Array: Group of homogenous type of element when represented by a single variable is called an Array.

Every element inside an array has some index position which starts with 0.

Size of an array is fixed in nature.

There are 2 ways to define an array:

1. with new keyword:

```
//		1st way to define an array:

		int [] a = new int [5];

		a[0] = 10;
		a[1] = 21;
		a[2] = 2;
		a[3] = 60;
		a[4] = 3;



		System.out.println(a[2]);


		for(int i=0; i<5; i++)
		{
			System.out.println(a[i]);
		}
```

Output:
2
10
21
2
60
3

If we don’t define an array value then it stores default value in it.

Example:

```
int [] a = new int [5];

        a[0] = 10;
        a[1] = 21;
        a[2] = 2;
        a[3] = 60;

for(int i=0; i<5; i++)
        {
            System.out.println(a[i]);
        }
```

Output:

10
21
2
60
0

If we try to add number of elements more than the size of an array then we will get ArrayIndexOutOfBoundException.

```
int [] a = new int [5];

        a[0] = 10;
        a[1] = 21;
        a[2] = 2;
        a[3] = 60;
        a[4] = 60;
        a[5] = 60;
```

Output:

Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 5

Advance for loop : Whenever we have a variable which is representing multiple values then we can use Advance for loop.

Example:

```
//          advance for loop or for each loop

        int [] a = new int [5];

            a[0] = 10;
            a[1] = 21;
            a[2] = 2;
            a[3] = 60;
            a[4] = 60;
```

```
        for(int t:a)
        {
            System.out.println(t);
        }

    }
```

Output:

```
10
21
2
60
60
```

Example 2:

```
String [] str = new String [3];

        str[0] = "a1";
        str[1] = "a2";
        str[2] = "a3";


        for(String h:str)
        {
            if(h.equals("a2"))
            {
                h= h+34;
                System.out.println(h);
            }
        }
```

Output: a234

/ WAP to print the values of even index position of an Array

```
System.out.println("*****************************************");

        String s1[] =new String[5];

        s1[0]= "abc";
        s1[1] = "def";
        s1[2] = "ghi";
        s1[3] = "klm";
        s1[4]= "nop";

        for(int i=0; i<5; i++)
        {
            if(i%2==0)
            {
                System.out.println(s1[i]);
            }
        }
```

Output:

```
abc
ghi
nop
```

// WAP to add the all the elements of an array

```
        int d [] = new int[5];
        int sum =0;
        d[0] = 10;
        d[1] = 21;
        d[2] = 2;
        d[3] = 60;
        d[4] = 60;
```

```
for(int dd:d)
{
        sum = sum +dd;
}


System.out.println(sum);
```

Output:

153

length variable in Array: To get the size of an array we have length variable which gives the total size of an array.

Example:

```
public static void main(String[] args) {

        int [] i = new int[8];
        i[0] = 10;
        i[1] = 21;
        i[2] = 2;
        i[3] = 60;
        i[4] = 60;
        i[5] = 2;
        i[6] = 60;
        i[7] = 60;

        System.out.println(i.length);//8

        for(int a=0; a<i.length; a++)
        {
```

```
                if(a%2==0)
                {
                        System.out.println(i[a]);
                }
        }

    }
```

Alternative approach to define the array:

```
// 2nd way to define the array:

        String k [] = {"Daniel", "Eder", "Diana", "Ron"};

        System.out.println(k.length);

        for(String kk:k)
        {
                System.out.println(kk);
        }

        int v [] = {10, 52, 56, 89, 45};

        System.out.println(v.length);
```

Output:

```
4
Daniel
Eder
Diana
Ron
5
```