# Today I'll Cover :

1. Type Casting
2. Fundamental Data Type vs Immutablity.
3. In-Built Data Types brief discussion.
4. Escape Characters.
5. Constants

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بِسْمِ ٱللَّهِ ٱلرَّحْمَٰنِ ٱلرَّحِيمِ

In the name of ALLAH,
the Most Beneficent, the Most Merciful

# Type Casting

Conversion of one data type to another called Type Casting.

Various inbuilt function for type casting:-

1. int()
2. float()
3. complex()
4. bool()
5. str()

# int()

- We can convert any type value to int type except complex type.
- If case of str to int conversion, compulsory str should contain only integral values and should be specified in base-10.

# float()

- We can convert any type value to float type except complex type.
- If case of str to float conversion, compulsory str should be either integral or floating point and should be specified in base-10.

# complex()

- **We can use complex() function to convert other types to complex type.**
- **complex(x) :-** use to convert x into complex number with real part x and imaginary part 0.
- **complex(x,y) :-** use to convert x and y into complex number such that x will be real part and y will be imaginary part.

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# bool()

bool(x):-

if x = 0 or x = ‘’ (empty string) then the bool will return False otherwise it will always return True.

# str()

str() use to convert other type values to str type.

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# Fundamental Data Type vs Immutability

All Fundamental Data types are immutable. Means once object is created, we cannot Modify object. If we try to do so then with those changes a new object will be created. This non-changeable behavior is called immutability.

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In Python if a new object is required, then PVM check if object available with the required content or not. If available then existing object will be reused. Otherwise a new object will be created.

The advantage of this approach is memory utilization and performance will be improved.

But the problem in this approach is, several references pointing to the same object, by using one reference if we are allowed to change the content in the existing object then the remaining references will be effected. To prevent this immutability concept is required.

According to this once creates an object we are not allowed to change content. If we are trying to change with those changes a new object will be created.

# bytes

- Bytes data type represents a group of byte numbers just like an array.
- It is immutable.
- The allowed values are 0 to 256.

# bytearray

- Exactly same as byte but it is mutable.

# List []

An ordered, mutable, heterogenous collection of elements where duplicates also allowed is called list.

Elements are represented within square brackets.

# Tuple ()

Same as list but it is immutable.

Elements are represented within parenthesis.

# Range

- It represent sequence of number
- It is immutable.

# Set

It represent a group of values without duplicates where order is not important then we should go for set Data Type.

# Frozenset

Same as Set but it is immutable.

# Dictionary

It represent a group of values as key-value pairs, where key should be unique.

# None

- None means Nothing or No value associated.
- If the value is not available, then to handle such type of cases None introduced.
- It is something like null value in Java.

# Escape Characters

In String literals we can use esacpe characters to associate a special meaning.

1) \n==>New Line

2) \t===>Horizontal tab

3) \r ==>Carriage Return

4) \b===>Back space

5) \f===>Form Feed

6) \v==>Vertical tab

# Constant

There is nothing like constant in python.

But we should represent constant values with uppercase. It is just a conversion.