Python Basics

Anthony Winchester
Birmingham-Southern College

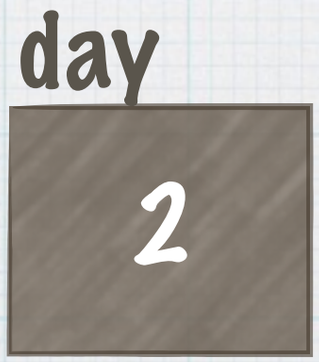
Statement

* Statement - program instruction
* One statement per line
* Similar to a sentence (bullet) in English

Variable/Assignment

* Similar to a variable in math
* It is a box in memory used to store information
* We assign values to store within the variable

day = 2



Variable Rules

* Must start with a lowercase letter
* Cannot contain spaces
* Cannot be a keyword (changes color when you type it in)
* Do not have to specify type - Python does this at runtime

Expression

* Returns a value
* Simple math problem
* String manipulation

```
lunchCost = 5.50 + 1.00 + 1.15
```

Example: Name the different components

```
wage = 20
hours = 40
weeks = 50
salary = wage * hours * weeks

print('Salary is:', salary)

hours = 35
salary = wage * hours * weeks
print('New salary is:', salary)
```

Comments

* Ignored by the interpreter
* Purely for program readability or notes to the programmer
* Denoted by '#'

```
#Fifth week of class
week = 5
```

Output

* print()
* We can print literal strings using quotation marks

print("Today is Monday!") or print('Today is Monday!')

* We can print variables

print(week)

* We can print a combination

print("Today starts week number", week, "of class")

Input

* input() function
* The word function is typically used to denote that a value is returned
* What does it mean for something to be returned?

Input

* Reads in a string from the user
* Will read in all characters until the user hits the return key

```
print("What is your name?")
name = input()
```

* This is the same as....

```
name = input("What is your name?")
```

What happens if you want to read in a number?

* The String type means words/text
* Numbers can be integers (int) or decimals (decimal or float)

```
print("Enter your score:")
score = int(input())

print("Enter your average:")
average = float(input())
```

Errors

* Syntax errors
    * Equivalent to spelling/grammar errors
        * The cat meowed at the dawg.
* Logic errors
    * Equivalent to a content error
    * The cat barked at the dog.

Let's Code!

* Let's write three programs:

1. print Hello, World!

2. Read in the user's name and print: Good morning, [user's name]!

3. Read in two numbers from the user. Print the sum, difference, and product.

   Sum: [sum]

   Difference: [first number - second number]

   Product: [product]