

# Topic 1: Programming, Spreadsheets, and Computers

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# Updates

- ➊ **Homework 1:** Posted and due this Friday.
- ➋ **Topic 2 (Part 1) and Post-reading:** Posted and due this Friday.
- ➌ Feel free to drop by office hours if you have any questions.
- ➍ As a reminder, I encourage you all to work together to complete the homeworks.

# Input and Print

- **The Input Function**: A builtin function that gets a string from the user.
  - **input()** → Doesn't give a prompt.
  - **input('A test input: ')** → Will output the message "*A test input:*" to the screen and let the user type their input in after it.
- **The Print Function**: A builtin function that takes a string as a parameter (in between the parentheses) and outputs that string
  - **print('Hello, World!')** → Will output the 'Hello, World!'.



# Data Types in Python

- Two types we'll need to know now:
  - **Strings:** A long list of characters accompanied by surrounding quotes (e.g., 'Hello, CS 105!').
  - **Integers:** Whole numbers, both positive and negative.
- You can check the type of a variable or expression with the `type()` function.
- You can convert between them with the `str()` and `int()` functions.
- It's important to keep the type of your variables in mind when programming.
- Keeping types in mind when attempting to deduce what a program is doing is very important.

## Poll Question: Input and Print

Assuming there is a variable `value` with the value 7, which of the following statements prints: `count = 7`.

- ☐ A `print("count = " value)`
- ☐ B `print("count = ", end="value")`
- ☐ C `print("count = ", value)`
- ☐ D `print("count = $value")`

# Poll Question: Addition Operation

In Python  $x + y$  is:

- ☒ A an assignment
- ☐ B a statement
- ☐ C a variable
- ☐ D an expression

# Poll Question: Errors

What happens if I type the following code into a **brand new** Python interpreter:

```
1  x + y
```

- ☐ A Nothing
- ☐ B SyntaxError
- ☐ C NameError
- ☐ D ValueError

# Poll Question: Error

What happens if I type the following code into a Python interpreter?

```
1 print(input("Enter a number: "))
```

- ☐ A No error
- ☐ B SyntaxError
- ☐ C NameError
- ☐ D TypeError



# Poll Question: Errors

What happens if I type the following code into a Python interpreter?

```
1 value = input("Input your favorite number!\n")  
2 print("Your new favorite number is", value + 1)
```

- ☐ A No error
- ☐ B `SyntaxError`
- ☐ C `ValueError`
- ☐ D `TypeError`

# Poll Question: The Print Function

What type of error will Python produce when this segment of code is run?

```
1  x = "Hello, world"  
2  y = 5  
3  foo = x + y + z
```

- ☐ A SyntaxError
- ☐ B NameError
- ☐ C ValueError
- ☐ D TypeError

# Poll Question: Data Types

What is the value of x after the following segment of code runs if the user inputs a 5 and then a 4?

```
1  a = input()
2  b = input()
3  x = a + b
```

- ☐ A String
- ☐ B Integer

# Poll Question: Error

What happens if I type the following into a Python interpreter?

```
1  a = input()  
2  b = input()  
3  a + b = x
```

- ① No error
- ② SyntaxError
- ③ NameError
- ④ ValueError
- ⑤ TypeError

# Your Questions!

# 15 minutes of homework

- Spend 15 minutes working in groups to complete some of homework 1.