404 slide not found

get it, programming

Agenda

- Play lofi
- Intro to python
- #Comments
- `print`()
- Variables
- Input
- Try it yourself
- Conditional Statements
- Data types
- Lists
- Functions

On your computer, open visual studio code and create a new file called `activity.py`, or whatever you want, so long as it ends in `.py`

Let’s get started

Comments (really quick)

Comments are the part of your program that the computer, or ***interpreter*** knows to ignore. Everything in a line after # will be ignored.

```
# This line of code will be ignored
This line of code will not be ignored
```

print()

The `print()` function is used to print something to the screen. What you want to print is put in the parenthesis.

```
# Prints Hello World! to the screen
print("Hello World!")
```

IMPORTANT: The “quotation” marks indicate that what is being printed is “text” or a “string”

Try it!

Try to print something to the screen. Make sure to use (parentheses) and “Quotation marks”

Variables

Variables are...

- Like in math, things that are ***able*** to ***vary***
- Useful for storing info in your program
- ***Declaring*** (or defining) a variable is to set it's value.
- In python, variables can be changed. This is called ***mutability***.

Let’s get started with variables.

```
x = 10 # declare the variable (it exists!)
```

Let’s get started with variables.

```
x = 10 # declare the variable (it exists!)

print("My variable, x, is ", x) # print out the variable
```

Let’s get started with variables.

```
x = 10
y = 5

print("X + Y =", x + y) # We can add variables together!
```

Let’s get started with variables.

```
x = 10
y = 5
z = x + y # You can set a variable to other variables

print("x + y =", z)
```

Let’s get started with variables.

```
name = "John Doe" # You can set variables to text as well!
age = 30 # or integers

print("My friend’s name is", name, "and they are", age, "years old")
```

Input

User input in python is done with a function called, you guessed it, `input`. you can define a variable to a prompt. Example:

```
name = input("What is your name?    ") # Define a variable called name to the input from a prompt



age = input("How old are you?   ") # Define a variable called age to the input from a prompt



print("Your name is ", name, "and you are ", age, "years old") # Print these variables

# Note the use of commas
```

Now you try!

Based on what you now know about input and print, try to make a program that prints someone’s input.

Conditional Statements

Conditional statements are at the heart of programming. In essence, it is simply saying "if this, than that."

```
var = True # Define variable 'var'

if var == True: #If it's true ...

    print('My var is true!') # Print that to the terminal

elif var == False: # If it's false...

    print('My var is false') # Print that to the terminal

else:

  print("Your var could be of a different data type, which you will learn about in the next section.")
```

Data Types

- String
  - Type: str
  - Egs: `“Hello”, “Text”, “String”`
- Integer
  - Type: int
  - Egs: `5, 4, 6, 10`
- Floating Point number (number with a decimal)
  - Type: float
  - Egs: `2.5, 1.25, 5.75, 1.8`
- Boolean
  - Type: bool
  - Egs: `True, Flase`

Data types can be changed

To convert x to a ‘string’, do `str(x)`

To convert x to a integer, do `int(x)`

To convert x to a float, do `float(x)`

To convert x to a boolean, do `bool(x)`

Example of Data Types

```
x = 5 # Define x, you can change this to whatever you want.

if type(x) == bool: # If x has the data type of Boolean, than

    print('x has a Boolean value of: ', str(x)) # print a string, and x converted to a string.

elif type(x) == int:  # If x has the data type of an integer:

    print('the type of x is an integer with a value of:', str(x)) # Print that.

elif type(x) == float: #If it's a float:

    print('the type of x is a float with the value of ', str(x))

elif type(x) == str: # Or a string.

    print('the type of x is a string with the value of ', x)

else:

    print('oops')
```

Lists

Lists are lists ¯_(ツ)_/¯. They are variables that contain a list of things. They are defined with [‘square’, ‘brackets’]. Entries are separated with commas. Example:

```
name = 'Kaz'

age = 13

info = [name, age]

print(info) # Will print ['Kaz', 13]
```