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LAB 01

Array

An array is a collection of similar data elements stored at contiguous memory locations. It is the simplest data structure where each data element can be accessed directly by only using its index number.

For Example

if we want to store the marks scored by a student in 5 subjects, then there's no need to define individual variables for each subject. Rather, we can define an array that will store the data elements at contiguous memory locations.

Array `marks[5]` define the marks scored by a student in **5** different subjects where each subject's marks are located at a particular location in the array, i.e., `marks[0]` denote the marks scored in the first subject, `marks[1]` denotes the marks scored in **2nd** subject and so on.

Different Types Of Arrays

- Single-Dimensional Arrays (1-D)
- Multi-Dimensional Arrays
- Three-Dimensional (3-D) Arrays
- Dynamic Arrays
- Character Arrays

Code

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      int num[5];           //Declare anarray of 5 integer
6      int sum=0;
7      int max;
8      cout<<"Enter 5 Numbers"<<endl;
9      for(int i=0;i<5;i++)  //Input value into array
10     {
11         cout<<"Number"<<i+1<<":";
12         cin>>num[i];
13     }
14     max=num[0];           // Initialize max with the first element
15     for(int i=0;i<5;i++)  //calculate sum and find maximum
16     {
17         sum+=num[i];
18         if(num[i]>max)
19             max=num[i];
20     }
```

```

21 | cout<<"\nYou entered:"; //Display result
22 | for(int i=0;i<5;i++)
23 | {
24 |     cout<<num[i]<<" ";
25 | }
26 | cout<<"\nSum of numbers= "<<sum;
27 | cout<<"\nMaximum number= "<<max<<endl;
28 | return 0;
29 | }

```

Output

```

Enter 5 Numbers
Number1:23
Number2:23
Number3:223
Number4:23
Number5:233

You entered:23 23 223 23 233
Sum of numbers= 525
Maximum number= 233

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Process exited after 15.98 seconds with return value 0
Press any key to continue . . .

```

*****Thank You*****