Week - 1

1a)Write a Java program to display default value of all primitive data type of JAVA.

AIM: To write a Java program to display default value of all primitive data type.

PROGRAM:

```
class Demo
{
	static boolean val1;
	static double val2;
	static float val3;
	static int val4;
	static long val5;
	static String val6;
	public static void main(String args[])
	{
		System.out.println("Default values.....");
		System.out.println("Val1= "+val1);
		System.out.println("Val2= "+val2);
		System.out.println("Val3= "+val3);
		System.out.println("Val4= "+val4);
		System.out.println("Val5= "+val5);
		System.out.println("Val6= "+val6);
	}
}
```

OUTPUT:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac Demo.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java Demo
Default values.....
Val1= false
Val2= 0.0
Val3= 0.0
Val4= 0
Val5= 0
Val6= null

C:\Users\prasa\OneDrive\Desktop\java pgm>
```

1b)Write a Java program to find out the roots of the Quadratic Equations.

AIM: To write a Java program to find the discriminant value D and find out the roots of the quadratic equation of the form $ax^2+bx+c=0$.

PROGRAM:

```
import java.util.*;

class Quadratic

{

        public static void main(String args[])

        {

                double a,b,c,d;

                double root1,root2;

                Scanner sc=new Scanner(System.in);

                System.out.println("Enter a value");

                a=sc.nextDouble();

                System.out.println("Enter b value");

                b=sc.nextDouble();

                System.out.println("Enter c value");

                c=sc.nextDouble();

                d=b*b-4*a*c;

                if(d>0)

                {

                        root1=(-b+Math.sqrt(d))/(2*a);

                        root2=(-b+Math.sqrt(d))/(2*a);

                        System.out.println("Root1="+root1+"Root2="+root2);

                        System.out.println("Roots are distinct");

                 }
```

```
            else if(d==0)
            {
                root1=root2=(-b)/(2*a);
                System.out.println("Root1="+root1+"Root2="+root2);
                System.out.println("Roots are equal");
            }
            else
            {
                System.out.println("Roots are imaginary");
            }
        }
}
```

OUTPUT:

Case 1:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac Quadratic.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java Quadratic
Enter a value
3
Enter b value
5
Enter c value
4
Roots are imaginary
```

Case 2:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac Quadratic.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java Quadratic
Enter a value
1
Enter b value
4
Enter c value
4
Root1=-2.0Root2=-2.0
Roots are equal
```

Week-2

2a)Write a Java program to implement binary search.

AIM: To write a Java program to implement binary search.

PROGRAM:

```
import java.util.*;
class Binary
{
	public static void main(String args[])
	{
		int a[]=new int[20];
		int n,key,mid,l,h;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter size of array");
		n=sc.nextInt();
		System.out.println("Enter the array elements in ascending order");
		for(int i=0;i<n;i++)
		a[i]=sc.nextInt();
		System.out.println("Enter key");
		key=sc.nextInt();
		l=0;
		h=n-1;
		while(l<=h)
		{
			mid=(l+h)/2;
			if(key==a[mid])
			{
```

```
                System.out.println("Element found at "+(mid+1));
                break;
            }
            else if(key<a[mid])
            h=mid-1;
            else
            l=mid+1;
        }
        if(l>h)
        System.out.println("Element not found");
    }
}
```

OUTPUT:

Case 1:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac Binary.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java Binary
Enter size of array
5
Enter the array elements in ascending order
2
4
6
8
12
Enter key
4
Element found at 2
```

Case 2:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac Binary.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java Binary
Enter size of array
5
Enter the array elements in ascending order
3
4
6
8
10
Enter key
5
Element not found
```

2b)Write a Java program to sort for an element in a given list of elements using bubble sort.

AIM: To write a Java program to sort for an element in a given list of elements using bubble sort.

PROGRAM:

```
import java.util.Scanner;
class BubbleSort
{
	public static void main(String args[])
	{
		int i,j,n;
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter the no.of elements:");
		n=sc.nextInt();
		int[] a = new int[n];
		System.out.println("Enter the elements:");
		for(i=0;i<n;i++)
		{
			a[i]=sc.nextInt();
		}
		int temp;
		for(i=0;i<n-1;i++)
		{
			for(j=0;j<n-i-1;j++)
			{
				if(a[j]>a[j+1])
				{
					temp=a[j];
					a[j]=a[j+1];
					a[j+1]=temp;
				}
```

```
                }
            }
            System.out.println("Sorted List");
            for(int k : a)
            {
                System.out.print(k + " ");
            }
        }
}
```

OUTPUT:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac BubbleSort.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java BubbleSort
Enter the no.of elements:
5
Enter the elements:
23
54
34
65
32
Sorted List
23 32 34 54 65
```

2c)Write a Java program for using String Buffer to remove or delete a character.

AIM: To write a Java program for using String Buffer to remove or delete a character.

PROGRAM:

```
import java.util.*;
class StringBufferDemo
{
    public static void main(String[] args)
    {
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter the any String :");
        StringBuffer str = new StringBuffer();
        str.append(scan.nextLine());
        System.out.println("Enter the position of the charcter for
        delete:");
        int x = scan.nextInt();
        str.delete(x-1,x);
        System.out.println(str);
    }
}
```

OUTPUT:

```
Enter the any String :
Prashanth
Enter the position of the charcter for delete:
5
Prasanth
```

Week-3

3a)Write a Java program to implement class machanism. Create a class, methods and invoke them inside main method.

AIM: To write a Java program to implement class mechanism. Create a class, methods and invoke them inside main method.

PROGRAM:

```
class Sample
{
    void show()
    {
        System.out.println("Method");
    }
    public static void main(String args[])
    {
        Sample s = new Sample();
        s.show();
    }
}
```

OUTPUT:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac Sample.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java Sample
Method
```

3b)Write a Java program to implement method overloading.

AIM: To write a Java program to implement method overloading.

PROGRAM:

```
 import java.util.*;
class Demo{
        int add(int a,int b){
                System.out.println("This is two integer add function");
                 return a+b;
        }
        double add(double a,double b){
                 System.out.println("This is two double add function");
                 return (a+b);
        }
        String add (String s){
                 System.out.println("This is string concatenation function");
                 return "Hello "+s;
        }
}
class OverloadingDemo{
        public static void main(String[] args) {
                Demo d = new Demo();
                System.out.println(d.add(45,18));
                System.out.println(d.add(30.4,7.12));
                System.out.println(d.add("World"));
        }
}
```

OUTPUT:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac OverloadingDemo.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java OverloadingDemo
This is two integer add function
63
This is two double add function
37.519999999999996
This is string concatenation function
Hello World
```

3c)Write a Java program to implement constructor.

AIM: To write a Java program to implement constructor.

PROGRAM:

```
class Demo

{

    Demo(){

       System.out.println("Constructor");

      }

    public static void main(String args[])

    {

       Demo d = new Demo();

    }

}
```

OUTPUT:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac Demo.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java Demo
Constructor
```

3d)Write a Java program to implement constructor and constructor overloading.

AIM: To write a Java program to implement constructor and constructor overloading.

PROGRAM:

```
class ConstructorDemo{
        String Name;
        int Age;
        char Gender;
        int number;
        ConstructorDemo(){
                System.out.println("This is default constructor");
        }
ConstructorDemo(int number){
        this();
        this.number = number;
        System.out.println("This is one - arg constructor");
}
ConstructorDemo(char Gender,int number){
        this(number);
        this.Gender = Gender;
        System.out.println("This is two - arg constructor");
}
ConstructorDemo(String Name,int age,char Gender,int number){
        this(Gender,number);
        this.Name = Name;
```

```
        this.Age = age;

        System.out.println("This is three - arg constructor");

}

void display(){

        System.out.println("\nThe details are");

        System.out.println("\nName"+Name+"\nAge:"+Age+"\nGender:"+Gender+"\nNUmbe
r:"+number);

}

public static void main(String[] args){

        ConstructorDemo demo1 = new

        ConstructorDemo("Prasanth",18,'M',80);

        demo1.display();

}

}
```

OUTPUT:

```
C:\Users\prasa\OneDrive\Desktop\java pgm>javac ConstructorDemo.java

C:\Users\prasa\OneDrive\Desktop\java pgm>java ConstructorDemo
This is default constructor
This is one - arg constructor
This is two - arg constructor
This is three - arg constructor

The details are

NamePrasanth
Age:18
Gender:M
NUmber:80
```