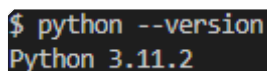


Basics of Python – Day 13

Task:

1. Install Python in your respective OS, check the version.

- Below are the steps to install Python in Windows Operating system as we have windows installed in our system:
 - A. Go to the official Python website at <https://www.python.org/downloads/> and download the latest version of Python for Windows.
 - B. Once the download is complete, double-click on the downloaded installer file to begin the installation process.
 - C. On the first screen, select the option to "Add Python to PATH" and click on "Customize installation" if you wish to customize the installation settings, otherwise click on "Install Now".
 - D. If you clicked on "Customize installation", you can select the optional features that you want to install. For most users, the default options are sufficient.
 - E. Click on "Install" to begin the installation process.
 - F. The installer will now install Python on your computer. This may take a few minutes to complete.
 - G. Once the installation is complete, you can close the installer.
 - H. To verify that Python is installed correctly, open the Command Prompt and type "python" (without the quotes) and press Enter. This should launch the Python interpreter.
 - I. That's it! You now have Python installed on your Windows computer.
- To check which version of python is present in our system after installation:
python -version



```
$ python --version
Python 3.11.2
```

2. Read about different Data Types in Python.

- Below are datatypes of python:
 - I. **Numeric Types:** These include integers, floating-point numbers, and complex numbers.
 - a. **Integers:** Integers are whole numbers (positive, negative, or zero) without a decimal point. In Python, integers can be of any size and are represented using the int class.

b. Floating-point Numbers: These are numbers with a decimal point or an exponent. Floating-point numbers are represented using the float class in Python.

c. Complex Numbers: These are numbers with both real and imaginary parts. In Python, complex numbers are represented using the complex class.

II. Boolean Type: This includes the Boolean values True and False, which represent the truth values of a condition.

III. Sequence Types: These include strings, lists, tuples, and range objects.

a. Strings: Strings are sequences of characters enclosed in quotes. Python provides two types of strings - str and bytes. str is used to represent Unicode strings, while bytes is used to represent byte sequences.

b. Lists: Lists are ordered sequences of values enclosed in square brackets. They can contain any type of value and can be modified. In Python, lists are represented using the list class.

c. Tuples: Tuples are ordered sequences of values enclosed in parentheses. They are similar to lists but are immutable, meaning their values cannot be changed after they are created. In Python, tuples are represented using the tuple class.

d. Range Objects: Range objects are used to represent a sequence of numbers. They are commonly used in for loops to iterate over a sequence of values.

IV. Mapping Types: These include dictionaries, which are unordered collections of key-value pairs.

a. Dictionaries: Dictionaries are unordered collections of key-value pairs enclosed in curly braces. They are used to store data in the form of key-value pairs, where each key is unique. In Python, dictionaries are represented using the dict class.

V. Set Types: These include sets and frozen sets, which are unordered collections of unique elements.

a. Sets: Sets are unordered collections of unique elements enclosed in curly braces. They are used to perform

mathematical set operations such as union, intersection, and difference. In Python, sets are represented using the set class.

b. Frozen Sets: Frozen sets are similar to sets, but they are immutable, meaning their values cannot be changed after they are created. In Python, frozen sets are represented using the frozenset class.

- VI. NoneType:** This is a special data type in Python that represents the absence of a value. It has only one value, which is None.
- VII. File Objects:** These are used to represent files on the system and provide methods for reading and writing data. In Python, file objects are represented using the file class.
- VIII. Bytes and Bytearray Types:** These are used to represent binary data in Python.
 - a. Bytes:** Bytes are immutable sequences of bytes. They are used to represent binary data such as images and audio files. In Python, bytes are represented using the bytes class.
 - b. Bytearray:** Bytearrays are similar to bytes, but they are mutable, meaning their values can be changed after they are created. In Python, bytearrays are represented using the bytearray class.