

Lab

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 is  $\geq$  father's age.

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

```
import java.util.Scanner;  
class InputScanner {  
    Scanner sc;  
    InputScanner() {  
        sc = new Scanner(System.in);  
    }  
}
```

```
class Father extends InputScanner {  
    int fatherAge;
```



```
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:"  
        + 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() {  
    super.display();  
    System.out.println("Son's age: " + sonAge);  
}
```

```
public static void main(String args[]) {  
    try {  
        Father son = new Son();  
        son.display();  
    }  
    catch (WrongAge e) {  
        System.out.println(e);  
    }  
}
```

Output:

Enter father's age:

-12

WrongAge: Age cannot be negative

Enter father's age:

25

Enter Son's age:

45

WrongAge: Son's age cannot be greater than father's age

Enter father's age :

45

Enter Son's age :

22

Father's age : 45

Son's age : 22

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