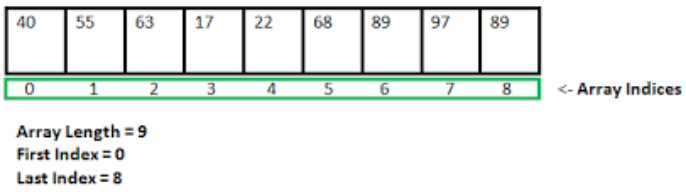
Arrays

An array is collection of items stored at contiguous memory locations.
The idea is to store multiple items of same type together.
This makes it easier to calculate the position of each element by simply adding an offset to a base value.



Python does not have built-in support for Arrays, but Python Lists can be used instead.

Consider below application which demonstrate concept of array

```
print("---- Marvellous Infosystems by Piyush Khairnar-----")

print("Demonstration of Array")

# As there is no direct support for array in python we have to import array module to create array

import array as arr

a = arr.array('i', [2, 4, 6, 8])    # is is considered as type code

print("First element:", a[0])
print("Second element:", a[1])
print("Second last element:", a[-1])

a = arr.array('f', [2.4, 4.5, 6.5, 8.8])    # is is considered as type code

print("First element:", a[0])
print("Second element:", a[1])
print("Second last element:", a[-1])

print(a.typecode)

a.reverse()
for i in range(len(a)):
    print(a[i])

b = array('i',[1,2,1,2])
for i in range(len(b)):
    print(b[i])

i =0
```

```
while (i<len(b)):
    print(b[i])
    i+=1
```

Output of above application

```
Python_Programs — -bash — 79×24
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$ python Array.py
---- Marvellous Infosystems by Piyush Khairnar-----
Demonstration of Array
('First element:', 2)
('Second element:', 4)
('Second last element:', 8)
('First element:', 2.4000000953674316)
('Second element:', 4.5)
('Second last element:', 8.800000190734863)
f
8.80000019073
6.5
4.5
2.40000009537
1
2
1
2
1
2
1
2
MacBook-Pro-de-MARVELLOUS:Python_Programs marvellous$
```

If we want to create array in python we have to use below syntax

Array_Name = array('Type_Code', [Elements])

According to the above syntax we have to use type code which indicates data type of array elements.

we can use below type code as

Type code	C Type	Python Type	Minimum size in bytes
'b'	signed char	int	1
'B'	unsigned char	int	1
'u'	Py_UNICODE	Unicode character	2
'h'	signed short	int	2
'H'	unsigned short	int	2
'i'	signed int	int	2
'I'	unsigned int	int	2
'l'	signed long	int	4
'L'	unsigned long	int	4
'f'	float	float	4
'd'	double	float	8