

## Review

- How can we make some code execute only "sometimes"?
  - What are alternative Python constructs to do that? How do they differ?
- How do we express the condition that two things must be true to satisfy a condition?

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## Short-circuit Evaluation

- Don't necessarily need to evaluate all expressions in a compound expression
- A **and** B
  - If A is **False**, compound expression is **False**
- A **or** B
  - If A is **True**, compound expression is **True**
- No need to evaluate B
  - Put more important/limiting expression first
  - Example: 

```
if count != 0 and sum/count > 10:
    do something
```

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## Lab 2 Feedback

- Getting a little tougher in grading
  - Paying more attention to style (e.g., variable names), efficiency, readability, good output
  - More strict on adhering to problem specification
  - Constants
  - Demonstrate program **more than once** if gets input from user or outcome changes when run again
    - Find errors before I do!

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## Lab 2 Feedback: Common Issues

- Efficiency

```
i=6
for j in range(1, 9):
    result = i % j
    print( i, "%", j, "=", result)
```

vs

```
for j in range(1, 9):
    i=6
    result = i % j
    print(i, "%", j, "=", result)
```

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## Lab 2: Feedback

- Careful not to do too much in one statement

```
print("Your hydrocarbon's molecular mass is",
      round(C*C_WEIGHT+H*H_WEIGHT+O*O_WEIGHT,3),
      "g/mol")
```

Difficult to read, debug

- Comments on the OO graphics programming
  - E.g., # Drawing the snow person's body
  - Vs. # draw the second circle

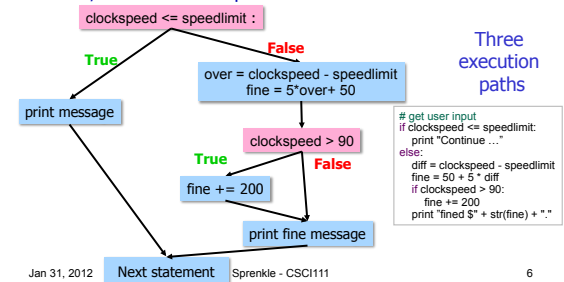
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## Review: Testing with **if** Statements

- Make sure have test cases that execute each branch in control flow diagram
  - i.e., Each execution path is "covered"



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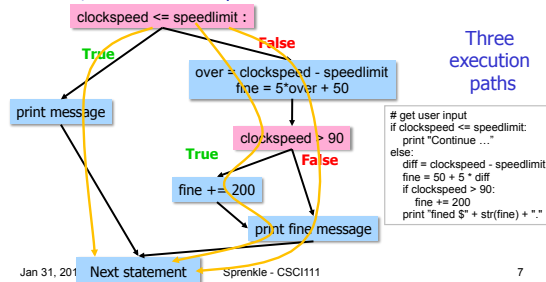
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## Review: Testing with `if` Statements

- Make sure have test cases that execute each branch in control flow diagram

➤ i.e., Each execution path is "covered"



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## Compare Implementations

```
diff = clockspeed - speed_limit
fine = 50+5*diff
if clockspeed > EXCESSIVE_SPEED:
    fine += 200
```

```
if clocked_speed > EXCESSIVE_SPEED:
    fine = 50+5*(clocked_speed-speed_limit)+200
else:
    fine = 50+5*(clocked_speed-speed_limit)
```

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## Review: Efficiency of `if` statements

- Which is more efficient?

```
if x < 0:
    print x, "is negative"
if x >= 0:
    print x, "is 0 or positive"
```

Additional computation

```
if x < 0:
    print x, "is negative"
else:
    print x, "is 0 or positive"
```

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## Lab 3 Overview

- Practice Python programming
  - Practice with Graphics API and animation
    - Screen capture using `xv` tool
    - Create a Web page to display artwork
  - Conditionals practice
- Don't spend too much time on creating your picture
  - After get good draft, start on the conditional problems
  - Then go back and perfect your artwork

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