Program 1:

```
import java.util.Scanner;
public class Program_1{
	public static void main(String[] args){
		double num;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a number");
		num=sc.nextDouble();
		if(num>0)
			System.out.println("Number is positive");
		else if(num<0)
			System.out.println("Number is negative");
		else if(num==0)
			System.out.println("Number is zero");
	}
}
```

Program 2:

```
import java.util.Scanner;
public class Program_2{
	public static void main(String[] args){
		double a,b,c;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter first number");
		a=sc.nextDouble();
		System.out.println("Enter second number");
		b=sc.nextDouble();
		System.out.println("Enter third number");
```

```
                c=sc.nextDouble();
                if(a>b && a>c)
                        System.out.println(a+ " is maximum");
                else if(b>a && b>c)
                        System.out.println(b+ " is maximum");
                else
                        System.out.println(c+ " is maximum");
        }
}
```

Program 3:

```
import java.util.Scanner;
public class Program_3{
        public static void main(String[] args){
                double P,T,R,SI;
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter Principal");
                P=sc.nextDouble();
                System.out.println("Enter Time");
                T=sc.nextDouble();
                System.out.println("Enter rate");
                R=sc.nextDouble();
                SI=(P*R*T)/100;
                System.out.println("Simple interest is " +SI);
        }
}
```

Program 4:

```
import java.util.Scanner;
```

```
public class Program_4{
	public static void main(String[] args){
		int num;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a number");
		num=sc.nextInt();
		if((num%5==0) && (num%11==0))
			System.out.println("Number is divisible");
		else
			System.out.println("Number is not divisible");
	}
}
```

Program 5:

```
import java.util.Scanner;
public class Program_5{
	public static void main(String[] args){
		char ch;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a character");
		ch=sc.next().charAt(0);
		if((ch>=65 && ch<=90) || (ch>=97 && ch<=122))
			System.out.println("Alphabet");
		else if(ch>=48 && ch<=57)
			System.out.println("Digit");
		else
			System.out.println("Special character");
	}
```

```
}
```

Program 6:

```
import java.util.Scanner;
public class Program_6{
	public static void main(String[] args){

		float c_price,s_price,Total=0;;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a cost price");
		c_price=sc.nextFloat();

		System.out.println("Enter a selling price");
		s_price=sc.nextFloat();
		if(s_price>c_price)
		{
			Total=s_price-c_price;
			System.out.println("Profit = " +Total);
		}
		else if(c_price>s_price)
		{
			Total=c_price-s_price;
			System.out.println("Loss = " +Total);
		}
		else
			System.out.println("No profit or loss");
	}
}
```

Program 7:

```
import java.util.Scanner;
public class Program_7{
	public static void main(String[] args){

		int num,sum=0;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a number");
		num=sc.nextInt();
		for(int temp=1;temp<=num;temp++)
		{
			int count=0;
			for(int i=temp;i>=1;i--)
			{
				if(temp%i==0)
				{
					count++;
				}
			}
			if(count==2)
			{
				sum=sum+temp;
			}
		}

			System.out.println("Sum of prime numbers is " +sum);
	}
```

```
}
```

Program 8:

```
import java.util.Scanner;
public class Program_8{
	public static void main(String[] args){

		int num,sum=0,temp,r;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a number");
		num=sc.nextInt();
		temp=num;
			while(num!=0)
			{
				r=num%10;
				sum=(sum*10)+r;
				num=num/10;
			}
			if(temp==sum)
			{
				System.out.println("Number is palindrome");
			}
			else
				System.out.println("Number is not palindrome");
	}
}
```

Program 9:

```
import java.util.Scanner;
```

```
import java.math.*;
public class Program_9{
	public static void main(String[] args){

		int num,count=0,first,last;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a number");
		num=sc.nextInt();
		last=num%10;
		count=(int)Math.log10(num);
		first=(int)(num/Math.pow(10,count));
		int swap=last;
		swap=swap*((int)(Math.pow(10,count)));
		swap=swap+((num%((int)(Math.pow(10,count)))));
		swap=swap-last;
		swap=swap+first;
				System.out.println(swap);
	}
}
```

Program 10:

```
import java.util.Scanner;
public class Program_10{
	public static void main(String[] args){

		int num,a=0,b=1,c;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a number");
```

```
                num=sc.nextInt();
                System.out.print(a+ " , " +b);
                for(int i=2;i<=num;i++)
                {
                        c=a+b;
                        System.out.print(" , " +c);
                        a=b;
                        b=c;
                }
        }
}
```

Program 11:

```
import java.util.Scanner;
public class Program_11{
        public static void main(String[] args){

                char ch;
                double Total,a,b;
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter first number");
                a=sc.nextDouble();
                System.out.println("Enter second number");
                b=sc.nextDouble();
                System.out.println("Enter which operation to perform from (+,-,*,/)");
                ch=sc.next().charAt(0);
                switch(ch)
                {
```

```
                case '+': Total=a+b;
                                System.out.print(a + " + " + b );
                                System.out.print(" = " + Total);
                                break;
                case '-': Total=a-b;
                                System.out.print(a + " - " + b );
                                System.out.print(" = " + Total);
                                break;
                case '*': Total=a*b;
                                System.out.print(a + " * " + b);
                                System.out.print( " = " + Total);
                                break;
                case '/': Total=a/b;
                                System.out.print(a + " / " + b );
                                System.out.print(" = " + Total);
                                break;
                default: System.out.println("No such operation");
            }
        }
}
```

Program 12:

```
import java.util.Scanner;
public class Program_12{
        public static void main(String[] args){

            int[] arr=new int[10];
            Scanner sc=new Scanner(System.in);
```

```
                System.out.println("Enter size of array");
                int n=sc.nextInt();
                for(int i=0;i<n;i++)
                {
                        arr[i]=sc.nextInt();
                }
                int min=arr[0],max=arr[0];
                for(int i=0;i<n;i++)
                {
                        if(arr[i]>max)
                                max=arr[i];
                        else if(arr[i]<min)
                                min=arr[i];
                }
                 System.out.println("Max = " +max);
                 System.out.println("Min = " +min);
        }
}
```

Program 13:

```
import java.util.Scanner;
import java.util.Arrays;
public class Program_13{
        public static void main(String[] args){

                int[] arr={1,21,13,45,78};
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter number to insert in an array");
```

```
		int n=sc.nextInt();
		int len=arr.length;
		int arr1[]=new int[len+1];

		for(int i=0;i<len;i++)
		{
			arr1[i]=arr[i];
		}
		arr1[len]=n;
		System.out.print(Arrays.toString(arr1));
	}
}
```

Program 14:

```
import java.util.Scanner;
public class Program_14{
	public static void main(String[] args){

		int[] arr=new int[10];
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter size of array");
		int n=sc.nextInt();

		System.out.println("Enter elements of array");
		for(int i=0;i<n;i++)
		{
			arr[i]=sc.nextInt();
```

```
                }
                System.out.print("Original array is: ");
                for(int i=0;i<n;i++)
                {
                        System.out.print(arr[i] +" ");
                }
                System.out.println("");
                System.out.print("Unique elements: ");
                for(int i=0;i<n;i++)
                {
                        int j;
                        for(j=0;j<i;j++)
                                if(arr[i]==arr[j])
                                break;
                if(i==j)
                        System.out.print(arr[i] +" ");
                }
        }
}
```

Program 15:

```
import java.util.Scanner;
import java.util.*;
public class Program_15{
        public static void main(String[] args){

                int[] arr=new int[10];
                int [] freq=new int[10];
```

```
int visited=-1;
Scanner sc=new Scanner(System.in);
System.out.println("Enter size of array");
int n=sc.nextInt();



System.out.println("Enter elements of array");
for(int i=0;i<n;i++)
{
        arr[i]=sc.nextInt();
}

for(int i=0;i<n;i++)
{
        int count=1;
for(int j=i+1;j<n;j++)
{
        if(arr[i]==arr[j])
        {
                count++;
                freq[j]=visited;
        }
}
if(freq[i]!=visited){
        freq[i]=count;
        }
}
```

```
                for(int i=0;i<n;i++){
                        if(freq[i]!=visited){
                                System.out.print(arr[i]+ " is visited ");
                                System.out.print(freq[i]+ " times.");
                        }
                        System.out.println("");
                }
        }
}
```

Program 16:

```
import java.util.Scanner;
import java.util.*;
public class Program_16{
        public static void main(String[] args){

                int[] arr=new int[10];
                int temp=0;
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter size of array");
                int n=sc.nextInt();

                System.out.println("Enter elements of array");
                for(int i=0;i<n;i++)
                {
                        arr[i]=sc.nextInt();
                }
```

```
                System.out.print("Original array is :");
                for(int i=0;i<n;i++)
                {
                        System.out.print(arr[i]+ " ");
                }
                for(int i=0;i<n;i++){
                        for(int j=i+1;j<n;j++){
                                if(arr[i]>arr[j]){
                                        temp=arr[i];
                                        arr[i]=arr[j];
                                        arr[j]=temp;
                                }
                        }
                }
                System.out.println("");
                System.out.print("Sorted array:");
                for(int i=0;i<n;i++){
                        System.out.print(arr[i]+ " ");
                }
        }
}
```

Program 17:

```
import java.util.Scanner;
import java.util.*;
public class Program_17{
        public static void main(String[] args){
```

```
        String str;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the string");
        str=sc.nextLine();
        char a[]=str.toCharArray();

        for(int c=0;c<a.length;c++)
        {
            if(a[c]>='A' &&a[c]<='Z')
            {
                a[c]=(char)((int)a[c]+32);
            }
            else if(a[c]>='a' &&a[c]<='z')
            {
                a[c]=(char)((int)a[c]-32);
            }
        }

        System.out.println("String after toggle :");
        for(int i=0;i<a.length;i++)
        {
            System.out.print(a[i]);
        }

    }
}
```

Program 18:

```
import java.util.Scanner;
import java.util.*;
public class Program_18{
	public static void main(String[] args){

		String str;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter the string");
		str=sc.nextLine();

		int freq[]=new int[str.length()];
		char maxChar=str.charAt(0);
		int max;
		char a[]=str.toCharArray();

		for(int i=0;i<a.length;i++)
		{
			freq[i]=1;
			for(int j=i+1;j<a.length;j++){
			if((a[i]==a[j]) && (a[i]!=' ') && (a[i]!='0'))
			{
				freq[i]++;
				a[j]='0';
			}
			}
		}
		max=freq[0];
```

```
		for(int i=0;i<freq.length;i++)
		{
			if(max<freq[i])
			{
				max=freq[i];
				maxChar=a[i];
			}
		}
		System.out.println("Maximum frequency character is:" +maxChar);

	}
}
```

Program 19:

```
import java.util.Scanner;
import java.util.*;
public class Program_19{
	public static void main(String[] args){

		Scanner sc=new Scanner(System.in);
		System.out.println("Enter a number");
		int num=sc.nextInt();
		int a[]=new int[100];
		int r=0;
		while(num>0){
			r=num%10;
			a[r]++;
			num=num/10;
```

```
                }
                for(int i=0;i<a.length;i++)
                {
                        int count=a[i];
                        if(count!=0){
                                System.out.println(i+ " occurs " +count +"times");
                        }
                }

        }
}
```

Program 20:

```
import java.util.Scanner;
import java.util.*;
public class Program_20{
        public static void main(String[] args){

                String str2="";
                Scanner sc=new Scanner(System.in);
                System.out.println("Enter a string");
                String str=sc.nextLine();
                for(int i=str.length()-1;i>=0;i--)
                {
                        str2=str2+str.charAt(i);
                }
                if(str.equals(str2))
                {
```

```
                System.out.println("String " +str+ " is palindrome");
            }
            else
            {
                System.out.println("String " +str+ " is not palindrome");
            }
        }
}
```