Arrays:

- An array is a collection of similar type of elements
- The first element of the array is numbered 0, so the last element is 1 less than the size of the array.
- An array is also known as a sub-scripted variable.
- Before using an array its type and dimension must be declared.
- However big an array its elements are always stored in contiguous memory locations.

  Example: int mark[5] will be stored in the following way:

3	7	9	7	5
3002	3004	3006	3008	3010

- **Array Declaration:**

  Syntax: data_type array_name[array_size];

  Example: int mark[100];
- **Accessing Array Elements:** We can access the elements of an array by using the array name with the position of the element in the array known as subscript or index.

  Example: mark[3] indicates the fourth mark.
- **Entering data into an Array:** Data is entered into an array by using a loop.

  Example:

```
for(i=0;i<10;i++)
{
        printf("Enter the mark:");
        scanf("%d",&mark[i]);
}
```

- **Reading data from an Array:** Data is read from an array by using a loop.

  Example:

```
for(i=0;i<10;i++)
{
        sum=sum+mark[i];
}
```

- **Array Initialization:** An array can be initialized in the following ways:

```
int mark[5]={10, 20, 30, 45, 50};
int n[]={10, 20, 30, 45, 50};
```

- While writing the data into an array or reading the data from an array we should be careful about the subscript. If we exceed the array size this will lead to unpredictable results rather than showing error.
- The following four notations access the i^{th} element of the array mark:

```
mark[i]
i[mark]
*(mark+i)
*(i+mark)
```