

Q. Write a program that demonstrates handling of exceptions in inheritance tree. Create a base class called "Father" and a 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.

30/12/22

Date : _____
Page No : _____

- 1) Write a program that demonstrates 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 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 \geq father's age.

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

```
class WrongAgeDiff extends Exception {
    String error = new String();
    WrongAgeDiff(String t) {
        error = t;
    }
    public String toString() {
        return error;
    }
}
```

```

class Father {
    int age-father;
    Father() throws WrongAgeExc {
        int x;
        Scanner ss = new Scanner(System.in);
        System.out.println("Enter father's age");
        age-father = ss.nextInt();
        if (age-father < 0)
            throw new WrongAgeExc("Age is less than zero");
    }
}

```

```

class Son extends Father {
    int age-son;
    Son() throws WrongAgeExc {
        super();
        Scanner ss = new Scanner(System.in);
        age-son = ss.nextInt();
    }

    void check-son-age() throws WrongAgeExc {
        if (age-son < 0)
            throw new WrongAgeExc("Age is less than zero");
    }

    void comp-age() throws WrongAgeDiff {
        if (age-father < age-son)
        {
            throw new WrongAgeDiff("Father's age < Son's age");
        }
    }
}

```




Date: _____

Page No: _____

```
class ExceptionDemo1 {  
    public static void main(String args[])  
    {  
        try {  
            Son s = new Son();  
            s.checkSonAge();  
            s.compAge();  
        }  
        catch (WrongAgeExc wa)  
        {  
            System.out.println(wa);  
        }  
        catch (WrongAgeDiff wad)  
        {  
            System.out.println(wad);  
        }  
    }  
}
```

Output :

(1) Enter Father's age
-1
Age less than zero

(2) Enter Father's age
50
Enter Son's age
-5
Age less than zero

(3) Enter Father's age
30
Enter Son's age
50
Father's age \leq Son's age

~~30 < 50~~
30 < 50

Output:

```
Command Prompt
C:\> 2013 Microsoft Corporation. All rights reserved.
C:\Users\Student>cd C:\Users\Student\Desktop\1BM21CS045\00J\exc
C:\Users\Student\Desktop\1BM21CS045\00J\exc>javac ExceptionDemo1.java
C:\Users\Student\Desktop\1BM21CS045\00J\exc>java ExceptionDemo1
Enter fathers age
-2
Age is less than zero
C:\Users\Student\Desktop\1BM21CS045\00J\exc>java ExceptionDemo1
Enter fathers age
50
Enter son's age
-1
Age is less than zero
C:\Users\Student\Desktop\1BM21CS045\00J\exc>java ExceptionDemo1
Enter fathers age
30
Enter son's age
50
Father's age<= Son's age
C:\Users\Student\Desktop\1BM21CS045\00J\exc>
```