

Arrays All Versions

"Arrays" in Python are not the arrays in conventional programming languages like C and Java, but closer to lists. A list can be a collection of either homogeneous or heterogeneous elements, and may contain ints, strings or other lists.

Examples

Access individual elements through indexes

Individual elements can be accessed through indexes. Python arrays are zero-indexed. Here is an example :

```
my_array = array('i', [1,2,3,4,5])
print(my_array[1])
# 2
print(my_array[2])
# 3
print(my_array[0])
# 1
```

Add items from list into array using fromlist() method

Here is an example:

```
my_array = array('i', [1,2,3,4,5])
c=[11,12,13]
my_array.fromlist(c)
# array('i', [1, 2, 3, 4, 5, 11, 12, 13])
```

So we see that the values 11,12 and 13 were added from list `c` to `my_array` .

Append a string to char array using fromstring() method

You are able to append a string to a character array using `fromstring()`

```
my_char_array = array('c', ['g','e','e','k'])
my_char_array.fromstring("stuff")
print(my_char_array)
#array('c', 'geekstuff')
```

Append any value to the array using append() method

```
my_array = array('i', [1,2,3,4,5])
my_array.append(6)
# array('i', [1, 2, 3, 4, 5, 6])
```

Note that the value `6` was appended to the existing array values.

Basic Introduction to Arrays

An array is a data structure that stores values of same data type. In Python, this is the main difference between arrays and lists.

While python lists can contain values corresponding to different data types, arrays in python can only contain values corresponding to same data type. In this tutorial, we will understand the Python arrays with few examples.

If you are new to Python, get started with the [Python Introduction](#) article.

To use arrays in python language, you need to import the standard array module. This is because array is not a fundamental data type like strings, integer etc. Here is how you can import array module in python :

```
from array import *
```

Once you have imported the `array` module, you can declare an array. Here is how you do it:

```
arrayIdentifierName = array(typecode, [Initializers])
```

In the declaration above, `arrayIdentifierName` is the name of array, `typecode` lets python know the type of array and `Initializers` are the values with which array is initialized.

Typecodes are the codes that are used to define the type of array values or the type of array. The table in the parameters section shows the possible values you can use when declaring an array and its type.

Here is a real world example of python array declaration :

```
my_array = array('i', [1,2,3,4])
```

In the example above, typecode used is `i`. This typecode represents signed integer whose size is 2 bytes.

Here is a simple example of an array containing 5 integers

```
from array import *
my_array = array('i', [1,2,3,4,5])
for i in my_array:
    print(i)
# 1
# 2
# 3
# 4
# 5
```

Check for number of occurrences of an element using `count()` method

`count()` will return the number of times an element appears in an array. In the following example we see that the value 3 occurs twice.

```
my_array = array('i', [1,2,3,3,5])
my_array.count(3)
# 2
```

Convert array to a python list with same elements using `tolist()` method

When you need a Python list object, you can utilize the `tolist()` method to convert your array to a list.

```
my_array = array('i', [1,2,3,4,5])
c = my_array.tolist()
# [1, 2, 3, 4, 5]
```

Convert array to string using `tostring()` method

`tostring()` converts the array to a string.

```
my_char_array = array('c', ['g','e','e','k'])
# array('c', 'geek')
print(my_char_array.tostring())
# geek
```

Extend python array using `extend()` method

A python array can be extended with more than one value using `extend()` method. Here is an example :

```
my_array = array('i', [1,2,3,4,5])
my_extnd_array = array('i', [7,8,9,10])
my_array.extend(my_extnd_array)
# array('i', [1, 2, 3, 4, 5, 7, 8, 9, 10])
```

We see that the array `my_array` was extended with values from `my_extnd_array`.

Fetch any element through its index using index() method

index() returns first index of the matching value. Remember that arrays are zero-indexed.

```
my_array = array('i', [1,2,3,4,5])
print(my_array.index(5))
# 5
my_array = array('i', [1,2,3,3,5])
print(my_array.index(3))
# 3
```

Note in that second example that only one index was returned, even though the value exists twice in the array

Get array buffer information through buffer_info() method

This method provides you the array buffer start address in memory and number of elements in array. Here is an example:

```
my_array = array('i', [1,2,3,4,5])
my_array.buffer_info()
(33881712, 5)
```

Insert value in an array using insert() method

We can use the insert() method to insert a value at any index of the array. Here is an example :

```
my_array = array('i', [1,2,3,4,5])
my_array.insert(0,0)
#array('i', [0, 1, 2, 3, 4, 5])
```

In the above example, the value 0 was inserted at index 0. Note that the first argument is the index while second argument is the value.

Remove any array element using remove() method

Here is an example :

```
my_array = array('i', [1,2,3,4,5])
my_array.remove(4)
# array('i', [1, 2, 3, 5])
```

We see that the element 4 was removed from the array.

Remove last array element using pop() method

pop removes the last element from the array. Here is an example :

```
my_array = array('i', [1,2,3,4,5])
my_array.pop()
# array('i', [1, 2, 3, 4])
```

So we see that the last element (5) was popped out of array.

Reverse a python array using reverse() method

The reverse() method does what the name says it will do - reverses the array. Here is an example :

```
my_array = array('i', [1,2,3,4,5])
my_array.reverse()
# array('i', [5, 4, 3, 2, 1])
```

Syntax

Parameters

Parameter	Details
b	Represents signed integer of size 1 byte
B	Represents unsigned integer of size 1 byte
c	Represents character of size 1 byte
u	Represents unicode character of size 2 bytes
h	Represents signed integer of size 2 bytes
H	Represents unsigned integer of size 2 bytes
i	Represents signed integer of size 2 bytes
I	Represents unsigned integer of size 2 bytes
w	Represents unicode character of size 4 bytes
l	Represents signed integer of size 4 bytes
L	Represents unsigned integer of size 4 bytes
f	Represents floating point of size 4 bytes
d	Represents floating point of size 8 bytes

Remarks