

Lab Program 6:

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 takes both father and son's age and throws an exception if son's age is >= father's age.

Code Snippet:

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Q.1) 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 takes both father and son's age and throws an exception if son's age is >= father's age.

```
import java.util.Scanner;
class WrongAge extends Exception
{
    WrongAge() { }
    String msg = new String();
    WrongAge(String s)
    { msg = s; }
    public String toString()
    { return msg; }
}
class Son extends WrongAge
{
    String msg1 = new String();
    Son(String ss)
    { msg1 = ss; }
    public String toString()
    { return msg1; }
}
```

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```

class Father
{
    int age;
    Scanner in = new Scanner(System.in);
    Father()
    {
        System.out.println("Enter the father's age:");
        age = in.nextInt();
    }
    void error() throws WrongAge
    {
        if (age <= 0)
            throw new WrongAge("Invalid input: Father's Age cannot be less than 0");
    }
}

class Son extends Father
{
    int age;
    Son()
    {
        System.out.println("Enter the Age of Son:");
        age = in.nextInt();
    }
    void error() throws ErrorAge
    {
        if (age <= 0 || age > super.age)
        {
            throw new ErrorAge("Age of father less than son");
        }
        else {
            System.out.println("FATHER'S AGE: " + super.age + " In SON'S AGE: " + age);
        }
    }
}

```

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```

class A-main
{
    public static void main(String[] args)
    {
        Son s = new Son();
        try
        {
            s.ex1();
        }
        catch (WrongAge e)
        {
            System.out.println(e);
        }
        try
        {
            s.ex2();
        }
        catch (WrongAge e)
        {
            System.out.println(e);
        }
    }
}

```

Output:

```

C:\Users\Anagha\Desktop\00J\Lab6>javac A_main.java
C:\Users\Anagha\Desktop\00J\Lab6>java A_main
Enter the father's age:
50
Enter the age of son:
17
FATHER'S AGE:50
SON'S AGE:17

C:\Users\Anagha\Desktop\00J\Lab6>java A_main
Enter the father's age:
23
Enter the age of son:
45
age of father less than son

C:\Users\Anagha\Desktop\00J\Lab6>java A_main
Enter the father's age:
-1
Enter the age of son:
3
Invalid input. Father's age can not be lesser than 0
age of father less than son

```