

Lab Program 6

Write a program that demonstrates handling of exceptions in inheritance. 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 is < 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
```

```
{
    String msg = new String();
    WrongAge(String s)
    {
        msg = s;
    }
    public String toString()
    {
        return msg;
    }
}
```

```
class ErrorAge extends WrongAge
```

```
{
    String msg1 = new String();
    ErrorAge(String s)
    {
        msg1 = s;
    }
    public String toString()
    {
        return msg1;
    }
}
```


class Father

↑

int age;

Scanner ss = new Scanner(System.in);

Father()

↑

System.out.println("Enter
the father's age: ");

age = ss.nextInt();

}
void ex1() throws WrongAge

{

if (age <= 0)

throw new WrongAge

("Invalid input, Father's
age cannot be lesser than 0");

}

}
class Son extends Father {

int age;

son()

{

System.out.println("Enter the
age of son: ");

age = in.nextInt();

}

void ex2() 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);
```

```
}
```

```
}
```

```
}
```

```
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 (ErrorAge e)
```

```
        { System.out.println(e); }
```

```
    }
```

Output

Enter the father's age

30

Enter the age of son:

10

Father's Age: 30

Son's Age: 10

Enter the father's age:
5

Enter the son's age:
10

age of father less than son

Enter the father's age:

0

Enter the age of son:
5

Invalid input. Father's age cannot
be lesser than 0.
age of father less than son.

$$\frac{50-12}{50-12} = 102$$

```
C:\Users\nbrij>cd C:\Engg\3rd sem\JAVA lab\p4
```

```
C:\Engg\3rd sem\JAVA lab\p4>javac p4.java
```

```
C:\Engg\3rd sem\JAVA lab\p4>java A_main
```

```
Enter the father's age:
```

```
0
```

```
Enter the age of son:
```

```
12
```

```
Invalid input. Father's age can not be lesser than 0  
age of father less than son
```

```
C:\Engg\3rd sem\JAVA lab\p4>java A_main
```

```
Enter the father's age:
```

```
23
```

```
Enter the age of son:
```

```
2
```

```
FATHER'S AGE:23
```

```
SON'S AGE:2
```

```
C:\Engg\3rd sem\JAVA lab\p4>java A_main
```

```
Enter the father's age:
```

```
22
```

```
Enter the age of son:
```

```
25
```

```
age of father less than son
```

```
C:\Engg\3rd sem\JAVA lab\p4>_
```