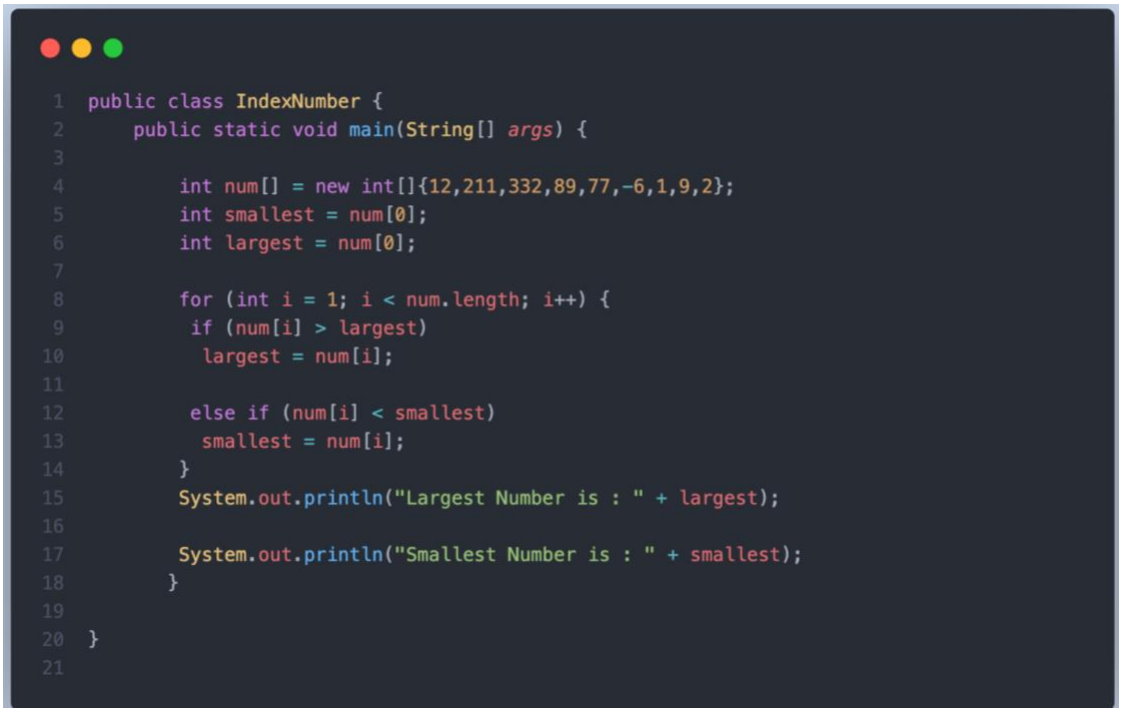
1. Take 10 integer inputs from the user and store them in an array. Again ask the user to give a number. Now, tell the user whether that number is present in the array or not.

```java
import java.util.Scanner;

public class UserInput01{
            public static void main(String[] args) {
                Scanner S = new Scanner(System.in);
                int[] arr = new int[10]; // install the array
                boolean present = false; // putting flag condition
                for (int i = 0; i < arr.length; i++) { // taking values
                    System.out.println("Enter number");
                    arr[i] = S.nextInt();
                }
                System.out.println("Enter number to check ");
                int number = S.nextInt(); // taking values of checking
                for (int i : arr) {// for all element in array/array tail.
                    if (i == number)
                        present = true;

                }
                System.out.println(present); // Output the value is True or False

            }

        }
```

The output for the given program is :

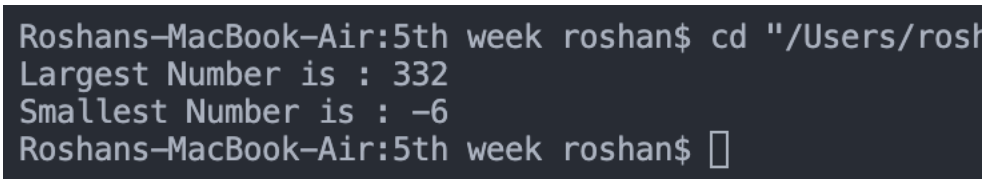
```
Enter number
1
Enter number
2
Enter number
3
Enter number
4
Enter number
5
Enter number
6
Enter number
7
Enter number
8
Enter number
9
Enter number
0
Enter number to check
6
true
```

2. Find largest and smallest elements of an array along with the index number of those elements.



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

        int num[] = new int[]{12,211,332,89,77,-6,1,9,2};
        int smallest = num[0];
        int largest = num[0];

        for (int i = 1; i < num.length; i++) {
         if (num[i] > largest)
          largest = num[i];

         else if (num[i] < smallest)
          smallest = num[i];
        }
        System.out.println("Largest Number is : " + largest);

        System.out.println("Smallest Number is : " + smallest);
       }

}

```

The output for the given program is:



```
Roshans-MacBook-Air:5th week roshan$ cd "/Users/rosh
Largest Number is : 332
Smallest Number is : -6
Roshans-MacBook-Air:5th week roshan$
```

3. If the input array is [10, 12, 20, 30, 25, 40, 32, 31, 35, 50, 60], your program should be able to find that the subarray lies between the indexes 3 and 8.

```java
import java.util.*;
public class SubarrayLine {
    static int[] subArr;
    static int[] arr;
    public static boolean checkArr(int arr[], int sub[]) {
        for(int i=0;i<sub.length;i++) {
            if(sub[i]!=arr[i+3]) {
                return false;
            }
        }return true;
    }
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        int[] arr = new int[] {10,12,20,30,25,40,32,31,35,50,60};
        int[] sub = Arrays.copyOfRange(arr,3,9);
        System.out.println("Array is : ");
        for(int i = 0; i < arr.length; i++){
            System.out.print(arr[i]+"  ");
    }
        System.out.print("\n");
        System.out.println("SubArray is : ");
        for(int i = 0; i < sub.length; i++){
            System.out.print(sub[i]+" ");
    }

        System.out.println("\n");
        if(checkArr(arr,sub)) {
            System.out.println("the subarray lies in the array");
        }else {
            System.out.println("the subarray doesnot lie in the array");
    }


}
}

```

The output for the above program is :

```
Array is :
10  12  20  30  25  40  32  31  35  50  60
SubArray is :
30 25 40 32 31 35
```

4. Write a program to shift every element of an array to circularly right. E.g.- INPUT : 1 2 3 4 5 OUTPUT : 5 1 2 3 4.

```java
public class CircularlyRight {
    public static void main(String[] args) {
            int [] arr = new int [] {1, 2, 3, 4, 5};
            int n = 1;

            System.out.println("Original array: ");
            for (int i = 0; i < arr.length; i++) {
                System.out.print(arr[i] + " ");
            }


            for(int i = 0; i < n; i++){
                int j, last;
                last = arr[arr.length-1];

                for(j = arr.length-1; j > 0; j--){
                    arr[j] = arr[j-1];
                }
               arr[0] = last;
            }
            System.out.println();
            System.out.println("Array after right rotation: ");
            for(int i = 0; i< arr.length; i++){
                System.out.print(arr[i] + " ");
            }
        }
    }

```

The output for the above program is :

```
Array is :
10  12  20  30  25  40  32  31  35  50  60
SubArray is :
30 25 40 32 31 35

the subarray lies in the array
```

5. Write a java program to sort the elements of an integer array in ascending and descending order.

```java
import java.util.Scanner;

public class Ascending {
        public static void main(String[] args) {
            Scanner A = new Scanner(System.in);
            System.out.println("Please Enter An number of Array");
            int box = A.nextInt();
            int num[] = new int[box];

            int i, j, temp;

            System.out.println("Please Enter An Array");
            for (i = 0; i < box; i++) {
                num[i] = A.nextInt();
            }
            for (i = 0; i < box; i++) {
                for (j = i + 1; j < box; j++) {
                    if (num[i] > num[j]) {
                        temp = num[i];
                        num[i] = num[j];
                        num[j] = temp;
                    }
                }
            }
            System.out.println("Increasing Order:-");
            for (j = 0; j < box; j++) {
                System.out.print(num[j]+" ");
            }
            for (i = 0; i < box; i++) {
                for (j = i + 1; j < box; j++) {
                    if (num[i] < num[j]) {
                        temp = num[i];
                        num[i] = num[j];
                        num[j] = temp;
                    }
                }
            }System.out.println();
            System.out.println("Decreasing Order:-");
            for (j = 0; j < box; j++) {
                System.out.print(num[j]+" ");
            }
        }
    }

```

The output for the above program is :

```
Please Enter An number of Array
5
Please Enter An Array
1
2
3
4
5
Increasing Order:-
1 2 3 4 5
Decreasing Order:-
5 4 3 2 1 Roshans-MacBook-Air:5th week roshan$
```

6. Write a java program to print the number of occurrences of each element in an array. Eg. [10,20,30,10,10,20,40] You need to print : 10 occurred 3 times 20 occurred 2 times 30 occurred 1 time 40 occurred 1 time.

```java
import java.util.Arrays;
import java.util.Scanner;
public class Occurrences {
    public static void main(String[] args) {
        int[] arr= {10,20,30,10,10,20,40};
        boolean[] visited=new boolean[arr.length];
        String[] countArr=new String[10];
        int ind=0;
        for(int i=0;i<arr.length;i++) {
            int count=0;
            for(int j=i;j<arr.length;j++) {
                if(arr[i]==arr[j] && visited[j]==false) {
                    count++;
                    visited[j]=true;
                }
            }
            if(count!=0) {
                countArr[ind]=Integer.toString(arr[i])+" occured "+Integer.toString(
count)+" times";
                ind++;
            }

        }
        for(int i=0;i<countArr.length;i++) {
            if(countArr[i]!=null) {
                System.out.println(countArr[i]);
            }

        }
    }
}

```

The output for the above program is:

```
10 occured 3 times
20 occured 2 times
30 occured 1 times
40 occured 1 times
```

7. Write a Java Program to remove a particular element from an array. Original array : [10,20,30,40,50,60,70] Ask the user to enter the number to delete.Suppose user inputs 50. Delete the number 50 from the array and print the remaining elements as [10,20,30,40,60,70]. If the user inputs the number which is not in the list, print some appropriate message like “Number not in list to delete”.

```java
import java.util.Arrays;
import java.util.Scanner;
public class DeleteArray {
        public static int findelement(int[]arr,int elem) {
            for(int i=0;i<arr.length;i++) {
                if(arr[i]==elem) {
                    return i;
                }
            }
            return 0;
        }
        public static void display(int arr[],int len) {
            for(int i=0;i<len;i++) {
                System.out.print(arr[i]+" ");
            }
        }
        public static void shiftArray(int arr[], int deleteNum) {
            int element=findelement(arr,deleteNum);
            if(element==0) {
                System.out.println(" 'number not in array'");
                display(arr,arr.length);
            }
            else {
                for(int i=element;i<arr.length-1;i++) {
                    arr[i]=arr[i+1];
                }
                display(arr,arr.length-1);
            }

        }
        public static void main(String[] args) {
            int[] arr= {10,20,30,40,50,60,70};
            Scanner scan =new Scanner(System.in);
            System.out.println("enter a element to delete");
            int deleteNum=scan.nextInt();
            shiftArray(arr, deleteNum);
        }
}
```

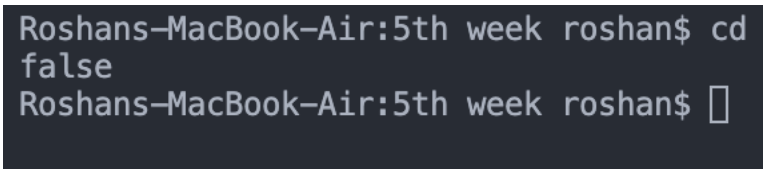
The output for the given program is :

```
Enter a element to delete
10
 'number not in array'
10 20 30 40 50 60 70 Roshans-MacBook-Air:5th week roshan$
```

8. Write a Java program to check if two arrays are equal. Equal arrays means both the arrays must have the same elements .

```java
public class ArrayEqual {
    public static boolean checkEqual(int[] arr1,int[] arr2) {
        if(arr1.length !=arr2.length) {
            return false;
            }
        for(int i=0;i<arr1.length;i++) {
            if(arr1[i]!=arr2[i]){
                return false;
            }
        }
        return true;
    }
    public static void main(String[] args) {
        int[] arr= {1,2,3,4,5,6,7,8,9};
        int[] arr1= {1,2,3,4,5,6,7,9};
        System.out.println(checkEqual(arr,arr1));
    }
}
```

The output for the following program is:



```
Roshans-MacBook-Air:5th week roshan$ cd
false
Roshans-MacBook-Air:5th week roshan$
```

9. Write a Java code to copy the elements of an Array into another array.

```java
public class Copy {
    public static void main(String[] args) {
        int[] arr= {0,1,5,10,15};
        int[] cArr=new int[arr.length];
        for(int i=0;i<arr.length;i++) {
            cArr[i]=arr[i];
        }
            System.out.println("original array:");
            for(int i=0;i<arr.length;i++) {
                System.out.print(arr[i]+" ");

        }
            System.out.println();
            System.out.println("Copied array:");
            for(int i=0;i<cArr.length;i++) {
            System.out.print(cArr[i]+" ");
        }
    }
}

```

The output for the given program is:

```
original array:
0 1 5 10 15
Copied array:
0 1 5 10 15 Roshans-MacBook-Air:5th week roshan$
```

10. Write a java program to print the prime numbers found in an array with the index number. Arr = [10,12,17,19,25,85,96,56,11] You need to print the following: 17 - At index 2 19 - At index 3 11 - At index 8

```java
import java.util.Scanner;
public class PrimeInArray {
    public static boolean isPrime(int num) {
        for(int i=2;i<num;i++) {
            if(num%i==0) {
                return false;
            }
        }
        return true;
    }
    public static void main(String[] args) {
        int[] arr= {10,12,17,19,25,85,96,56,11};
        for(int i=0;i<arr.length;i++) {
            if(isPrime(arr[i])) {
                System.out.println(arr[i] +" _ At index "+ i);
            }
        }
    }
}

```

The output for the following program is:

```
0 1 5 10 15 Roshans-MacBook-Air:5th week roshan$ cd
17 _ At index 2
19 _ At index 3
11 _ At index 8
Roshans-MacBook-Air:5th week roshan$
```