Intro to Programming (No Prior Experience)

CSCI-UA.0002-011

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T/R 4:55PM-6:10PM

Class Website

emilydidthis.github.io/CSCI-UA.0002-Fall22

Agenda

— Site updates, introduce Ed Forum
— Review Module 1 / Go over Quiz 1
— Practice Problems
— Commenting
— Assignment #1

Module 1

- Setting up IDLE
- Functions + Function Calls
- Strings + String Literals
- Basic formatting using the print() function
  - `sep`, `end`
- Variables
- Input function
- Numeric literals
- Math operators

Quiz

- Calling functions
- Variables
  - Definition
  - Naming
- Print variable without error
- Data Types: floating points

IDLE

(Integrated DeveLopment Environment)

- Two modes:
  - Interactive: commands are immediately processed as they are received
  - Script: write a program (save as a "text file" on your computer) and run it whenever you like
- *We will mainly be using script mode

Anatomy of a function you call

```
functionName(<arguments>)
```

Calling `print` function

```
print()
```

Calling `print` function with arguments

```
print(value, ..., sep=" ", end="\n")
```

Print the following output:

```
firstName, lastName, middleInitial
```

Print the following output [Solution] :

```
print("firstName", "lastName", "middleInitial", sep=", ")

# Output: firstName, lastName, middleInitial
```

Print the following output:

```
1*2*34*5*6
```

Print the following output:

```
print(1, 2, 3, sep="*", end="")
print(4, 5, 6, sep="*", end="")

Output: 1*2*34*5*6
```

Variables

"Buckets" that can store information in your computers memory

```
speed = 5
```

```
myName = "Emily"
```

Naming Variables

- can't use Python's "reserved" words
- can't contain spaces (can use "_" in place) or special characters (!@#$%^&*)
- can only start with a letter or underscore; can be followed by any alphanumeric character after that

Python Reserved Words

'False', 'None', 'True', 'and', 'as', 'assert', 'break', 'class', 'continue', 'def', 'del', 'elif', 'else', 'except', 'finally', 'for', 'from', 'global', 'if', 'import', 'in', 'is', 'lambda', 'nonlocal', 'not', 'or', 'pass', 'raise', 'return', 'try', 'while', 'with', 'yield'

Legal or Illegal variable name?

```
class = 2
```

```
class_avg = 70
```

```
classAvg = 99
```

```
_class_avg = 99
```

```
2ndclassavg = 88
```

```
classavg! = 99
```

Legal or Illegal variable name?

`class = 2` → ❌ `class` is reserved

`class_avg = 70` → ✅

`classAvg = 99` → ✅

`_class_avg = 99` → ✅

`2ndclassavg = 88` → ❌ cannot start with number

`classavg! = 99` → ❌ alphanumeric only

Common Variable Naming Conventions

`rocckettopspeed = 100` → valid, but hard to read

`rocket_top_speed = 100` → underscored

`rocketTopSpeed` → camelCase

Programming Challenge

```
item1 = Bread
item2 = Eggs
price1 = $2.99
price2 = $1.99

# Desired Output:
# Item: Bread, Price: $2.99
# Item: Eggs, Price: $1.99
```

Programming Challenge [Solution]

```
item1 = "Bread"
item2 = "Eggs"
price1 = 2.99
price2 = 1.99

print("Item:", item1, "Price:", price1)
print("Item:", item2, "Price:", price2)
```

Programming Challenge [Solution]

```
item1 = "Bread"
item2 = "Eggs"
price1 = 2.99
price2 = 1.99

print("Item:", item1, "Price:", price1)
print("Item:", item2, "Price:", price2)
```

`input` function

```
input()
```

`input` function

```
age = input("How old are you?: ")
```

Debugging Challenge

```
salary = 40000
raise = 100
total = salary + raise

_name = input('What is your name?: ")

print("After reviewing your work this year," _name,
      "we have decided to give you a raise of" raise,
      'making your total salary' total)
```

Programming Challenge: Make a Mad Lib

Write a program that asks the user to type in 4 different words using the following prompts:

- `enter a noun`
- `enter a verb`
- `enter an adjective`
- `enter an adverb`

Output the following text:

`The [adjective] [noun] was very hungry, so it decided to [adverb] [verb] to the nearest restaurant.`

For next time

— Self-Paced Learning Module #2 (due Thursday)

— Quiz #2 (due Thursday)

— Assignment #1 (due next Tuesday)