

Python Basics (class slides)

CSc 110 Python Basics

Announcements

- Trouble accessing Gradescope? Use the link on D2L
- D2L grades are going to be used to calculate your final grade
- Full schedule for office hours can be found at adrianapicoral.com/csc-110/tas.html

Did you set up your workspace?

- Did you download Python 3?
- Did you download VS Code (or PyCharm, or Mu)?
- If not, that's fine, you can use replit.com

What is a program?

The print function

- What does the print function do?

The print function

- `print()` sends characters (strings) to the **standard output**
- By default, the **standard output** of a python program goes to the console.

```
print("some characters")
```

some characters

```
print('some characters')
```

some characters

String operations

String concatenation:

- What will the standard output display when the code below is run?

```
print("hello" + "world")
```

String operations

In your groups, try the following operations:

- String repetition: "abc" * 4
- String concatenation with + and ,. What is the difference?
- Combine both repetition and concatenation to print the following:

They sang AaAaAaAaAaAaAaAaAa

Multiple print statements

- What will the standard output display when the code below is run?

```
print('Are')
print('You')
print('In')
print('College?')
```

Multiple print statements

- By default, the `print` function sends the output cursor to the next line after printing

```
print('Are', end = ' ')
print('You', end = ' ')
print('In', end = ' ')
```

```
print('College?', end = ' ')
```

Are You In College?

What other characters can you use for values for the `end` parameter?

Dealing with special characters

Write a simple program that prints the following output to the python console:

Attendance

- As a group, write your answer to the previous exercise on a whiteboard
- Write on the whiteboard the name of a TA
- Submit your whiteboard answer to Gradescope (take a picture with a phone)

Variables

Variables and assignment

- Variables are names in a program that represent a stored value
- We can assign names to particular values in our program
- When we give a value a name, or update the value stored in a variable, this is called assigning a variable

Demonstration of variable assignment

Variable assignment does not produce any output to the console. Run the following code:

```
first_name = "Mary"  
family_name = "Silva"
```

How would we print these variables?

Statements (vs expressions)

- *Expressions* represent values or the computation of values
- *Statements* represent executable steps in a program.
- Statements often include expressions

Here's a **statement** that invokes the `print` function with the **expression** `3 + 4` as an argument.

```
print(3 + 4)
```

Basic Types

- string: `"hello"` or `'hello'`
- integer: `3`
- float: `3.14`
- bool: `True` or `False`

Use the function `type()` with each literal type.

Operations

Try the following operators with the different types in python:

Quiz 02

current time

You have 10 minutes to complete the quiz.

Your solution needs to print the exact characters shown in your quiz (there are different versions of the quiz) – changes to the characters (for example, not printing the quotes or apostrophe) will be considered as an incorrect solution (zero grade awarded).

Operations and Variable Assignments

Variable assignments are not like math — they can appear in equations that make no mathematical sense.

```
x = 5
print(x)
x = x + 2
print(x)
```

`x = x + 2` means “take the current value of `x`, add it with 2, and assign the resulting value (7) to `x` as its new value.”

Comments

Computer program can include comments, which are simply text that is meant to be read, but not executed.

```
# assign a radius value
radius = 3
# compute the area of a circle
area = 3.1415 * radius ** 2
```

The purpose of comments is to “document” the program so that subsequent readers can more easily understand it, or learn things about it (e.g., its original author).