

## E.V.K.Deepthi (AF0311771)

**Q1. Read an Employee data with I'd, name and mobile number (regular expression and compare the mobile number must have only 10 digits name can consists of only alphabets, space character i'd number consists of 5 digits?**

```
package LAB4;
import java.util.*;
import java.util.regex.*;
public class RegExp {
public static void main(String[] args) {
// To Read the input from system
Scanner sc = new Scanner(System.in);
System.out.println("Enter Name consists of 5 charecters");
System.out.println("Enter ID number");
String id= sc.next();
System.out.println("Enter Name");
String name= sc.next();
System.out.println("Enter 10 digit Mobile number");
String mobile= sc.next();
if(Pattern.matches("\\d\\d\\d\\d\\d\\d\\d\\d\\d\\d", mobile))
System.out.println("valid mobile number");
else
System.out.println("Invalid mobile number");
}
}
```

**OUTPUT:**

Enter Name consists of 5 charecters

Enter ID number

3

Enter Name

Deepthi!

Enter 10 digit Mobile number

9123456989

valid mobile number

**(OR)**

Enter Name consists of 5 charecters

Enter ID number

3

Enter Name

DEEPTHI!

Enter 10 digit Mobile number

35621

Invalid mobile number

**Q2. Write a multithreading program, Thread 1; to display all perfect number Thread 2: to display factorial value of numbers from 1 to 10**

```
package LAB4;
public class MultiThread4 {
public static void main(String[] args) {
    First4 o1 = new First4();
    Second4 o2 = new Second4();
    Thread t1 = new Thread(o1);
    Thread t2 = new Thread(o2);
    t1.start();
    t2.start();
    System.out.println("End of Main");
}
}
```

**Thread 1 : to display all perfect numbers,**

```
package LAB4;
public class First4 implements Runnable {
public void run()
{
for(int i=1;i<=100000;i++)
{
int n=i;
int sum=0,factor=1;
while(factor<n)
{
if((n%factor)==0)
{
sum=sum+factor;
}
factor++;
}
if(sum==i)
{
System.out.println("perfect number is: ");
System.out.println(i+" ");
try
{
Thread.sleep(1000);
}
catch(Exception e)
```

```

{
System.out.println(e);
}
}
// System.out.println("End of First");
}
}
}

```

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

```

package LAB4;
import java.util.Scanner;
public class Second4 implements Runnable{
public void run() {
Scanner obj = new Scanner(System.in);
int n;
long fact=1;
long sum=0;
System.out.println("The Factorials are:");
for(int i=1;i<=10;i++)
{
fact=1;
for(int j=1;j<=i;j++)
{
fact=fact*j;
}
sum=sum+fact;
System.out.println(fact+" ! ");
}
// System.out.println("The Factorial is:");
try
{
Thread.sleep(2000);
}
catch(Exception e)
{
System.out.println(e);
}
//System.out.println("End of Second");
}
}

```

## **OUTPUT:**

End of Main

perfect number is:

6

The Factorials are:

1 !

2 !

6 !

24 !

120 !

720 !

5040 !

40320 !

362880 !

3628800 !

perfect number is:

28

perfect number is:

496

perfect number is:

8128

**Q3. Write a program read the data from file**

```
package LAB4;
import java.io.*;
public class DataFile {
public static void main(String[] args) throws IOException
{
    FileReader fr=new FileReader("F:\\Anudip\\Test.txt");
    BufferedReader br=new BufferedReader(fr);
    String str=null;
    while( true )
    { try
    { str=br.readLine();
    if(str.equals(null))
    break;
    System.out.println(str);
    }
    catch(NullPointerException e)
    { break; }
    }
    br.close();
    fr.close();
    }
}
```

**OUTPUT:**

Hello  
World

**Q4. Write a program to write content to file in append mode**

```
package LAB4;
import java.io.*;
//reading input from keyboard and write the data to file in character stream
public class Append {
public static void main(String[] args) throws IOException
{
    DataInputStream dis = new DataInputStream(System.in);
    //used to open the file for writer
    //FileWriter fw = new FileWriter("filename and path",appendmode);
    FileWriter fw = new FileWriter("F:\\Anudip\\Test.txt",true);
    //used to write data to file with the help of filewriter object
    BufferedWriter br=new BufferedWriter(fw);
    String str=null;
    int size;
    while( true )
    {
        System.out.println("Enter file input");
        str=dis.readLine(); //read fromkeyborad
        if(str.equals("null"))
        break;
        size=str.length();
        br.write(str,0,size); //write to file
        br.write("\n");
    }
    br.close();
    fw.close();
}
}
```

## OUTPUT:

The screenshot displays the Eclipse IDE interface. On the left, the Package Explorer shows a project named 'CS500100A' with several packages including 'LAB1', 'LAB2', 'LAB3', and 'LAB4'. The 'Append.java' file is selected. The main editor window shows the source code of 'Append.java', which is a Java class that reads input from the keyboard and writes it to a file. The code includes imports for 'java.io.\*', a package declaration 'package LAB4;', and a 'main' method that uses 'DataInputStream' to read input and 'FileWriter' to write it. A 'Test.txt' window is open, showing the output of the program: 'HelloWorld'. The Console window on the right shows the output of the program, which is 'Enter file input', 'Hello', 'Enter file input', 'World', 'Enter file input', and 'null'.

```
1 package LAB4;
2 import java.io.*;
3 //reading input from keyboard and write the data to file in character
4 public class Append {
5     public static void main(String[] args) throws IOException
6     {
7         DataInputStream dis = new DataInputStream(System.in);
8         //used to open the file
9         FileWriter fw = new FileWriter("Test.txt");
10        //used to write data to file
11        BufferedWriter br = new BufferedWriter(fw);
12        String str = null;
13        int size;
14        while( true )
15        {
16            System.out.println("Enter file input");
17            str = dis.readLine(); //read the input from keyboard
18            if(str.equals("null"))
19            {
20                break;
21            }
22            size = str.length();
23            br.write(str, 0, size); //write the input to file
24            br.write("\n");
25        }
26        br.close();
27        fw.close();
28    }
29 }
```

Test.txt - Notepad

HelloWorld

Enter file input  
Hello  
Enter file input  
World  
Enter file input  
null