Ex. No. **USER DEFINED EXCEPTION HANDLING**

Date:

Problem:

Implement exception handling and creation of user defined exceptions.

Aim:

To write a Java program to implement user defined exception handling.

Algorithm:

Step 1:Start.
Step 2:Create a class MyException that extends Exception class
Step 3:Get an input
Step 4:Check whether the input is greater than or equal to zero.
a) If yes, print the number.
b) Otherwise, handle the exception using try - catch block
Step 5:Stop.

Program:

```
import java.io.*;
class MyException extends Exception
{
        MyException(String message)
        {
        super(message);
        }
}
class ExceptMain
{
        public static void main(String a[])
        {
        BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
        try
        {
                System.out.printf("Enter a positive number : ");
                int no=Integer.parseInt(br.readLine());
                if(no<0)
                {
                        throw new MyException("     Number must be positive  ");
                }
                System.out.println(" Number:" +no);
        }
        catch(MyException e)
        {
```

```
                System.out.println("Caught the Exception");
                System.out.println(e.getMessage());
                System.out.println("Exception Handled..... !");
        }
        catch(Exception e)
        {
        System.out.println("Enter numbers ... Exception Handled!");
        }
        }
}
```

Viva Questions:

1. How will you Import the java packages.?
2. How to Create a subclass of Exception named as MyException?
3. When the exception is thrown?
4. How the main ( ) method sets up an exception handler?
5. Define exception handling in java?

Result:

Thus the Java program to implement user defined exception handling was implemented and the output was verified successfully.

Ex. No. **FILE HANDLING**

Date:

Problem:

Write a Java program to perform file operations.

Aim:

To write a Java program to perform file operations.

Algorithm:

Step 1:Start.
Step 2:Get the input as filename.
Step 3:If the filename exists, then
a) Print the details about the file (Is File?, Is Directory?, Is Readable?, Is Writable?, Type, Length of the file.
b) Otherwise, print "File does not exist"
Step 4:Stop.

Program:

```
import java.util.Scanner;
import java.io.File;
class FileInfo
{
public static String getFileExtension(File f1)
{
      String fileName = f1.getName();
      if(fileName.lastIndexOf(".") != -1 && fileName.lastIndexOf(".") != 0)
      return fileName.substring(fileName.lastIndexOf(".")+1);
      else return "Folder";
 }
         public static void main(String[] args)
         {
                  Scanner input=new Scanner(System.in);
                  System.out.print("\nEnter the filename: ");
                  String s=input.nextLine();
                  File f1=new File(s);
                  if(f1.exists())
                  {
                  System.out.println("\nDETAILS ABOUT THE FILE");
                  System.out.println(" ---------- ");
                  System.out.println("  File exists in : "+f1.getAbsolutePath());
                  System.out.println("\n  Is file?           :"+f1.isFile());
```

```
                System.out.println("  Is Directory?       :"+f1.isDirectory());
                System.out.println("\n  Is Readable?        :"+f1.canRead());
                System.out.println("  Is Writable?       :"+f1.canWrite());
                System.out.println("\n  Type               :"+getFileExtension(f1));
                System.out.println("\n  Length of the File  :"+f1.length()+" Bytes");


                }
        else
        {
                System.out.println("File does not exist");
        }

}
}
```

Viva Questions:

1. How will you Import the java packages.?
2. How to write a java program to implement file information?
3. How to create a File object associated with the file?
4. How the the program uses conditional operator to check different functionalities of the given file.?
5. How will you get the input during runtime?

Result:

Thus the Java program for reading a file name from the user and displaying the information about the file was written and the output was verified successfully.

Ex. No. **MINI PROJECT**
Date:

Problem:

Develop a mini project for any application using Java concepts.

Aim:

To develop a Hospital Management System as a mini project using java concepts

Algorithm:

Step 1: Start
Step 2: Create classes that are needed for hospital management system
Step 3: Get the option (Doctor, Patient, medical, lab,facility, Staff) and perform the operations.
Step 4: Stop

Program:

```
import java.io.*;
import java.util.*;
import java.util.Calendar;

class staff
{
String sid,sname,desg,sex;
int salary;
void new_staff()
{
Scanner input=new Scanner(System.in);
System.out.print("id:-");sid=input.nextLine();
System.out.print("name:-");sname=input.nextLine();
System.out.print("desigination:-");desg=input.nextLine();
System.out.print("sex:-");sex=input.nextLine();
System.out.print("salary:-");salary=input.nextInt();
}
void staff_info()
{
System.out.println(sid+"\t"+sname+"\t"+sex+"\t"+salary);
}
}



class doctor
{
String did,dname,specilist,appoint,doc_qual;
int droom;

void new_doctor()
```

```
{
Scanner input=new Scanner(System.in);
System.out.print("id:-");did=input.nextLine();
System.out.print("name:-");dname=input.nextLine();
System.out.print("specilization:-");specilist=input.nextLine();
System.out.print("work time:-");appoint=input.nextLine();
System.out.print("qualification:-");doc_qual=input.nextLine();
System.out.print("room no.:-");droom=input.nextInt();
}
void doctor_info()
{
System.out.println(did+"\t"+dname+"     \t"+specilist+"          \t"+appoint+"          \t"+doc_qual+"
\t"+droom);

}
}


class patient
{
String pid,pname,disease,sex,admit_status;
int age;

void new_patient()
{
Scanner input=new Scanner(System.in);
System.out.print("id:-");pid=input.nextLine();
System.out.print("name:-");pname=input.nextLine();
System.out.print("disease:-");disease=input.nextLine();
System.out.print("sex:-");sex=input.nextLine();
System.out.print("admit_status:-");admit_status=input.nextLine();
System.out.print("age:-");age=input.nextInt();
}
void patient_info()
{
System.out.println(pid+"\t"+pname+" \t"+disease+"     \t"+sex+"      \t"+admit_status+"\t"+age);
}
}

class medical
{
String med_name,med_comp,exp_date;
int med_cost,count;

void new_medi()
{
Scanner input=new Scanner(System.in);
System.out.print("name:-");med_name=input.nextLine();
System.out.print("comp:-");med_comp=input.nextLine();
System.out.print("exp_date:-");exp_date=input.nextLine();
System.out.print("cost:-");med_cost=input.nextInt();
System.out.print("no of unit:-");count=input.nextInt();
```

```
}
void find_medi()
{
System.out.println(med_name+"  \t"+med_comp+"    \t"+exp_date+"     \t"+med_cost);
}
}

class lab
{
String fecility;
int lab_cost;

void new_feci()
{
Scanner input=new Scanner(System.in);
System.out.print("fecility:-");fecility=input.nextLine();
System.out.print("cost:-");lab_cost=input.nextInt();
}
void feci_list()
{
System.out.println(fecility+"\t\t"+lab_cost);
}
}

class fecility
{

String fec_name;
void add_feci()
{
Scanner input=new Scanner(System.in);
System.out.print("fecility:-");fec_name=input.nextLine();

}
void show_feci()
{
System.out.println(fec_name);
}
}

public class HOSPITALMGT
{
public static void main(String args[])
{
String months[] = {
"Jan", "Feb", "Mar", "Apr",
"May", "Jun", "Jul", "Aug",
"Sep", "Oct", "Nov", "Dec"};
Calendar calendar = Calendar.getInstance();
int count1=4,count2=4,count3=4,count4=4,count5=4,count6=4;

System.out.println(" ----------------------------------------------------------------------------");
```

```
System.out.println("                    ***HOSPITAL MANAGEMENT SYATEM***");
System.out.println(" ------------------------------------------------------------------------------");
System.out.print("Date:          "+months[calendar.get(Calendar.MONTH)]+"          "          +
calendar.get(Calendar.DATE) + " "+calendar.get(Calendar.YEAR));
System.out.println("\t\t\t\t\t\tTime:                "+calendar.get(Calendar.HOUR)                +
":"+calendar.get(Calendar.MINUTE) + ":"+calendar.get(Calendar.SECOND));

doctor[] d=new doctor[25];
patient[] p=new patient[100];
lab[] l=new  lab[20];
fecility[] f=new fecility[20];
medical[] m=new medical[100];
staff[] s=new staff[100];
int i;
for(i=0;i<25;i++)
d[i]=new doctor();
for(i=0;i<100;i++)
p[i]=new patient();
for(i=0;i<20;i++)
l[i]=new lab();
for(i=0;i<20;i++)
f[i]=new fecility();
for(i=0;i<100;i++)
m[i]=new medical();
for(i=0;i<100;i++)
s[i]=new staff();

d[0].did="21";    d[0].dname="Dr.Ghanendra";    d[0].specilist="ENT";    d[0].appoint="10-4";
d[0].doc_qual="mbbs,Md"; d[0].droom=17;
d[1].did="32";    d[1].dname="Dr.Vikram";    d[1].specilist="medi.";    d[1].appoint="10-4";
d[1].doc_qual="mbbs,md"; d[1].droom=45;
d[2].did="17";    d[2].dname="Dr.Rekha";    d[2].specilist="Child    spl";    d[2].appoint="10-4";
d[2].doc_qual="bdm"; d[2].droom=8;
d[3].did="33";    d[3].dname="Dr.Pramod";    d[3].specilist="Artho";    d[3].appoint="10-4";
d[3].doc_qual="mbbs,ms"; d[3].droom=40;

p[0].pid="12";          p[0].pname="pankaj";          p[0].disease="cancer";          p[0].sex="male";
p[0].admit_status="y"; p[0].age=30;
p[1].pid="13"; p[1].pname="kuli"; p[1].disease="cold"; p[1].sex="male"; p[1].admit_status="y";
p[1].age=23;
p[2].pid="14";          p[2].pname="Gaurav";          p[2].disease="maleriya";          p[2].sex="male";
p[2].admit_status="y"; p[2].age=45;
p[3].pid="15"; p[3].pname="ravi"; p[3].disease="sugar"; p[3].sex="male"; p[3].admit_status="y";
p[3].age=25;

m[0].med_name="corex";          m[0].med_comp="cino          pvt";          m[0].exp_date="9-5-16";
m[0].med_cost=55; m[0].count=8;
m[1].med_name="nytra";          m[1].med_comp="ace          pvt";          m[1].exp_date="4-4-15";
m[1].med_cost=500; m[1].count=5;
m[2].med_name="brufa";              m[2].med_comp="reckitt";              m[2].exp_date="12-7-17";
m[2].med_cost=50; m[2].count=56;
m[3].med_name="pride";          m[3].med_comp="ddf          pvt";          m[3].exp_date="12-4-12";
```

```
m[3].med_cost=1100; m[3].count=100;

l[0].fecility="x-ray     "; l[0].lab_cost=800;
l[1].fecility="ct scan "; l[1].lab_cost=1200;
l[2].fecility="or scan "; l[2].lab_cost=500;
l[3].fecility="blood bank"; l[3].lab_cost=50;

f[0].fec_name="ambulane";
f[1].fec_name="admit fec";
f[2].fec_name="canteen";
f[3].fec_name="free camp";

s[0].sid="22"; s[0].sname="ravi"; s[0].desg="worker"; s[0].sex="male"; s[0].salary=5000;
s[1].sid="23"; s[1].sname="komal"; s[1].desg="nurse"; s[1].sex="female"; s[1].salary=2000;
s[2].sid="24"; s[2].sname="raju"; s[2].desg="worker"; s[2].sex="male"; s[2].salary=5000;
s[3].sid="25"; s[3].sname="rani"; s[3].desg="nurse"; s[3].sex="female"; s[3].salary=20000;

Scanner input=new Scanner(System.in);

int choice,j,c1,status=1,s1=1,s2=1,s3=1,s4=1,s5=1,s6=1;
while(status==1)
{
System.out.println("\n                              MAIN MENU");
System.out.println(" ------------------------------------------------------------------------------");
System.out.println("1.DOCTOR   2. PATIENT   3.MEDICAL   4.LAB   5. FACILITY   6.STAFF
7.EXIT");
System.out.println(" ------------------------------------------------------------------------------");

choice=input.nextInt();
switch(choice)
{
case 1:
   {
System.out.println(" ------------------------------------------------------------------------------");
   System.out.println("                    **DOCTOR SECTION**");
   System.out.println(" ------------------------------------------------------------------------------ ");
   s1=1;
   while(s1==1)
   {
    System.out.println("1.new entry\n2.doctor list");
    c1=input.nextInt();
    switch(c1)
    {
    case 1:
      {
      d[count1].new_doctor();count1++;
      break;
      }
    case 2:
      {
      System.out.println("------------------------------------------------------------------------------ ");
      System.out.println("id \t name\t specilist \t timing \t qualification \t room no");
```

```
     System.out.println("---------------------------------------------------------------------------------- ");
    for(j=0;j<count1;j++)
      {
      d[j].doctor_info();
      }
     break;
     }
    }

    System.out.println("RETURN BACK press (1/0) for more");
    s1=input.nextInt();
   }
   break;
 }
case 2:
{
System.out.println(" ----------------------------------------------------------------------------------");
System.out.println("                    **PATIENT SECTION**");
System.out.println(" ----------------------------------------------------------------------------------");
s2=1;
while(s2==1)
{
System.out.println("1.new entry\n2.patient list");
c1=input.nextInt();
switch(c1)
{
case 1:{p[count2].new_patient();count2++;break;}
case 2:
{
System.out.println(" ----------------------------------------------------------------------------------");
System.out.println("id \t name \t disease \t sex \t admit_status \t age");
System.out.println(" ----------------------------------------------------------------------------------");
for(j=0;j<count2;j++){p[j].patient_info();}break;}
}
System.out.println("RETURN BACK press (1/0) for more");
s2=input.nextInt();
}
break;
}
case 3:
{
s3=1;
System.out.println(" ----------------------------------------------------------------------------------");
System.out.println("                    **MEDICAL SECTION**");
System.out.println(" ----------------------------------------------------------------------------------");
while(s3==1)
{
System.out.println("1.new entry\n2.medicine list");
c1=input.nextInt();
switch(c1)
{
case 1:{m[count3].new_medi();count3++;break;}
```

```
case 2:
{
System.out.println(" ------------------------------------------------------------------------------");
System.out.println("name \t company \t expirity date \t cost");
System.out.println(" ------------------------------------------------------------------------------");
for(j=0;j<count3;j++){m[j].find_medi();}break;}
}
System.out.println("RETURN BACK press (1/0) for more");
s3=input.nextInt();
}
break;
}
case 4:
{
s4=1;
System.out.println(" ------------------------------------------------------------------------------");
System.out.println("                    **LABORATRY SECTION**");
System.out.println(" ------------------------------------------------------------------------------");
while(s4==1)
{
System.out.println("1.new entry \n2.lab list");
c1=input.nextInt();
switch(c1)
{
case 1:{l[count4].new_feci();count4++;break;}
case 2:
{
System.out.println(" ------------------------------------------------------------------------------");
System.out.println("fecility\t\tcost");
System.out.println(" ------------------------------------------------------------------------------");
for(j=0;j<count4;j++){l[j].feci_list();
}
break;
}
}
System.out.println("RETURN BACK press (1/0) for more");
s4=input.nextInt();
}
break;
}
case 5:
{
s5=1;
System.out.println(" ------------------------------------------------------------------------------");
System.out.println("          **HOSPILITY FACILITY SECTION**");
System.out.println(" ------------------------------------------------------------------------------");
while(s5==1)
{
System.out.println("1.new entry\n2.fecility list");
c1=input.nextInt();
switch(c1)
{
```

```
case 1:{f[count5].add_feci();count5++;break;}
case 2:{
System.out.println(" ------------------------------------------------------------------------------");
System.out.println("hospility facility are:-");
System.out.println(" ------------------------------------------------------------------------------");
for(j=0;j<count5;j++){f[j].show_feci();}break;}
}
System.out.println("RETURN BACK press (1/0) for more");
s5=input.nextInt();
}
break;
}
case 6:
{
s6=1;
System.out.println(" ------------------------------------------------------------------------------");
System.out.println("                    **STAFF SECTION**");
System.out.println(" ------------------------------------------------------------------------------");
  while(s6==1)
  {

String a="nurse",b="worker",c="security";
   System.out.println("1.new entry\n2.nurse list\n3.worker list \n4.securuty list");
   c1=input.nextInt();
   switch(c1)
   {
     case 1:{s[count6].new_staff();count6++;break;}
     case 2:
       {
System.out.println(" ------------------------------------------------------------------------------");

       System.out.println("id \t name \t sex \t salary");
System.out.println(" ------------------------------------------------------------------------------");
        for(j=0;j<count6;j++)
        {
        if(a.equals(s[j].desg))
          s[j].staff_info();
        }
      break;
      }
    case 3:
      {
System.out.println(" ------------------------------------------------------------------------------");
      System.out.println("id \t name \t sex \t salary");
System.out.println(" ------------------------------------------------------------------------------");
      for(j=0;j<count6;j++)
        {
        if(b.equals(s[j].desg))
          s[j].staff_info();
        }
      break;
      }
```

```
    case 4:
      {
System.out.println(" ---------------------------------------------------------------------------");
      System.out.println("id \t name \t sex \t salary");
System.out.println(" ---------------------------------------------------------------------------");
       for(j=0;j<count6;j++)
       {
       if(c.equals(s[j].desg))
       s[j].staff_info();
       }
      break;
      }
   }
  System.out.println("RETURN BACK press (1/0) for more");
  s6=input.nextInt();
  }
break;
}
case 7:
{
break;
}
default:
{
System.out.println("enter wrong choice!");
}
}
System.out.println("RETURN MAIN MENU press (1/0) for more");
status=input.nextInt();
}
}
}
```

Viva Questions:

1. Is constructor inherited?
2. What is this in java?
3. Why multiple inheritance is not supported in java?
4. Why Java does not support pointers?
5. What is object cloning?

Result:

Thus the Hospital Management System as a mini project using java concepts was done and executed successfully.