Read an Employee data with idno, name and mobile number (regular expression) and compare the mobile number must have only 10 digits name can consists of only alphabets , space character idno number consists of 5 digits.

```
package Bhaghi.com;

import java.util.*;

import java.util.regex.*;

public class Employee {


	public static void main(String[] args) {

		int idno;

		long number;

		String name;

		Scanner key = new Scanner(System.in);

		System.out.println("Enter Your ID ");

		idno=key.nextInt();

		System.out.println("Enter Your Name ");

		name=key.next();

		System.out.println("Enter Your Number ");

		number=key.nextLong();


		boolean isIdValid = String.valueOf(idno).matches("\\d{5}");
boolean isNameValid = name.matches("[A-Za-z\\\\s!@#$%^&*()_-]+");
boolean isMobileNumberValid = String.valueOf(number).matches("\\d{10}");


if (isIdValid && isNameValid && isMobileNumberValid) {
   System.out.println("Employee data is valid.");
} else {
   System.out.println("Invalid employee data:");
   if (!isIdValid) {
      System.out.println("- Invalid ID. ID should consist of 5 digits.");
   }
   if (!isNameValid) {
```

```
            System.out.println("- Invalid name. Name should consist of alphabets and spaces only.");
        }
        if (!isMobileNumberValid) {
            System.out.println("- Invalid mobile number. Mobile number should consist of 10 digits.");
        }
    }
        }

}
```

Output:

Enter Your ID

45645

Enter Your Name

Ayyappa

Enter Your Number

1234567899

Employee data is valid.

2. Write a muti-threading program,

thread 1: to display all perfect numbers,

thread 2: to display factorial value of numbers from 1 to 10.

```
package Bhaghi.com;
public class Perfect extends Thread {
        public void run() {
                System.out.println("Thread 1: Perfect Values");
                long  num, sum, i;
    for (i = 1; i<=10000; i++)
    {
        sum=0;
        num=i;
```

```
            for(int j=1;j<num;j++)
            {
                    if (num % j == 0)
                    {
             sum = sum + j;
                    }
            }
            if (sum == i) {
              System.out.println(i + " is a Perfect Number");
           }
       }
            }
}

package Bhaghi.com;
public class Factorial extends Thread {
            int num;
            public void run() {
                    System.out.println("Thread 2: Factorial Values");
       for (int i = 1; i <= 10; i++) {
          System.out.println(i + "! = " + factorial(i));
       }
    }
    private int factorial(int num) {
       if (num == 0 || num == 1) {
          return 1;
       }
       return num * factorial(num - 1);
            }
}
package Bhaghi.com;
```

```
public class MultiThreads  {
        public static void main(String[] args) {
                Thread t1 = new Thread(new Perfect());
    Thread t2 = new Thread(new Factorial());
    t1.start();
    try {
       t1.join(); // Wait for t2 to complete
    } catch (InterruptedException e) {
       e.printStackTrace();
    }
    t2.start();
        }
}
```

Output:

Thread 1: Perfect Values

6 is a Perfect Number

28 is a Perfect Number

496 is a Perfect Number

8128 is a Perfect Number

Thread 2: Factorial Values

1! = 1

2! = 2

3! = 6

4! = 24

5! = 120

6! = 720

7! = 5040

8! = 40320

9! = 362880

10! = 3628800

Program 3:

Write a program to read the data from file

```
package test.com;

import java.io.*;

import java.util.Scanner;


public class Read {


        public static void main(String[] args)throws IOException {

                DataInputStream dis = new DataInputStream(System.in);

                FileWriter fw = new FileWriter("C:\\programs\\aasrita.txt");

                BufferedWriter br=new BufferedWriter(fw);

                String str=null;

                int size;

                while( true )

                {

                                System.out.println("Enter file input");

                str=dis.readLine();

                if(str.equals("null"))

                break;

                size=str.length();

                br.write(str,0,size); //write to file

                br.write("\n");

                }



                br.close();

                fw.close();

                }}
```

o/p:

string

basic

Program 4:

Write a program to write the content to file in append mode.

```
package test.com;
import java.io.*;
public class StrAppend {
        public static void appendStrToFile(String fileName,String str)
{
          try {
                  FileWriter fw = new FileWriter(fileName,true);
                  BufferedWriter out = new BufferedWriter(fw);
      out.write(str);
      out.close();
   }
   catch (IOException e) {
      System.out.println(e);
   }
 }
 public static void main(String[] args) throws Exception
 {
   String fileName = "string.txt";
   try {
         FileWriter fw = new FileWriter(fileName,true);
                  BufferedWriter out = new BufferedWriter(fw);
      out.write("Hi,");
      out.close();
   }
   catch (IOException e) {
```

```
        System.out.println(e);
    }
    String str = "How are you";
    appendStrToFile(fileName, str);
    try {
            FileReader fr = new FileReader("string.txt");
        BufferedReader in = new BufferedReader(fr);

        String mystring;
        while ((mystring = in.readLine()) != null) {
            System.out.println(mystring);
        }
    }

    catch (IOException e) {
        System.out.println(e);
    }
 }

}
```

o/p:

Hi,How are you