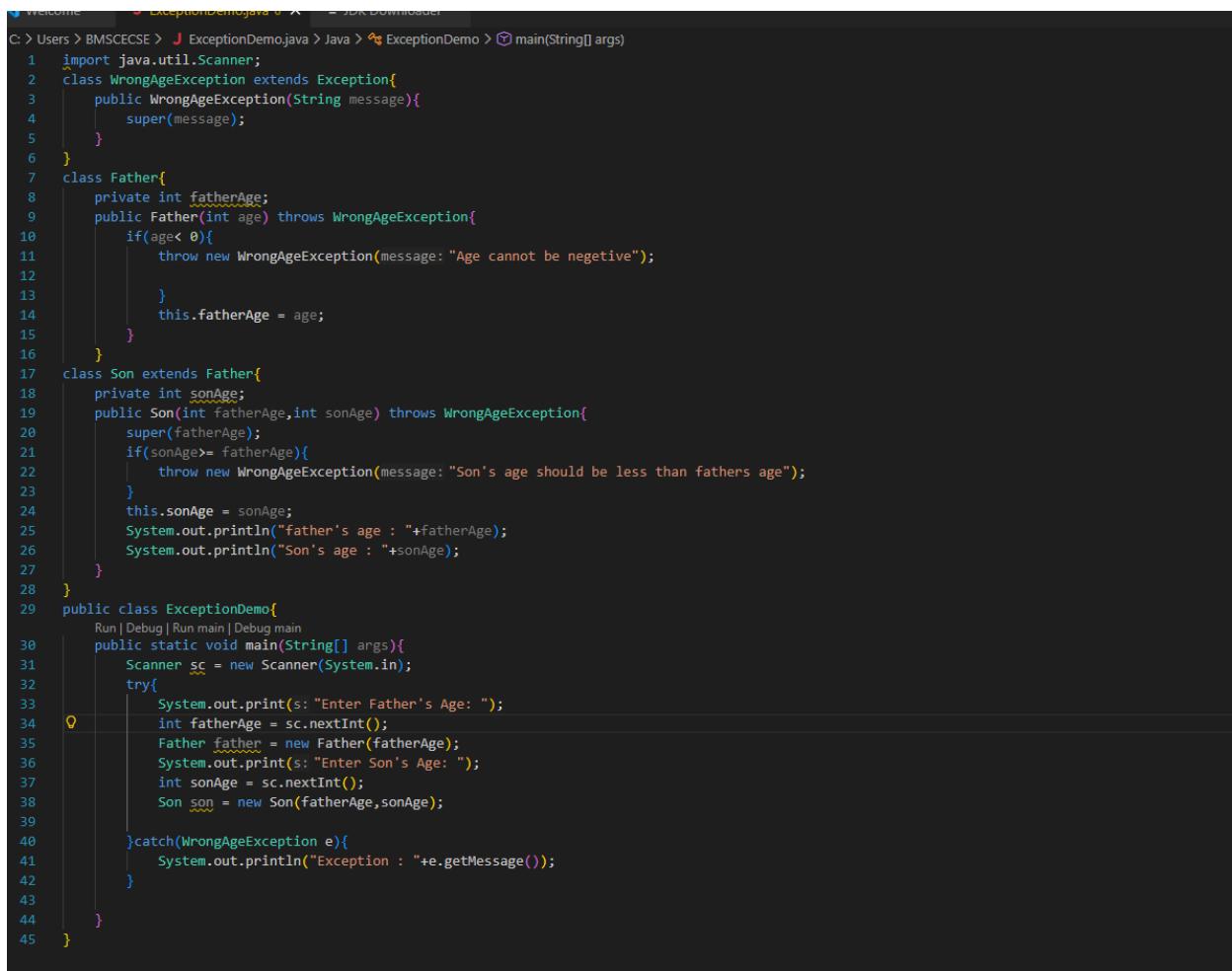


LAB - 10

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.

PROGRAM:



The screenshot shows an IDE interface with a code editor containing Java code. The code defines a base class `Father` and a derived class `Son`. The `Father` class has a constructor that throws a `WrongAgeException` if the input age is less than 0. The `Son` class has a constructor that checks if the son's age is greater than or equal to the father's age, and if so, it throws a `WrongAgeException`. The `ExceptionDemo` class contains a `main` method that prompts the user for father's age, creates a `Father` object, prompts for son's age, creates a `Son` object, and then catches any `WrongAgeException` to print its message.

```
1 import java.util.Scanner;
2 class WrongAgeException extends Exception{
3     public WrongAgeException(String message){
4         super(message);
5     }
6 }
7 class Father{
8     private int fatherAge;
9     public Father(int age) throws WrongAgeException{
10        if(age< 0){
11            throw new WrongAgeException(message: "Age cannot be negative");
12        }
13        this.fatherAge = age;
14    }
15 }
16 class Son extends Father{
17     private int sonAge;
18     public Son(int fatherAge,int sonAge) throws WrongAgeException{
19         super(fatherAge);
20         if(sonAge>= fatherAge){
21             throw new WrongAgeException(message: "Son's age should be less than fathers age");
22         }
23         this.sonAge = sonAge;
24         System.out.println("father's age : "+fatherAge);
25         System.out.println("Son's age : "+sonAge);
26     }
27 }
28 }
29 public class ExceptionDemo{
30     Run | Debug | Run main | Debug main
31     public static void main(String[] args){
32         Scanner sc = new Scanner(System.in);
33         try{
34             System.out.print(s: "Enter Father's Age: ");
35             int fatherAge = sc.nextInt();
36             Father father = new Father(fatherAge);
37             System.out.print(s: "Enter Son's Age: ");
38             int sonAge = sc.nextInt();
39             Son son = new Son(fatherAge,sonAge);
40         }catch(WrongAgeException e){
41             System.out.println("Exception : "+e.getMessage());
42         }
43     }
44 }
45 }
```

OUTPUT:

```
>
javac ExceptionDemo.java } ; if ($?) { java ExceptionDemo }
Enter Father's Age: 25
Enter Son's Age: 25
Exception : Son's age should be less than father's age
PS C:\Users\student\Desktop\javalab 1BM24CS313> cd "c:\Users\student\Desktop\javalab 1BM
Enter Father's Age: 25
Enter Son's Age: 14
father's age : 25
Son's age : 14
PS C:\Users\student\Desktop\javalab 1BM24CS313> █
```