DSA IN PYTHON

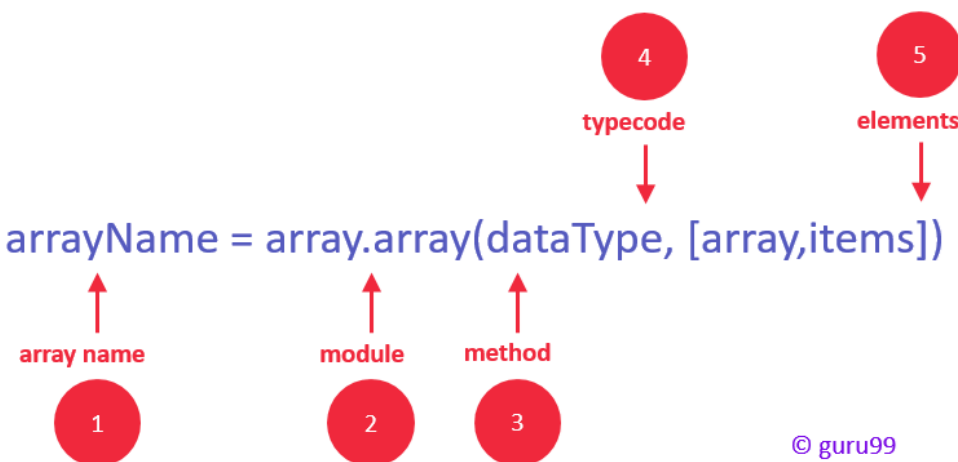# 1.Explain arrays in Pythons with example

A [Python Array](#) is a collection of a common type of data structures having elements with the same data type. It is used to store collections of data. In Python programming, arrays are handled by the "array" module. If you create arrays using the array module, elements of the array must be of the same numeric type

Syntax to Create an Array in Python

You can declare an array in Python while initializing it using the following syntax.

```
arrayName = array.array(type code for data type,
[array,items])
```

The following image explains the syntax.

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1. **Identifier**: specify a name like usually, you do for variables
2. **Module**: Python has a special module for creating array in Python, called "array" – you must import it before using it
3. **Method**: the array module has a method for initializing the array. It takes two arguments, type code, and elements.
4. **Type Code**: specify the data type using the type codes available (see list below)

5. **Elements**: specify the array elements within the square brackets, for example [130,450,103]

```
import array as myarray
abc = myarray.array('d', [2.5, 4.9, 6.7])
```

2.How can you access array elements?

You can access any array item by using its index.

The syntax is

```
arrayName[indexNum]
```

Example

```
import array

balance = array.array('i', [300,200,100])

print(balance[1])
```

3.How can you insert elements in array?

Python array insert operation enables you to insert one or more items into an array at the beginning, end, or any given index of the array. This method expects two arguments index and value.

The syntax is

```
arrayName.insert(index, value)
```

Example

Let us add a new value right after the second item of the array. Currently, our balance array has three items: 300, 200, and 100. Consider the second array item with a value of 200 and index 1.

In order to insert the new value right "after" index 1, you need to reference index 2 in your insert method, as shown in the below Python array example:

```
import array
balance = array.array('i', [300,200,100])
balance.insert(2, 150)
print(balance)
```

4.How can you insert elements in array?

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Let us add a new value right after the second item of the array. Currently, our balance array has three items: 300, 200, and 100. Consider the second array item with a value of 200 and index 1.

In order to insert the new value right "after" index 1, you need to reference index 2 in your insert method, as shown in the below Python array example:

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import array
balance = array.array('i', [300,200,100])
balance.insert(2, 150)
print(balance)
```

5.How can you delete elements in array?

With this operation, you can delete one item from an array by value. This method accepts only one argument, value. After running this method, the array items are re-arranged, and indices are re-assigned.

The syntax is

`arrayName.remove(value)`

Example

Let's remove the value of "3" from the array

```
import array as myarray
first = myarray.array('b', [2, 3, 4])
first.remove(3)
print(first)
```