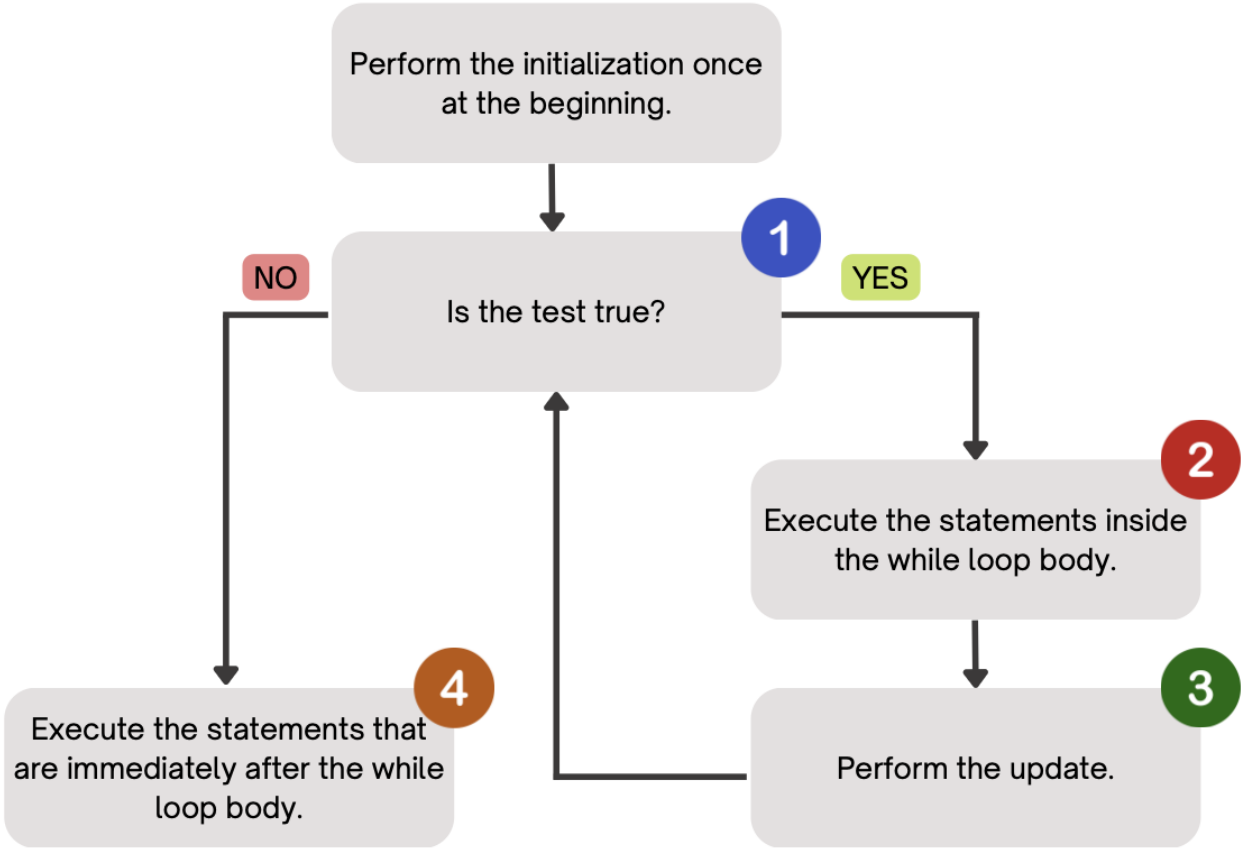
PCM Review: `while` loops

```
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

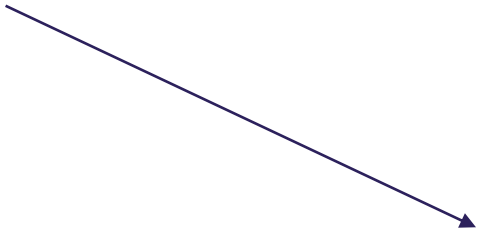
C. The first value rolled

D. The last value rolled

E. The sum of all values rolled

for loops are while loops?

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

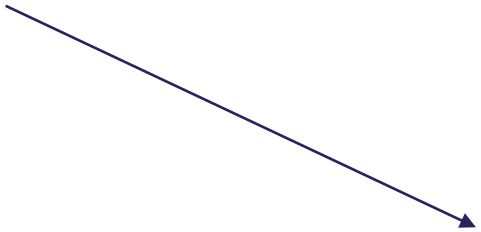


```
int i = 0;
while (i < bigYikes) {
  // ...

  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!

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