CS 115 Lecture

Augmented assignment operators

Taken from notes by Dr. Neil Moore

Augmented assignment

Often you want to perform an operation on a variable and store the result in the same variable:

```
num_students = num_students + 1
price = price * 0.9  # 10 percent discount
change = change % 25  # change after quarters
```

Python provides a shorthand for this, **augmented assignment operators:**

```
num_students += 1
price *= 0.9
change %= 25
```

Augmented assignment

- Combines assignment with an arithmetic operator
- The precedence is the same as assignment (=)
  - Evaluate the right hand side first
  - What does this do? `product *= i + 1`
  - does NOT do: `product = product * i + 1`
  - DOES do: `product = product * (i + 1)`
    - because + is higher precedence than *=
- Sometimes called “compound operators” in other languages

Examples:

- x has value 7 before the statement **x += 5** executes, x has value 12 afterward (7 + 5 = 12)
- y has value 10 before, **y /= 5** executes, y is now 2.0 (float because / gives a float always)
- t has value 12 before, **t %= 5** executes, t becomes 2 (12 % 5 = 2)
- z has value 3 before, p has the value 12 before, **z *= p – 5** executes, p doesn't change, z becomes 21 (p-5 is 12-5 is 7, 3 * 7 = 21)