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Lab program VII

Write a java program that demonstrates handling of exceptions in inheritance tree. Create a base class called "Father" and derived class called "Son" which extends base class. In father's class, implement constructor which takes age & throws exception WrongAge() when input age <0. In Son's class, implement constructor that uses both father's & son's age and throws exception if son's age is >= father's age

```
import java.util.Scanner;
class WrongAge extends Exception {
        String message;
        WrongAge (String message) {
              this.message = message;
        }
        public String toString() {
             return "Error: "+ message; }
}
class Father {
      int Fage;
      Father (int x) throws WrongAge {
            if (x<0) {
                  throw new WrongAge("Father's age cannot
                               be negative");
            }
            Fage = x;
      }
}
```

```
class Son extends Father {
    int sage;
    son (int x, int y) throws WrongAge {
        super(x);
        if (y<0) {
            throw new WrongAge (" Son's age cannot be
                        negative");
        }
        if (y>=x) {
            throw new WrongAge (" Son's age cannot be
                    greater than Father's age");
        }
        sage = y;
    }
}

class Except {
    public static void main (String args[]) {
        Scanner sc = new scanner (system.in);
        try {
            int x,y;
            System.out.println ("Enter Father's age");
            x = sc.nextInt();
            System.out.println (" Enter son's age");
            y = sc.nextInt();
            Son son = new Son(x,y);
            System.out.println ("Father's age: " + son.fage );
            System.out.println (" Son's age: "+ son.sage);
        }
        catch (WrongAge wa) {
            System.out.println(wa);
        }
    }
}
```

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Output I

```
Enter father's age
40
Enter son's age
5
Father's age : 40
Son's age : 5
```

Output II

```
Enter father's age
-2
Enter son's age
12
Error: Father's age cannot
   be negative
```

Output III

```
Enter father's age
25
Enter son's age
-8
Son's age cannot be
   negative
```

Output IV

```
Enter father's age
5
Enter son's age
12
Error: Son's age cannot be
   greater than Father's age
```

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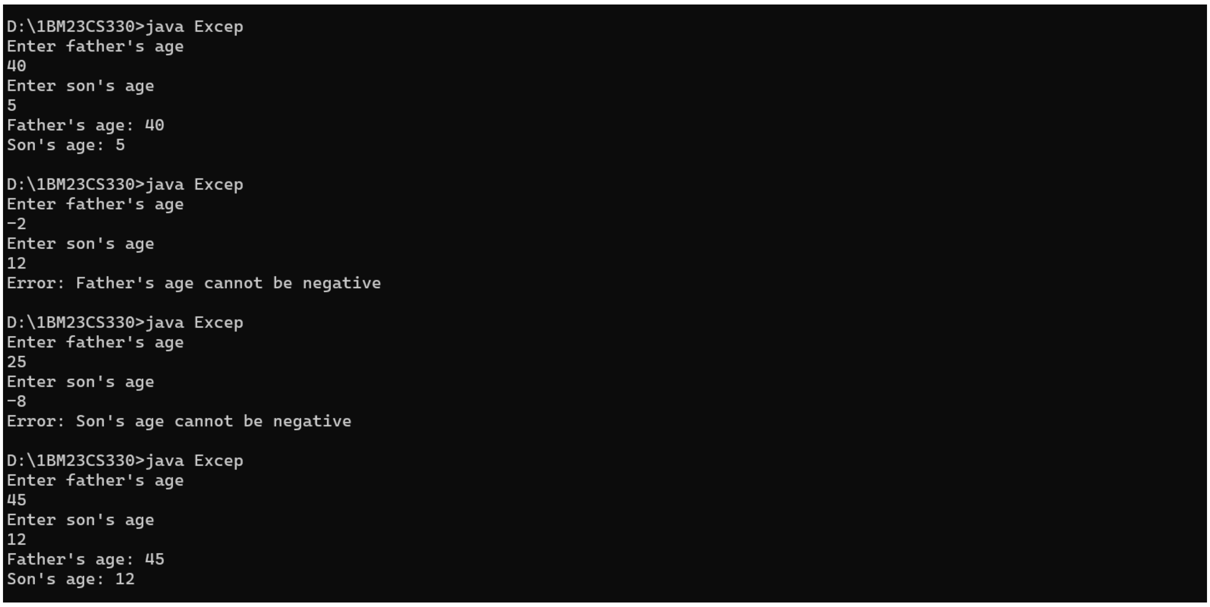
);

```
import java.util.Scanner;
class WrongAge extends Exception {
    String message;
    WrongAge (String message) {
        this.message = message;
    }
    public String toString() {
        return "Error: " + message;
    }
}

class Father {
    int fage;
    Father(int x) throws WrongAge {
        if(x<0) {
            throw new WrongAge("Father's age cannot be negative");
        }
        fage = x;
    }
}

class Son extends Father {
    int sage;
    Son(int x,int y) throws WrongAge {
        super(x);
        if(y<0) {
            throw new WrongAge("Son's age cannot be negative");
        }
        if(y>=x) {
            throw new WrongAge("Son's age cannot be greater than Father's age");
        }
        sage = y;
    }
}

class Excep {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        try {
            int x,y;
            System.out.println("Enter father's age");
            x=sc.nextInt();
            System.out.println("Enter son's age");
            y=sc.nextInt();
            Son son = new Son(x,y);
            System.out.println("Father's age: "+son.fage);
            System.out.println("Son's age: "+son.sage);
        }
        catch (WrongAge wa) {
            System.out.println(wa);
        }
    }
}
```



```
D:\1BM23CS330>java Excep
Enter father's age
40
Enter son's age
5
Father's age: 40
Son's age: 5

D:\1BM23CS330>java Excep
Enter father's age
-2
Enter son's age
12
Error: Father's age cannot be negative

D:\1BM23CS330>java Excep
Enter father's age
25
Enter son's age
-8
Error: Son's age cannot be negative

D:\1BM23CS330>java Excep
Enter father's age
45
Enter son's age
12
Father's age: 45
Son's age: 12
```