

Soumyadarshan Dash

Welcome in Day_4

Learn Python With Soam

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What is pip in python?

Pip is package manager for Python that allows installation and management of Python packages. It is often used to install packages from the Python package index(PyPI)

- For example, to install a package called "requests" using pip, we would open our command prompt or terminal and run this code

Installation of pip

```
pip install requests
```

- For example, if we want to use the "beautifulsoup4" library for web scraping in our python project. we can use pip to install it. So we follow this code in our command prompt or terminal and run

```
pip install beautifulsoup4
```

This will download and install the "beautifulsoup4" library and any other dependencies required for it to function properly. Then we can import it in our python script and start using its functions like:

```
from bs4 import BeautifulSoup
```

```
# Use 'html.parser' instead of lxml for low memory usage
soup = BeautifulSoup(html_doc, 'html.parser')
```

#It's a quick and easy way to add new functionality to your Python projects.

As i told you yesterday, we discussed the two inbuilt modules '**random**' and '**date-time**'

What is random?

- "Random" means unpredictable or determined by chance. In programming, it refers to values generated by a random number generator which produces a sequence of numbers that appear to be random and used in simulations games, cryptography and other applications.

```
import random
```

```
print(random.randint(1, 10))
```

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What is date-time?

- The datetime module in Python is a set of tools that allows you work with dates and times.
- it has different classes like **date**, **time**, **datetime**, **timedelta**, and **tzinfo** that can help you represents and change dates and times in your code. it's helpful for working with-related data, handling different data and time formats and doing calculations with dates and times.

For example, the datetime class can be used to represent a specific date and time, such as "January 1, 2020, 12:00 PM". We can also use it to perform operations on date and time values, such as adding or subtracting days, hours, or minutes.

```
from datetime import datetime
```

```
# current date and time  
now = datetime.now()
```

```
print("now =", now)
```

```
# date class is used to represent a date (year, month, and day)  
# without a time  
print("date =", now.date())
```

```
# time class is used to represent a time of day  
# (hours, minutes, seconds, and microseconds) without a date
```

```
print("time =", now.time())
```

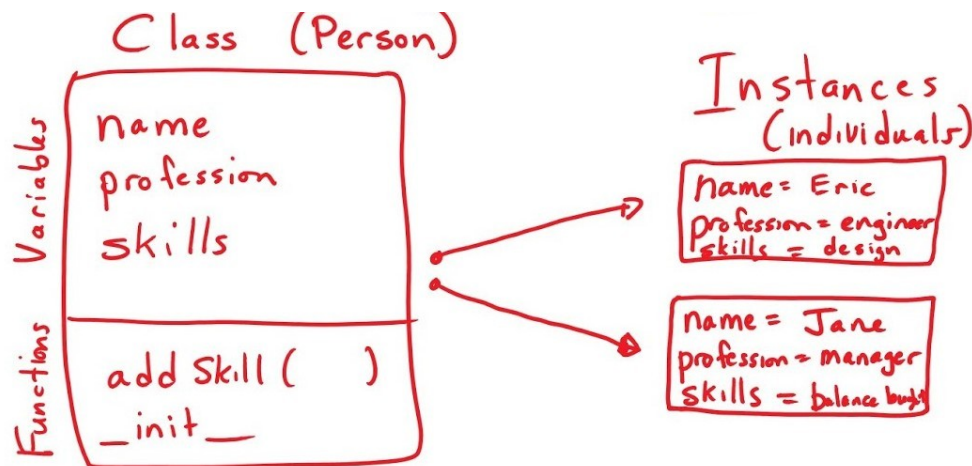
```
now = 2023-01-13 15:52:36.137464  
date = 2023-01-13  
time = 15:52:36.137464
```

In the upcoming lesson, we will be discussing and learning how to create a clock using Python programming language.

A question has come to my mind, what is a class in programming?

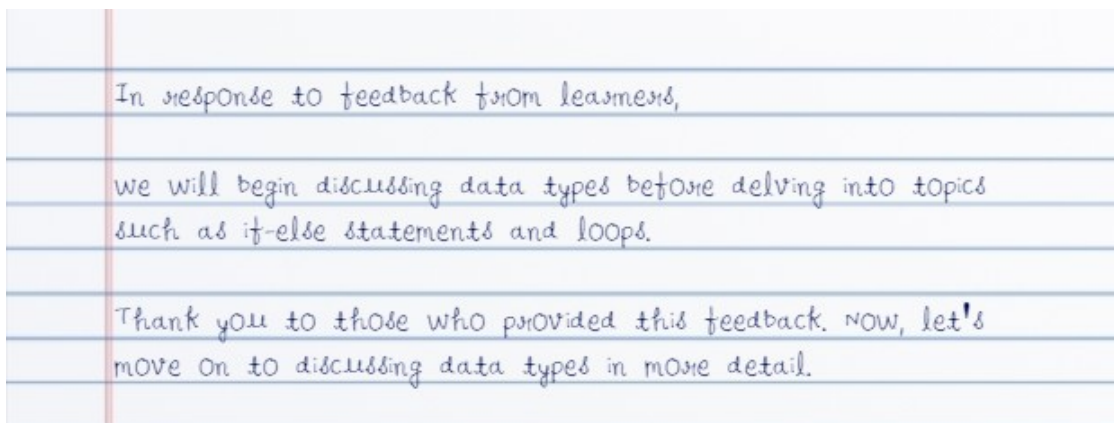
- A class in Python is like a recipe or a plan for making something. It tells you what ingredients or tools you need and how to put them together.

it also tells you what the thing you made can do. Classes are used to create objects, which are like the things you make using the recipe or plan. So, a class is like a blueprint and an object is the actual thing made from the blueprint



Pip vs Module

- The main difference between **pip** and module is that pip is a **package manager for Python** that is used to install and manage Python packages, while a **module** is a **single file containing Python code** that can be imported and used in other Python scripts.
- pip is a tool for installing and managing Python packages, while module refers to a collection of Python code that can be imported and used in other scripts.



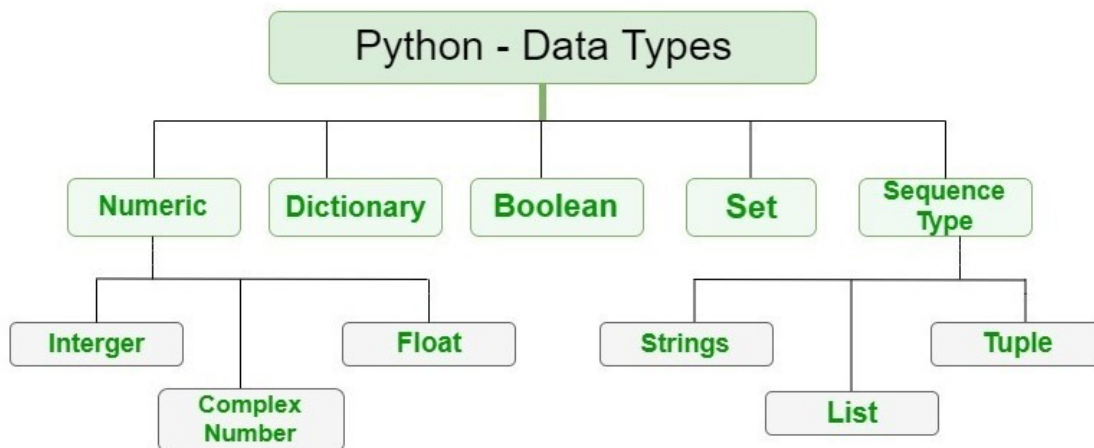
Before we begin, i would like to adress a confusion that some may have regarding the difference between data types and data structures

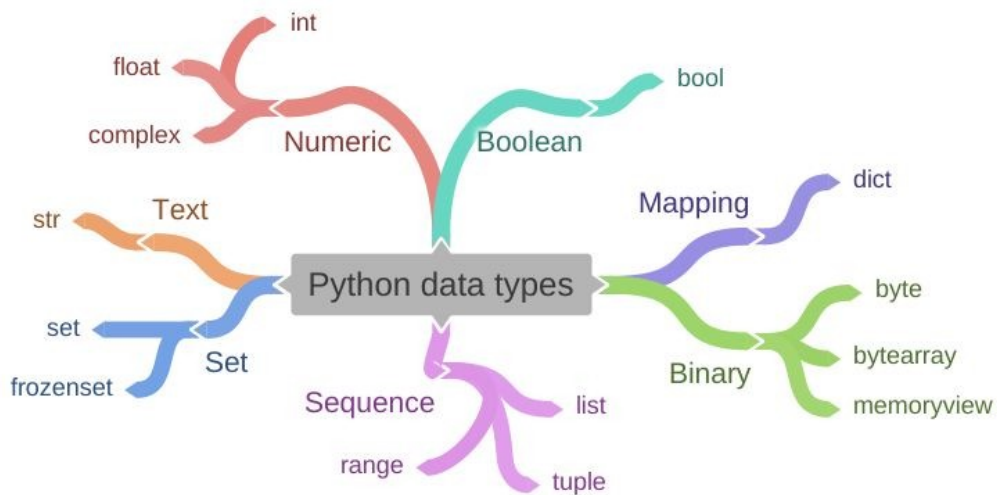
- **Data types** tell the computer what kind of information a piece of data is.

- For example, is it a number or a word? Python has different types of data like whole numbers, decimals, true or false values and even lists of items.

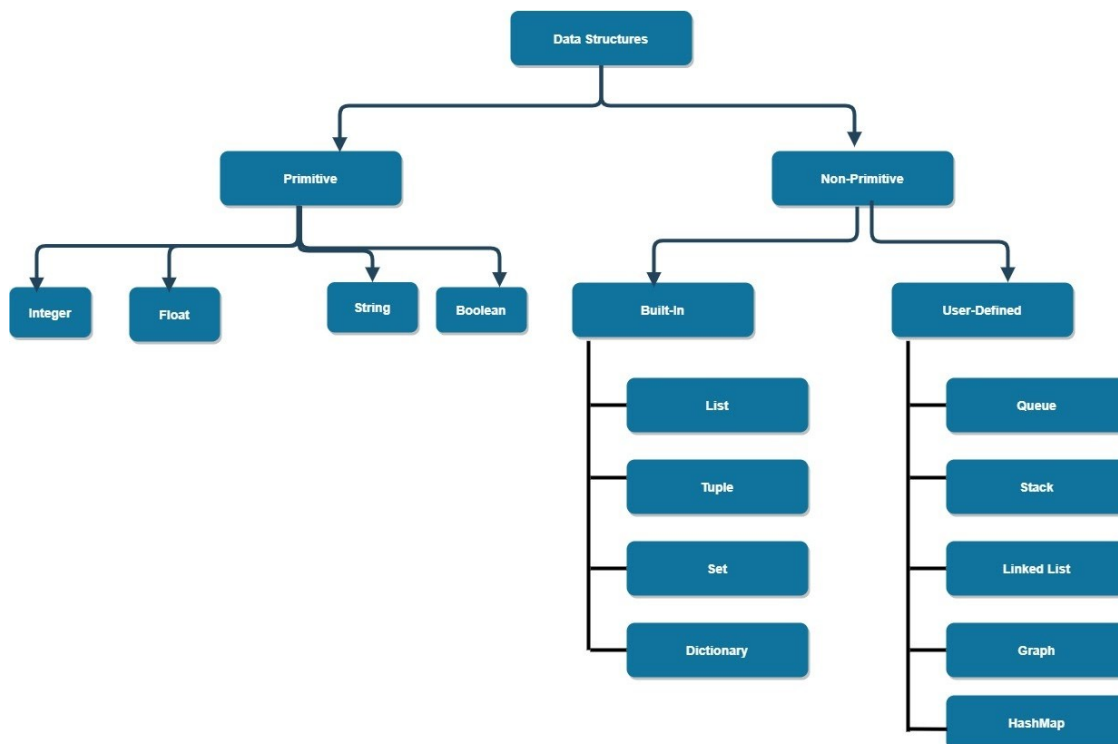
These types are called:

- int - Represents a whole number such as 1, 2, 3, etc.
- float - Represents decimal numbers such as 3.14, 2.718, etc.
- str - Represents a string of characters, such as "hello", "world", etc.
- bool - Represents a Boolean value, which can be either True or False.
- list - Represents a collection of items, which can be of any data type and is enclosed in square brackets [].
- tuple - Represents a collection of items, which can be of any data type and is enclosed in round brackets (). It is similar to a list but once created it can not be modified.





- **Data structures** are the way of organizing and storing data in a computer so that it can be accessed and modified efficiently.
- They provide a way to group and organize data in a specific way, such as lists, sets, dictionaries, and trees. These data structures are implemented using different data types in python



*Going forward, we will first cover the basics of data types. Following that, we will explore into control flow concepts such as if-else statements, ternary operators, and various types of loops (e.g for loops with range, while loops). We will also cover important control flow concepts such as break, continue and pass. After that, we will study functions in more depth. After gaining a solid understanding of these fundamental concepts, we will then explore into more advanced topics related to data types. It is important to note that this process may involve revisiting and reinforcing previously covered material to ensure a thorough understanding.

Throughout the learning period, I will use examples and exercises to illustrate key concepts, and provide ample opportunities for hands-on practice to solidify understanding. We skip the Data-structure section for now; we'll cover it later.

Thanks for Learning python with Soam