1.

My Code –

import java.util.Scanner;

public class FactorialWhileLoop

{

    public static void main(String[] args)

    {

        Scanner input = new Scanner(System.in);

        System.out.print("Enter the non-negative number to process its factorial: ");

        int number = input.nextInt();

        int fact = 1;

        int i = 1;

        while (i<=number)

        {

            fact = fact\*i;

            i++;

        }

        System.out.print("The Factorial of " + number + "! = ");

        for (int j = number; j >= 1; j--)

        {

            if (j == 1)

            {

                System.out.print(j + " = ");

            }

            else

            {

                System.out.print(j +" x ");

            }

        }

        System.out.println(fact);

    }

}

Output –

A black screen with yellow and white text

Description automatically generated

2.

My Code –

import java.util.Scanner;

public class FactorialForLoop

{

    public static void main(String[] args)

    {

        Scanner input = new Scanner(System.in);

        System.out.print("Enter the non-negative number to process its factorial: ");

        int number = input.nextInt();

        int fact = 1;

        for (int i = 1; i <=number; i++)

        {

            fact = fact\*i;

        }

        System.out.print("The Factorial of " + number + "! = ");

        for (int j = number; j >= 1; j--)

        {

            if (j == 1)

            {

                System.out.print(j + " = ");

            }

            else

            {

                System.out.print(j +" x ");

            }

        }

        System.out.println(fact);

    }

}

Output –

A screen shot of a black background

Description automatically generated

3.

My Code –

public class Alphabet

{

    public static void main(String[] args)

    {

        //UpperCase Alphabets

        System.out.print("Uppercase Alphabets: ");

        for (char ch = 'A'; ch <= 'Z'; ch++)

        {

            System.out.print(ch + " ");

        }

        System.out.println();

        //LowerCase Alphabets

        System.out.print("Lowercase Alphabets: ");

        for (char ch = 'a'; ch <= 'z'; ch++)

        {

            System.out.print(ch + " ");

        }

        System.out.println();

        //Uppercase Alphabets in Reverse

        System.out.print("Uppercase Alphabets in Reverse: ");

        for (char ch = 'Z'; ch >= 'A'; ch--)

        {

            System.out.print(ch + " ");

        }

        System.out.println();

        //Lowercase Alphabets in Reverse

        System.out.print("Lowercase Alphabets in Reverse: ");

        for (char ch = 'z'; ch >= 'a'; ch--)

        {

            System.out.print(ch + " ");

        }

    }

}

Output –

A computer screen shot of a black background with yellow letters

Description automatically generated

4.

My Code –

import java.util.Scanner;

public class NumberSystem

{

    public static void main(String[] args)

    {

        Scanner input = new Scanner(System.in);

        System.out.print("Enter the non-negative number for binary conversion: ");

        int value = input.nextInt();

        int originalValue = value;

        String rslt = "";

        while (value>0)

        {

            int remainder = value%2;

            rslt = remainder + rslt;

            value = value/2;

        }

        System.out.println("The binary conversion of " + originalValue + " is = " + rslt);

    }

}

Output –

A black screen with yellow and white text

Description automatically generated

5. My Code –

import java.util.Scanner;

public class StringAnalyze

{

    public static void main(String[] args)

    {

        Scanner input = new Scanner(System.in);

        System.out.print("Enter a string: ");

        String ch = input.nextLine();

        int isUpperCase = 0;

        int isLowerCase = 0;

        int isDigit = 0;

        int isWhiteSpace = 0;

        for (int i = 0; i < ch.length(); i++)

        {

            char CrntCh = ch.charAt(i);

            if (Character.isUpperCase(CrntCh))

            {

                isUpperCase++;

            }

            else if (Character.isLowerCase(CrntCh))

            {

                isLowerCase++;

            }

            else if (Character.isDigit(CrntCh))

            {

                isDigit++;

            }

            else if (Character.isWhitespace(CrntCh))

            {

                isWhiteSpace++;

            }

        }

        System.out.println("Uppercase letters: " + isUpperCase);

        System.out.println("Lowercase letters: " + isLowerCase);

        System.out.println("Digits: " + isDigit);

        System.out.println("Whitespace characters: " + isWhiteSpace);

    }

}

Output –

A screen shot of a computer

Description automatically generated

6.

My Code –

import java.util.Scanner;

public class PasswordValidator

{

    public static void main(String[] args)

    {

        Scanner input = new Scanner(System.in);

        System.out.print("Enter Your Password: ");

        String password = input.nextLine();

        boolean condition = isValid(password);

        if (condition == true)

        {

            System.out.println("\"Congratulations! Your password meets the criteria.\"");

        }

        else

        {

            System.out.println("Sorry, your password must:\n- Be at least 8 characters long\n- Contain at least one uppercase letter\n- Contain at least one lowercase letter\n- Contain at least one digit\n- Not contain any whitespace characters\n");

        }

    }

    public static boolean isValid(String password)

    {

        boolean hasUpperCase = false;

        boolean hasLowerCase = false;

        boolean hasDigit = false;

        boolean hasWhiteSpace = true;

        if (password.length()<8)

        {

            return false;

        }

        else

        {

            for (int i = 0; i < password.length(); i++)

            {

                if (Character.isUpperCase(password.charAt(i)))

                {

                    hasUpperCase =  true;

                }

                else if (Character.isLowerCase(password.charAt(i)))

                {

                    hasLowerCase =  true;

                }

                else if (Character.isDigit(password.charAt(i)))

                {

                    hasDigit = true;

                }

                else if (Character.isWhitespace(password.charAt(i)))

                {

                    hasWhiteSpace = false;

                }

            }

            return hasUpperCase && hasLowerCase && hasDigit && hasWhiteSpace;

        }

    }

}

Output –

A screen shot of a computer program

Description automatically generated

7.

My Code –

import javax.swing.JOptionPane;

public class GUICalculator

{

    public static void main(String[] args)

    {

        String input1 = JOptionPane.showInputDialog("Enter the first number");

        int number1 = Integer.parseInt(input1);

        String input2 = JOptionPane.showInputDialog("Enter the second number");

        int number2 = Integer.parseInt(input2);

        int addition = add(number1,number2);

        int substraction = sub(number1,number2);

        JOptionPane.showMessageDialog(null, "Addition Result: " + addition + "\n" + "Substraction Result: " + substraction);

    }

    public static int add(int number1, int number2)

    {

        return number1 + number2;

    }

    public static int sub(int number1, int number2)

    {

        return number1 - number2;

    }

}

Output –

1st Input - 2nd Input - Result -

A screenshot of a computer

Description automatically generatedA screenshot of a computer error

Description automatically generatedA screenshot of a computer error

Description automatically generated