

LAB - 7

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 takes both father and son's age and throws an exception if son's age \geq father's age.

```
import java.util.Scanner;
```

```
class WrongAge extends Exception {
    WrongAge(String message) {
        super(message);
    }
}
```

```
class InputScanner {
    Scanner sc = new Scanner(System.in)
}
```

```
class Father extends InputScanner {
    Father() throws WrongAge {
        System.out.println("Enter Father's age ");
        fatherAge = sc.nextInt();
        if (fatherAge < 0) {
            throw new WrongAge("Age cannot be negative");
        }
    }
}
```

```
void display() {
    System.out.println("Father's age is " + fatherAge);
}
}
```

```
class Son extends Father {  
    int sonAge;  
    Son() throws WrongAge {  
        System.out.println("Enter son's age");  
        sonAge = sc.nextInt();  
        if (sonAge > fatherAge) {  
            throw new WrongAge("son's age cannot be greater  
                than father's age");  
        }  
        else if (sonAge < 0) {  
            throw new WrongAge("Age cannot be negative");  
        }  
    }  
}  
  
void display() {  
    System.out.println("Son's age is " + sonAge);  
}
```

```
public class ExceptionHandling {  
    public static void main (String[] args) {  
        try {  
            Son son = new Son();  
            son.display();  
        }  
        catch (WrongAge e) {  
            System.out.println("Exception" + e.getMessage());  
        }  
    }  
}
```

Output:

Enter father's age

50

Enter son's age

21

Father's age is 50

Son's age is 21

Enter father's age

11

Enter son's age

20

Error: Father's age must be greater than son

Enter father's age:

-1

Error: Age cannot be negative

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Windows PowerShell

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PS C:\Users\User\Desktop\java> javac LabQ7.java

PS C:\Users\User\Desktop\java> java LabQ7

Enter the Father's age:

48

Enter the Son's age:

19

Father's age:48

Son's age:19

PS C:\Users\User\Desktop\java> javac LabQ7.java

PS C:\Users\User\Desktop\java> java LabQ7

Enter the Father's age:

12

Enter the Son's age:

25

Son's age cannot be greater than Father's age

Wrong Age entered

PS C:\Users\User\Desktop\java> java LabQ7

Enter the Father's age:

-20

Enter the Son's age:

23

Father's age cannot be negative

Wrong Age entered

PS C:\Users\User\Desktop\java> |