Binary Data types

- Binary types are used to store the data in the form of binary format i.e data will be stored in the encrypted format.
- Binary types are mostly used for media related files
  - Images | audios | videos …..

Binary types are classified into 2 types

bytes( )

bytearray( )

both bytes( ) and bytearray( ) allow to store the data in between 0 to 255 i.e range(0,256)

bytes data type is immutable whereas bytearray( ) is mutable collection

Example:

```
>>> lst=[10,20,30,40]
>>> b=bytes(lst)
>>> type(b)
<class 'bytes'>
>>> print(b)
b'\n\x14\x1e('
>>> b[0]=22
Traceback (most recent call last):
  File "<pyshell#5>", line 1, in <module>
    b[0]=22
TypeError: 'bytes' object does not support item assignment
```

Example : bytearray

```
>>> lst=[10,20,30,40,50]
>>> b=bytearray(lst)
>>> type(b)
<class 'bytearray'>
>>> print(b)
bytearray(b'\n\x14\x1e(2')
>>> b[1]=222
>>> print(b)
bytearray(b'\n\xde\x1e(2')
>>>
```

Note: While creating bytes( ) and bytearray( ) then that collection need have the values between 0 to 255 otherwise pvm will raise an Value Error

```
>>> lst=[20,30,40,34,454,234]
>>> b=bytes(lst)
Traceback (most recent call last):
  File "<pyshell#3>", line 1, in <module>
b=bytes(lst)
ValueError: bytes must be in range(0, 256)
```

```
>>> ba=bytearray(lst)
Traceback (most recent call last):
  File "<pyshell#4>", line 1, in <module>
    ba=bytearray(lst)
ValueError: byte must be in range(0, 256)

>>> s="welcome to sssit"
>>> b=bytes(s,'utf-8')
>>> type(b)
<class 'bytes'>
>>> print(b)
b'welcome to sssit'
```

Utf-8 means :

communication. Defined by the Unicode Standard, the name is derived from *Unicode* (or *Universal Coded Character Set*) *Transformation Format – 8-bit*.[1]