LAB-1

Q1. WAP to find the sum of n integers.

Ans.
```
import java.util.*;
public class q1
{
  public static void main (String[] args)
  {
    System.out.print("Enter no. of terms to be
    input: ");
    Scanner sc = new Scanner (System.in);
    int n = sc.nextInt();
    int sum=0;
    for (int i=1; i<=n; i++)
    {
      System.out.print("Enter no: ");
      int x = sc.nextInt();
      sum += x;
    }
    System.out.println("Sum is: " + sum);
  }
}
```

Q2: WAP to search an element from the array using sequential search.

Ans.
```
import java.util.*;
public class Q2
{
  public static void main(String[] args)
  {
    Scanner sc=new Scanner(System.in);
    System.out.print("Enter no. of term:");
    int n=sc.nextInt();
    int a[]=new Int[n];
    for(int i=0; i<a.length; i++)
    {
      a[i]=sc.nextInt();
    }
    System.out.println();
    System.out.print("Enter element to be
    searched :");
    int ele=sc.nextInt();
    int count=0;
    for(int i=0; i<a.length; i++)
    {
      if(ele==a[i])
      {
        System.out.println("found");
        count+=1;
      }
    }
```

```
        if (count == 0)
        {
            System.out.println("Not found");
        }
        sc.close();
    }
}
```

Output:

```
Enter no. of term : 5

2
3
4
5
1
Enter element to be searched : 3.
Found!
```

Q3. WAP to find the factorial of a no.

Ans.
```
import java.util.*;
Public class Q3
{
  public static void main (String[] args)
  {
    Scanner sc=new Scanner (System.in);
    System.out.print("Enter a no.");
    int n= sc.nextInt();
    int count=1;
    int fact=1;
    while (count<=n)
    {
      fact *= count;
      count++;
    }
    System.out.println("Factorial of "+n+
    "is "+fact);
    sc.close();
  }
}
```

Q3. WAP to find the factorial of a no.

Ans.
```
import java.util.*;
public class Q3
{
  public static void main (String[] args)
  {
    Scanner sc= new Scanner (System.in);
    System.out.print("Enter a no.");
    int n= sc.nextInt();
    int count=1;
    int fact=1;
    while (count<=n)
    {
      fact *= count;
      count++;
    }
    System.out.println("Factorial of "+n+
    "is "+fact);
    sc.close();
  }
}
```

Output:

Enter a no. 5

Factorial of 5 is 120.

Q4. WAP to find the maximum and minimum element from the array of 'n' inputs.

Ans.
```
import java.util.*;
Public class Q4
{
  public static void main (String[] args)
  {
    Scanner sc = new Scanner (System.in);
    System.out.print("Enter no. of terms : ");
    int n = sc.nextInt();
    int a[] = new int[n];
    for(int i=0; i<a.length; i++)
    {
      a[i] = sc.nextInt();
    }
    System.out.println();
    int max = a[0];
    int min = a[0];
    for(int i=0; i<a.length; i++)
    {
      if(a[i] > max)
      {
        max = a[i];
      }
      if(a[i] < min)
      {
        min = a[i];
      }
    }
```

```
            System.out.println("Max. element is "+
            max);
            System.out.println("Min. element is "+
            min);
        }
    }
```

Output:

```
Enter no. of terms : 5
7
4
8
1
3
Max. element is 8
Min. element is 1
```

Q5: Write a program to display nth Fibonacci no.

Ans:

```
import java.util.*;
public class Q5
{
  public static void main( String[] args)
  {
    Scanner sc=new Scanner (System.in);
    System.out.print("Enter the term position
    to display:");
    int n = sc.nextInt();
    int a=0;
    int b=1;
    int c;
    int pos=3;
    System.out.println("Fibonacci series:");
    if (n==1)
    {
      System.out.println(a);
    }
else if (n==2)
    {
      System.out.println(b);
    }
    else
    {
```

```
        while (pos<=n)
        {
            c = a+b;
            a = b;
            b = c;
            pos+=1;
        }
    }
    System.out.println("\n"+"th Fibonacci
    no. is "+b);
  }
}
```

Output :-

Enter the term position to display : 7

7 th Fibonacci no. is 8

Q6. Write a program to search an element from an array using binary search. (Let all the element input is in ascending or descending order

Ans
```
import java.util.*;
public class Q6
{
  public static void main (String[] args)
  {
    Scanner sc=new Scanner (System.in);
    System.out.print("Enter no. of term:");
    int n=sc.nextInt();
    int a[]=new int[n];
    for(int i=0; i<a.length; i++)
    {
      a[i]=sc.nextInt();
    }
    System.out.println("Enter the no. to be
    searched:");
    int x=sc.nextInt();
    int count=0;
    int start=0;
    int end=n-1;
    while (start<=end)
    {
      int mid=(start+end)/2;
```

Name:_____ Regd. Number:_____

```
            if (x == a[mid])
            {
                System.out.println("Element
                found!");
                count+=1;
                break;
            }
            else if (x<a[mid])
            {
                end= mid-1;
            }
            else
            {
                start=mid+1;
            }
        }
        if (count==0)
        {
            System.out.println("Not found");
        }
    }
}
```

Output:

```
Enter no. of terms: 5
10
20
30
40
50
Enter the no. to be searched : 78
Not found!
```