LEC 09

CSE 121

Conditionals

BEFORE WE START

Talk to your neighbors:

How are you doing? (like, actually)

Music: CSE 121 26sp Lecture Tunes

Instructor: Matt Wang

TAs:

Abdul	Amogh	Anant	Anum	Cayden
Dalton	Ethan	Hayden	Jesse	Jessica
Johnathan	Minh	Navya	Paul	Reese
Ruslana	Sam	Savannah	Spencer	Shayna
Tamsyn	TJ	Trey		

Questions during Class?

Raise hand or send here

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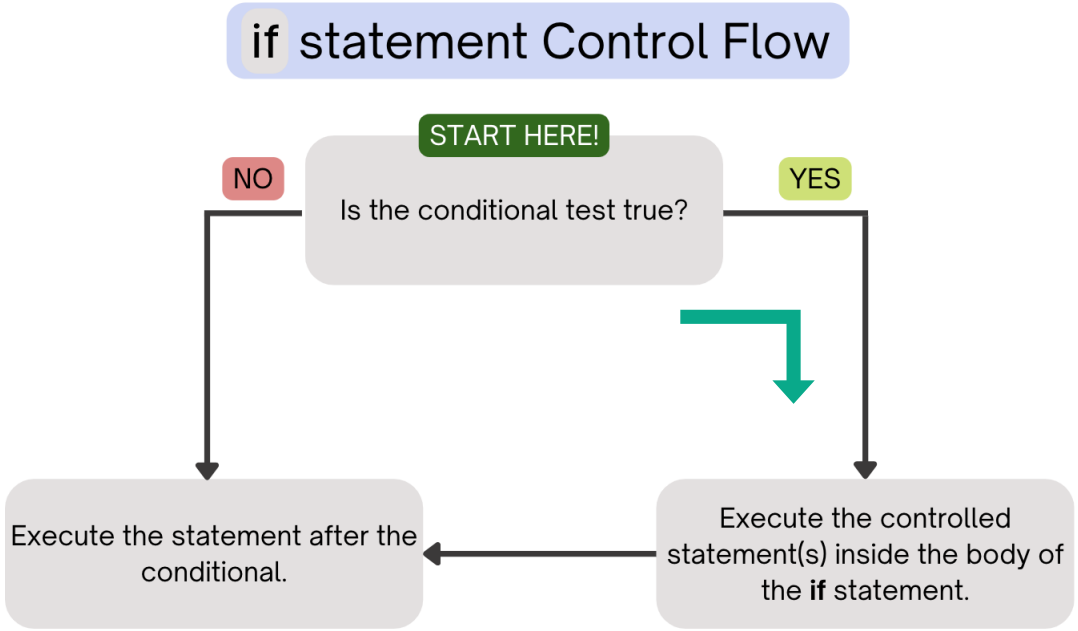
Announcements, Reminders

- **C2** released, due **Thursday, May 7th**
- **R2** out yesterday, due **Thursday, May 7th**
  - the last time C0 is eligible for resubmission!
  - "Re-resubmissions" post
- Quiz reminders:
  - Quiz 0 grades – we're working on it!
  - Quiz 1 is on **Thursday, May 14th**

PCM Review: if Statements

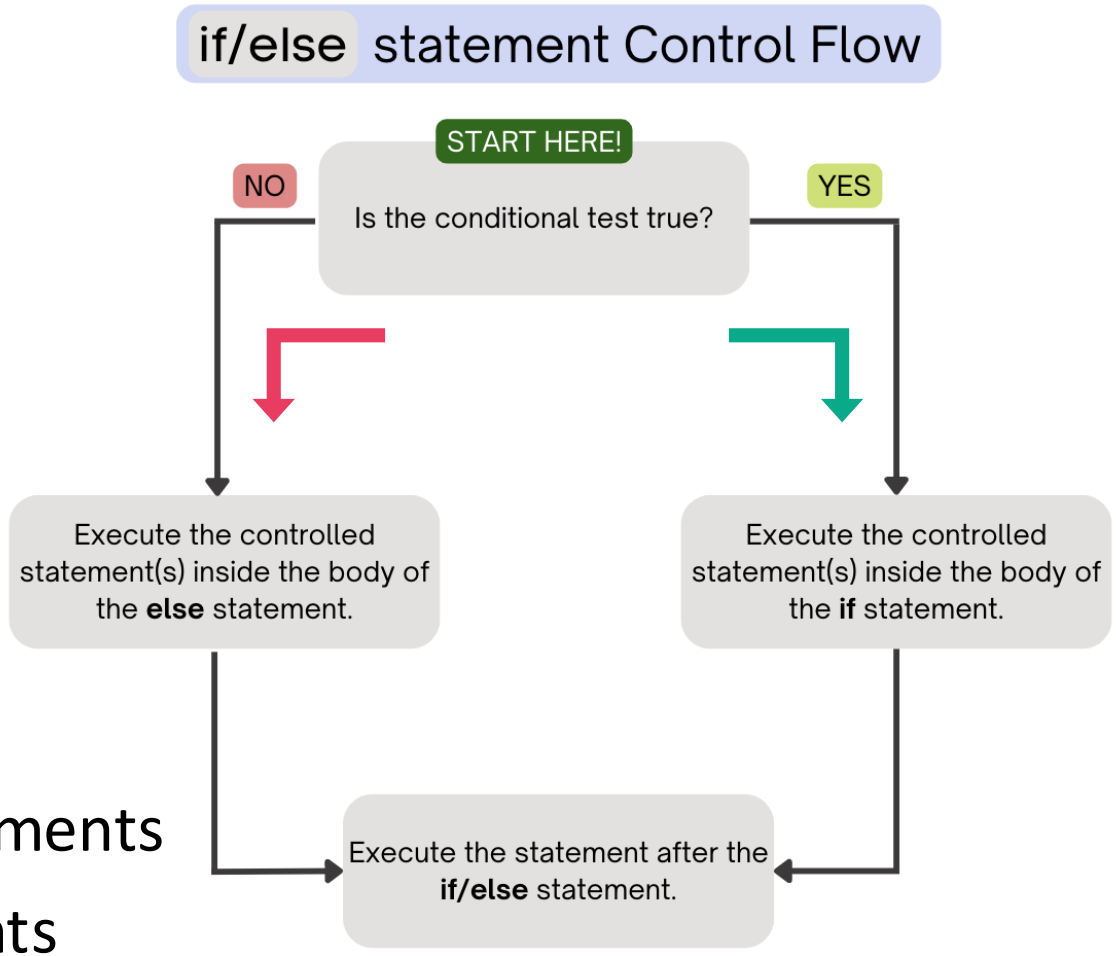
```
if (test) {
    body (statements to be executed)
}
```



Executes a block of statements
if and only if the test is **true**

PCM Review: if-else

```
if ( test ) {
        statement(s)
} else {
        statement(s)
}
```

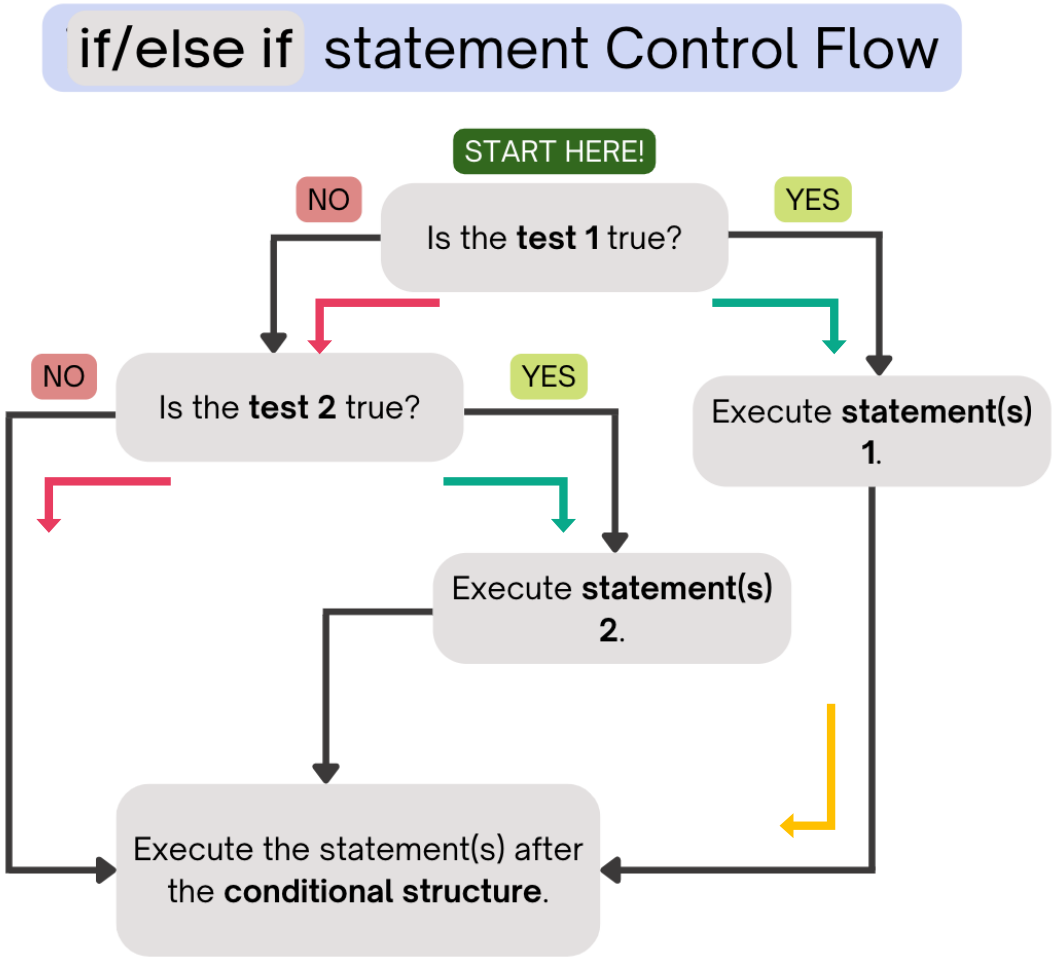


1. If the test is **true**: execute block of statements
2. If **false**, execute other block of statements

PCM Review: if-else if

```
if ( test ) {
        statement(s)
} else if (test) {
        statement(s)
}
```

1. If the first test is **true**, execute that block
2. If not, proceed to the next test, and repeat
3. If none were true, don't execute any blocks



Note After entering an if /else if block, ***skip*** all remaining blocks.

Reminder: Boolean Operators!

- ! (NOT)
- && (AND)
- || (OR)
- relational: <, >, <=, >=, ==, !=

Very common with conditionals

```
if (day.equals("Wed") || day.equals("Fri")) {
    return "121 lecture!";
} else if (day.equals("Tue") || day.equals("Thu")) {
    return "121 quiz section!";
} else {
    return "no 121!";
}
```

Practice: Think

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```
public static void main(String[] args) {
  for (int i = 1; i <= 3; i++) {
    System.out.print(mystery(i));
  }
}
public static String mystery(int n) {
  String response = "even ";
  if (n % 2 == 1) {
    response = "odd ";
  } else if (n == 1) {
    response = "one ";
  }
  return response;
}
```

What does this program output?

A. odd even odd

B. one even odd

C. one even even

D. even even even

Practice: Pair

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```
public static void main(String[] args) {
  for (int i = 1; i <= 3; i++) {
    System.out.print(mystery(i));
  }
}
public static String mystery(int n) {
  String response = "even ";
  if (n % 2 == 1) {
    response = "odd ";
  } else if (n == 1) {
    response = "one ";
  }
  return response;
}
```

What does this program output?

A. odd even odd

B. one even odd

C. one even even

D. even even even

"Useless" Conditionals

```
public static void main(String[] args) {
  for (int i = 1; i <= 3; i++) {
    System.out.print(mystery(i));
  }
}
public static String mystery(int n) {
  String response = "even ";
  if (n % 2 == 1) {
    response = "odd ";
  } else if (n == 1) {
    response = "one ";
  }
  return response;
}
```

This else if statement never runs!

Common Problem-Solving Strategies

- **Analogy** – Is this similar to another problem you've seen?
- **Brainstorming** – Consider steps to solve problem before jumping into code
  - Try to do an example "by hand", then outline steps
- **Solve sub-problems** – Is there a smaller part of the problem to solve?
- **Debugging** – Does your solution behave correctly?
  - What is it doing?
  - What do you expect it to do?
  - What area of your code controls that part of the output?
- **Iterative Development** – Can we start by solving a different problem that is easier?