Programming in Python: Takeaways

Syntax

- Displaying the output of a computer program:

```
print(1 + 2)
print(5 * 10)
```

- Ignoring certain lines of code by using code comments:

```
# print(1 + 2)
print(5 * 10)
# This program will only print 50
```

- Performing arithmetical operations:

```
1 + 2
4 - 5
30 * 1
20 / 3
4**3
(4 * 18)**2 / 10
```

- Storing values to variables:

```
twenty = 20
result = 43 + 2**5
currency = 'USD'
```

- Updating the value stored in a variable:

```
x = 30
x += 10 # this is the same as x = x + 10
```

- Rounding a number:

```
round(4.99) # the output will be 5
```

- Using quotation marks to create a string:

```
app_name = "Clash of Clans"
app_rating = '3.5'
```

- Concatenating two or more strings:

```
print('a' + 'b') # prints 'ab'
print('a' + 'b' + 'c') # prints 'abc'
```

- Converting between types of variables:

```
int('4')
str(4)
float('4.3')
str('4.3')
```

- Finding the type of a value:

```
type(4)
type('4')
```

Concepts

- When we give a computer a set of instructions, we say that we're **programming** it. To program a computer, we need to write the instructions in a special language, which we call a **programming language**.
- The instructions we send to the computer are collectively known as **code**. Each line of instruction is known as a **line of code**.
- The code we write serves as **input** to the computer. The result of executing the code is called **output**.
- We can store values in the computer memory. Each storage location in the computer's memory is called a **variable**.
- There are two syntax rules we need to be aware of when we're naming variables:
    - We must use only letters, numbers, or underscores.
        - We can't use apostrophes, hyphens, whitespace characters, etc.
    - Variable names can't start with a number.

- In computer programming, values are classified into different **types**, or **data types**. The type of a value offers the computer the required information about how to handle that value. Depending on the type, the computer will know how to store a value in memory, or what operations can and can't be performed on a value.
- In this mission, we learned about three data types: integers, floats, and strings.

Resources

- More on Python Basics.
- More on numbers and strings in Python.