30/12/22

paperism
Date:

lab program 6

Write a program that demostrates 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.Scanner;
class WrongAge extend Exception
{
    String msg= new String();
    WrongAge()
   { msg = "Age error";}
    WrongAge(String s)
    { msg=s;}
    public String toString()
    { return msg;}
  }
class Father
{
  int fage;
  Father() throws WrongAge
  {
     System.out.println("Enter Father's
        age:");
     Scanner ss = new Scanner(System.in);
     if (fage<0)
  {
    throw new Wrongage("Invalid.
    Father's age cannot be lesser than 0");
```

```
}
Father (int a) throws Wrongage.
{
        fage = a;
        if (fage < 0)
    {
     throw new Wrongage (" Input is invalid,
      Father's age cannot be lesser than 0");
    }
}
Father ( int a) throws WrongAge
  {
        fage = a;
        if ( fage < 0)
    {
      throw new WrongAge(" Invalid . Father's
   age cannot be lesser than 0");
    }
}
public String toString()
  {
     return " Father's age:" + fage;
  }
}
Class Son extends Father
{
   int sage;
    Son () throws Wrongage.
    {
     Scanner SS = new Scanner( System.in);
     System. out. println (" Enter Son's age:");
     int  sage = SS. next Int ();
if (sage <= 0) { throw new Wrongage(" Invalid input. Son's age cant be lesser than 0
        if ( sage > = fage)
```

```
{
  ss.close();
  throw new Wrongdge("Sons age cannot
  be greater than equals to father's
  age");
}
ss.close();
}
public string toString()
{
  return "Father's age:" + fage + "\n Son's
  age:" + sage;
}

class Main
{
  public static void main(String args[])
  {
    try
    {
      Father f = new Father();
      Son s = new Son();
      System.out.println(f);
      System.out.println(s);
    }
  catch (Wrongdge wa)
  { System.out.println(wa); }
  catch(Exception ee)
  { System.out.println("Exception
    encountered. Try again!"); }
  }
}
```

Output:

Enter Father's age:
28
Enter son's age:
2
Enter father's age
2
Son's age cannot be greates than equals to father's age.

Enter fathers age:
23
Enter son age:
30
Son's age cannot be greater than fathers

Enter Fathers age:
-12
Invalid input. Father's age cannot be lesses than 0

Enter Father's age
34
Enter Father's age
34
Enter son's age:
45
Son age can not be greater than father's age.

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Enter Father's age:
32
Enter Father's age:
32
Enter Son's age:
-12.
Invalid input. Son's age cannot be lesses than 0.

Command Prompt

```
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs\father son program>java Main
Enter Father's age:
23
Enter Father's age:
23
Enter Son's age:
23
Sons age can not be greater than father's age

C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs\father son program>java Main
Enter Father's age:
-12
Invalid input. Father's age can not be lesser than 0

C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs\father son program>java Main
Enter Father's age:
23
Enter Father's age:
30
Enter Son's age:
3
Father's age: 23
Father's age: 30
```

```
C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs\father son program>java Main
Enter Father's age:
34
Enter Father's age:
34
Enter Son's age:
45
Sons age can not be greater than father's age

C:\Users\Aisha Taffazul\Desktop\notes\3rd sem\java programs\father son program>
```