Lab program -6

Q) A program that demonstrates handling of exceptions in inheritance tree. Create a base class called "Father" and derived class "son" which extends the base class. In Father class implement a constructor which takes the age and throw the exception. wrong Age() when the input is age<0. In son class, implement a constructor that cases both father and son's age and throwns an exception if son age is >= father's age.

A)
```
import java.util.*;
class FatherAgeException Extends Exception
        { public string tostring(){
                return ("Father age less than0")
        }
    }
class sonAgeException extends Exception{
            int a;
            son AgeException (int age){
                a = age;
            }
            public string tostring(){
                if (a<0)
                    return ("son's age is less
                                    than0");
                else
                    return (" Son's age is
                            more than father's
                                    age");
            }
        }
```

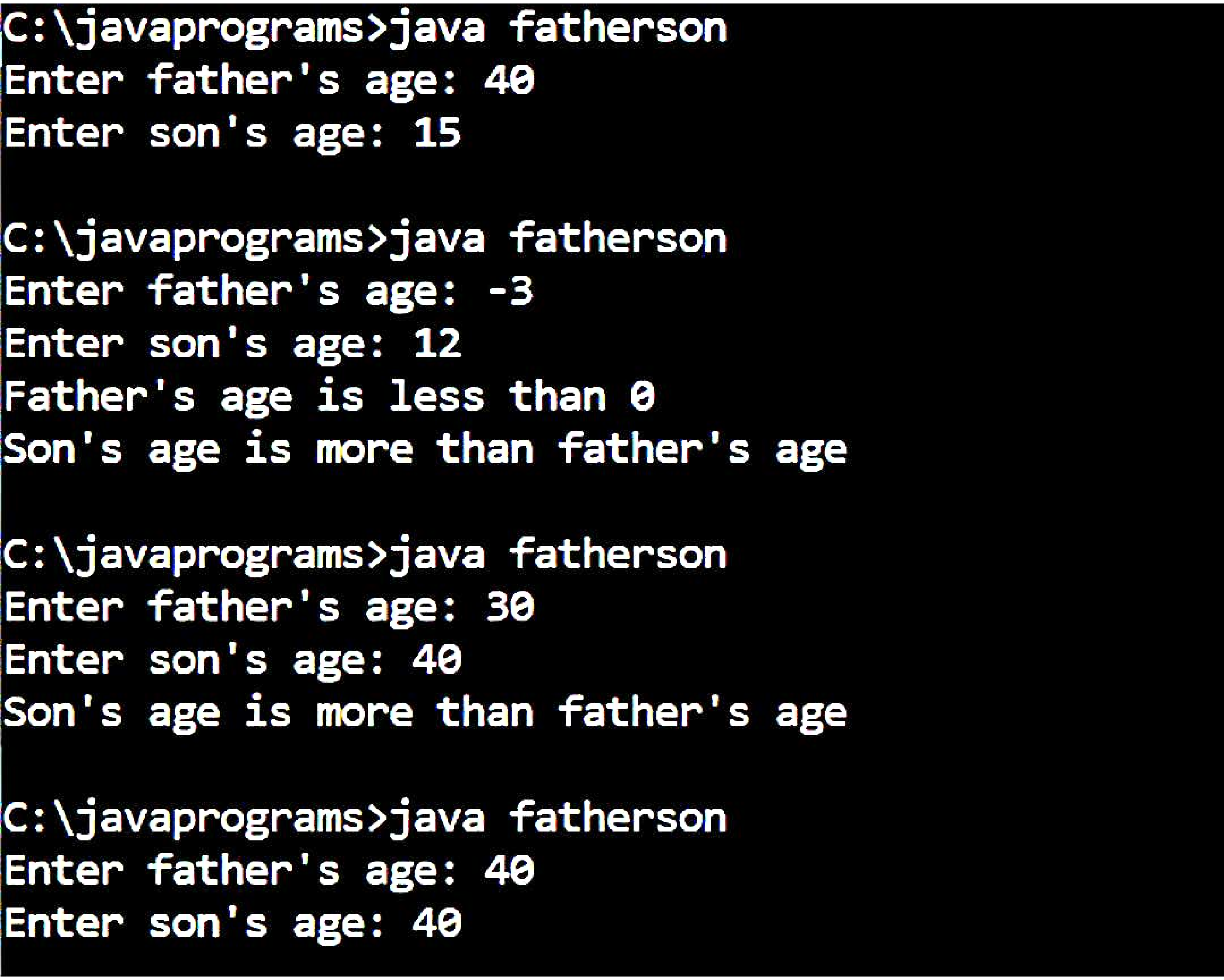
```
class Father{
        Public int age1;
        Scanner s = new Scanner (System.in)
        father() {
                System.out.printh(" Enter Father's
                                              age : ");
                age1 = s.nextInt();
        }
        void ex1() throws FatherAge Exception{
                if (age1<0)
                        throw new fatherAge Exception
                                                  ();
        }
}

Class son extends father{
        public int age2;
        son() {   system.out.print(" Enter Son's age:
                                                 ");
                age 2 = s. next In();
        void ex2() throws Son Age Exception{
                if ( age2<0 || age 2 >super.age1)
                        throw new sonAge Exception(age 2);
        }
}

Class Father Son{
        Public static void main (string args[])
        {   father f = new father();
            son s = new son();
            try {
                    s. ex1();
                    f. ex1();
            }
            catch ( Father AageExceptione)
                    { system.out.println(e); }
        try {   s. ex2();}
        catch ( sonAge exception e) {
                    system.out.print(e);
        }
}   }
```

Output

```
Enter father's age: -2
Enter son's age: 5
Father age is less than 0
Son's age is more than father age

Enter father's age: 40
Enter son's age: 50
Son's age is more than father's age

Enter father's age : 40
Enter son's age : 15
```

Output

```
Enter father's age: -2
Enter son's age: 5
  Father age is less than 0
  Son's age is more than father age

  Enter father's age: 40
  Enter son's age: 50
  Son's age is more than father's age

  Enter father's age : 40
  Enter son's age : 15
```



```
C:\javaprograms>java fatherson
Enter father's age: 40
Enter son's age: 15

C:\javaprograms>java fatherson
Enter father's age: -3
Enter son's age: 12
Father's age is less than 0
Son's age is more than father's age

C:\javaprograms>java fatherson
Enter father's age: 30
Enter son's age: 40
Son's age is more than father's age

C:\javaprograms>java fatherson
Enter father's age: 40
Enter son's age: 40
```