Day 2 - Coding Basics

Variables

In Python, variables are used to store and manipulate data. They act as containers that hold values. To declare a variable, you simply assign a value to it using the assignment operator (=). Here's an example:

```
name = "Iman"
is_working_hier = True
age = 30
heigh_in_meter = 1.81
```

In the above code, we declared four variables: name, is_working_hier, age and height_in_meter. The variable name stores the string "Iman", while is_working_hier stores boolean True, age stores the integer 30 and, height_in_meter stores float variable 1.81. Note that in Python, you don't need to specify the data type explicitly. You can see the type of a variable with:

```
type(variable_name)
```

Data Types

Python supports several data types. Here are some commonly used ones:

Integers: Whole numbers without decimal points.

```
age = 30
```

Floats: Numbers with decimal points.

```
pi = 3.14
```

Strings: Ordered sequence of characters enclosed in single or double quotes.

```
name = "Iman"
```

Booleans: Represents either True or False.

```
is_student = True
```

Lists: Ordered collection of items enclosed in square brackets.

```
fruits = ['apple', 'banana', 'orange']
```

Basic Operators

Python provides various operators to perform different operations on variables and values. Let's cover a few fundamental ones:

Arithmetic Operators

- Addition: +
- Subtraction: -
- Multiplication: *
- Division: /
- Modulo (remainder): %
- Floor Division (returns integer quotient): //

Comparison Operators

- Equal to: ==
- Not equal to: !=
- Greater than: >
- Less than: <
- Greater than or equal to: >=
- Less than or equal to: <=

Assignment Operators

- Assign value: =
- Add and assign: +=
- Subtract and assign: -=
- Multiply and assign: *=
- Divide and assign: /=

Logical Operators

- Logical AND: and
- Logical OR: or
- Logical NOT: not