Lab Program 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 cases both father and son's age and throws an exception if son's age is >= father's age.

```java
import java.util.Scanner;

class WrongAge extends Exception {
    public WrongAge() {
        super("Age Error");
    }
    public WrongAge (String message) {
        super(message);
    }
}
class InputScanner {
    Scanner scanner;
    public InputScanner () {
        scanner = new Scanner(System.in);
    }
    public int nextInt() {
        return scanner.nextInt();
    }
}
```

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

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

class Son extends Father {
    int sonAge;
    public Son() throws WrongAge {
        super();
        System.out.print("Enter son's age:");
        sonAge = 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");
        }
    }

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

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

Output:

Enter father's age : -48
Exception : Age cannot be negative

Enter father's age : 49
Enter son's age : 60
Exception : Son's age cannot be greater
than father's age.

Enter father's age : 56
Enter son's age : -24
Exception : Age cannot be negative

Enter father's age : 45
Enter son's age : 18
Father's age : 45
son's age : 18

30.01.24