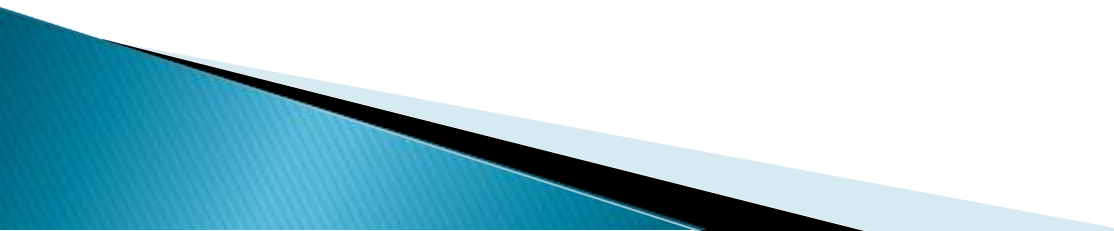


Walkthrough

DATA STRUCTURE IN PYTHON

- Arrays
 - Operation on Arrays
 - Tuples
 - Operation on tuples
 - Lists
 - Operation on Lists
 - Dictionary
 - Operation on dictionary
 - Quiz and Exercise
- 

Arrays

What are Arrays:

Array is a container which can hold a fix number of items and these items should be of the same type.

Most of the data structures make use of arrays to implement their algorithms.

Following are the important terms to understand the concept of Array.

- **Element** – Each item stored in an array is called an element.
- **Index** – Each location of an element in an array has a numerical index, which is used to identify the element.

```
Import array
from array import *
arrayName = array(typecode, [Initializers])
```

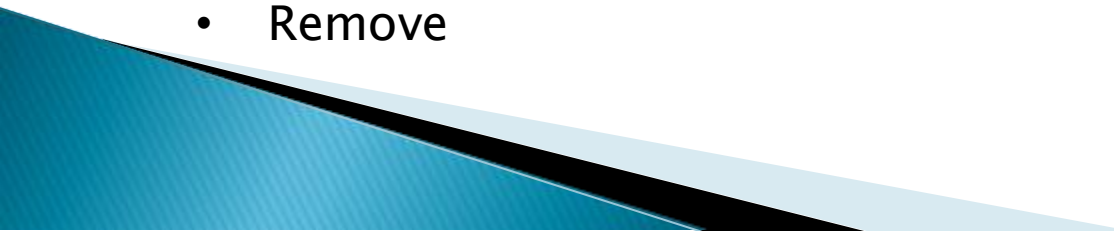
Typecode	Value
b	Represents signed integer of size 1 byte
B	Represents unsigned integer of size 1 byte
c	Represents character of size 1 byte
i	Represents signed integer of size 2 bytes
I	Represents unsigned integer of size 2 bytes
f	Represents floating point of size 4 bytes
d	Represents floating point of size 8 bytes

Integer Types


Type	Storage size	Value range
char	1 byte	-128 to 127 or 0 to 255
unsigned char	1 byte	0 to 255
signed char	1 byte	-128 to 127
int	2 or 4 bytes	-32,768 to 32,767 or -2,147,483,648 to 2,147,483,647

Operation on Array

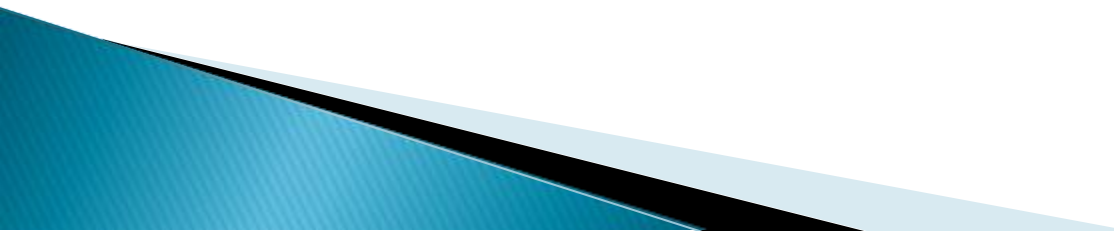
Following are the operations on Arrays:

1. Accessing an array element
 2. Inserting an element
 3. Deleting an element
 4. Searching an element
 5. Updating an element
 - Append
 - Count
 - Extend
 - Insert
 - Search
 - Pop
 - Remove
- 

Lists

1. List contain a mix of data-type
 2. Lists in Python can be created by just placing the sequence inside the square brackets[].
 3. Functions on lists :
 - Append
 - Clear
 - Count
 - Extend
 - Insert
 - Pop
 - Remove
 - Sort
 - del
- 

Tuples

1. Tuple in python is ordered and unchangeable.
 2. Tuples are written in round brackets.
 3. The Datatype of tuples can be anything.
 4. Tuples are immutable.
 5. Following are the functions on tuple:
 - Concatenation
 - Reversing
 - Del
 - Max, min , len
- 

Dictionary

1. Dictionaries store values in key and value format.
 2. Following are the operations in dictionary:
 - Accessing a value
 - Changing a value
 - Length
 - Adding items
 - Pop
 - Del
 - Clear
- 