C++ One Dimensional Array

A one-dimensional array is a group of elements having the same datatype and same name. Individual elements are referred to using common name and unique index of the elements.

The simplest form of an array is one-dimensional-array. The array itself is given name and its elements are referred to by their subscripts. In C++, an array is denoted as follows:

```
array_name[array_size]
```

where size specifies the number of elements in the array and the subscript (also called index) value ranges from 0 through size-1.

Declare One Dimensional Array in C++

Here is the general form to declare one dimensional array in C++

```
data_type array_name[array_size];
```

Here, data_type is any valid C++ data type, array_name is the name of the array, and array_size is the size of array. Here is an example, declaring an array named arr of int type, having maximum element size of 10 elements

```
int arr[10];
```

Initialize One Dimensional Array in C++

Here is the general form to initialize values to one dimensional array in C++

```
data_type array_name[array_size] = {comma_separated_element_list};
```

Here is an example, declaring and initializing values to the array name arr of type int, containing 10 elements

```
int arr[10] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
```

C++ One Dimensional Array Example

Here are some example program, demonstrating one dimensional array in C++

```cpp
/* C++ One Dimensional Array */

#include<iostream.h>
#include<conio.h>
void main()
{
   clrscr();
   int arr[5] = {1, 2, 3, 4, 5};
   int i;
   for(i=0; i<5; i++)
   {
      cout<<"arr["<<i<<"] = "<<arr[i]<<"\n";
   }
   getch();
}
```
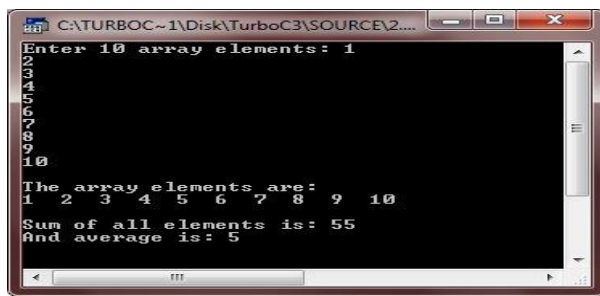
Here is the sample output of this C++ program:

Here is another C++ example, also demonstrating one dimension array in C++ :

```cpp
/* C++ One Dimensional Array */
#include<iostream.h>
#include<conio.h>
void main()
{
   clrscr();
   int arr[10];
   int i;
   int sum=0, avg=0;
   cout<<"Enter 10 array elements: ";
   for(i=0; i<10; i++)
   {
      cin>>arr[i];
      sum = sum + arr[i];
   }
   cout<<"\nThe array elements are: \n";
   for(i=0; i<10; i++)
   {
      cout<<arr[i]<<"  ";
   }
   cout<<"\n\nSum of all elements is: "<<sum;
   avg = sum/10;
   cout<<"\nAnd average is: "<<avg;
   getch();
}
```

Here is the sample run of the above C++ program: