00: Introduction to Programming

A little about me:

-Started coding in 10th grade
-Java, Python, HTML, CSS, learning Django
-Senpai of the csDojo @ Stuy
-Member of Girls Who Code

Share Aloud:

What is computer science and programming to you?

Why do you want to learn how to code?

Python!!!

Here's A Simple Loop With Python

What is Python?

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. - https://www.python.org/doc/essays/blurb/

Setting it up

Go to https://ide.usaco.guide/ and make an account

Indentation

Try typing this into the editor

```
if 2 > 1:
```

```
print("Two is greater than one!")
```

What happens?

Try this

```python
if 2 > 1:
    print("Two is greater than one!")
```

What happens?

It prints "Two is greater than one!

Why?

Python uses indentation to read a block of code. It is very important!

Indentation cont.

Python gives you a lot of freedom, so the number of spaces is up to you but you need to use the same number of spaces throughout the code. Most people use 4 spaces or the tab key.

Variables

What is a variable?

A variable is something that holds a value that you assign it.

Really simple to create:

```
x = 5
y = "Moose"
```

Now you try

Casting

What if you want to change the variable from an integer to string?

```
x = 5
print(x)
x = "Elk"
print (x)
```

Output:
5
Elk

Naming rules

So Python does not give you total freedom

-must start with letter or underscore

-cannot start with a number

-only alphanumeric (A-Z or 0-9) and underscores

-case sensitive

-cannot be a keyword

Tiny Quiz!

Which variable will NOT work?

1. $movies6 ✔
2. _movies6
3. Movies6
4. _movies_6

Printing

```python
x = "We love Python!"
print(x)
```

What if we have three variables and want to print "We love Python!"?

```python
x = "We"
y = "love"
z = "Python!"
```

Printing

```python
x = "We"
y = "love"
z = "Python!"
print(x, y, z)
```

Or

We can add!

Concatenation

Try

```
print(x + y + z)
```

What does it print?

How can we fix this?

Concatenation

```
x = "We "
y = "love "
z = "Python!"
```

With numbers "+" works as mathematical operator
```
print(5 + 7) -> 12
```
However, you cannot combine a number with a string. It will give you an error!

```
print(5 + "Python")
```

Comments

Use # for a comment. Python will ignore the rest of the line.

```python
#This is a comment
print(5)
```

It can also be placed at the end.

```python
print(5) #This is also a comment
```

Quiz Time!

```
def my_function():
print("Hello, world!")
```

A) No indentation

B) 1 space

C) 2 spaces

D) 4 spaces

What will happen if the indentation of a block of code is not consistent?

A) The code will run correctly.

B) Python will raise an IndentationError.

C) The code will run but produce incorrect results.

D) Python will ignore the indentation.

Which of the following is a valid variable name in Python?

A) 2nd_place

B) second place

C) second_place

D) second-place

What is the result of the following code?

```python
str1 = "Hello"
str2 = "World"
result = str1 + " " + str2
print(result)
```

A) HelloWorld

B) Hello World

C) HelloWorld

D) Hello world

Which operator is used for string concatenation in Python?

A) +

B) *

C) &

D) %

Which of the following is a valid single-line comment in Python?

A) // This is a comment

B) /* This is a comment */

C) # This is a comment

D) -- This is a comment

What is the purpose of comments in Python code?

A) To execute additional code

B) To explain the code to human readers

C) To speed up code execution

D) To mark the end of the code