LAB PROGRAM 8

Write a program that demonstrates handling of exceptions in inheritance tree. Create a base class called “Father” and derived class called “Son” which extends the base class. In Father class, implement a constructor which takes the age and throws the exception WrongAge( ) when the input age<0. In Son class, implement a constructor that cases both father and son’s age and throws an exception if son’s age is >=father’s age.

```
import java.util.*;

class WrongAge extends Exception

{

 int x;

 WrongAge(int fage)

 {

  this.x=fage;

 }

 public String toString()

 {

  return("Wrong age!Father's age can't be negative");

 }

}


class SonAgeException extends Exception

{

int f,s;

SonAgeException(int fage,int sage)

{

 this.f=fage;

 this.s=sage;

}

public String toString()

 {

  if(f==s)

  return("Wrong age!Father's age can't be equal to son's age");

  if(s<0)
```

```
   return("Wrong age!Son's age can't be less than 0");
   else
   return("Wrong age!Son's age can't be greater than father's age");
  }
}

class Father
{
int fage;
Scanner sc=new Scanner(System.in);
 Father()
 {
  System.out.println("Enter the father's age");
  fage=sc.nextInt();
 }
 void exc1() throws WrongAge
 {
  if(fage<0)
   throw new WrongAge(fage);
 }
}

class Son extends Father
{
 int sage;
 Scanner sc=new Scanner(System.in);
 Son()
 {
  super();
  System.out.println("Enter the son's age");
  sage=sc.nextInt();
```

```
 }
 void exc2()throws SonAgeException
 {
  if(sage<0 || sage>=fage)
  throw new SonAgeException(fage,sage);
 }
}

class lab8
{
 public static void main(String args[])
 {
  Son s=new Son();
  try{
      s.exc1();
  }
  catch(WrongAge e)
  {
   System.out.println(e);
  }
  try{
     s.exc2();
  }
  catch(SonAgeException e)
  {
    System.out.println(e);
  }

 }
}
```

OUTPUT


Command Prompt
C:\Users\Anagha\Documents>cd JavaPrograms
C:\Users\Anagha\Documents\JavaPrograms>javac lab8.java
C:\Users\Anagha\Documents\JavaPrograms>java lab8
Enter the father's age
60
Enter the son's age
20
C:\Users\Anagha\Documents\JavaPrograms>java lab8
Enter the father's age
60
Enter the son's age
80
Wrong age!Son's age can't be greater than father's age
C:\Users\Anagha\Documents\JavaPrograms>java lab8
Enter the father's age
-40
Enter the son's age
7
Wrong age!Father's age can't be negative
Wrong age!Son's age can't be greater than father's age
C:\Users\Anagha\Documents\JavaPrograms>java lab8
Enter the father's age
50
Enter the son's age
50
Wrong age!Father's age can't be equal to son's age
C:\Users\Anagha\Documents\JavaPrograms>java lab8
Enter the father's age
40
Enter the son's age
-6
Wrong age!Son's age can't be less than 0
C:\Users\Anagha\Documents\JavaPrograms>