JAVA LAB PROGRAM-7

Write a program that demonstrates handling of exceptions in inheritance tree. Create a base class called "Father" and a derived class called "Son" which extends the the base class. In Father's class implement a constructor which takes the age and throws the exception wrongAge() when the input age is less than zero. In Son's class implement a constructor that uses father and son's age and throws an exception if son's age is greater than or equal to father's age.

Code:

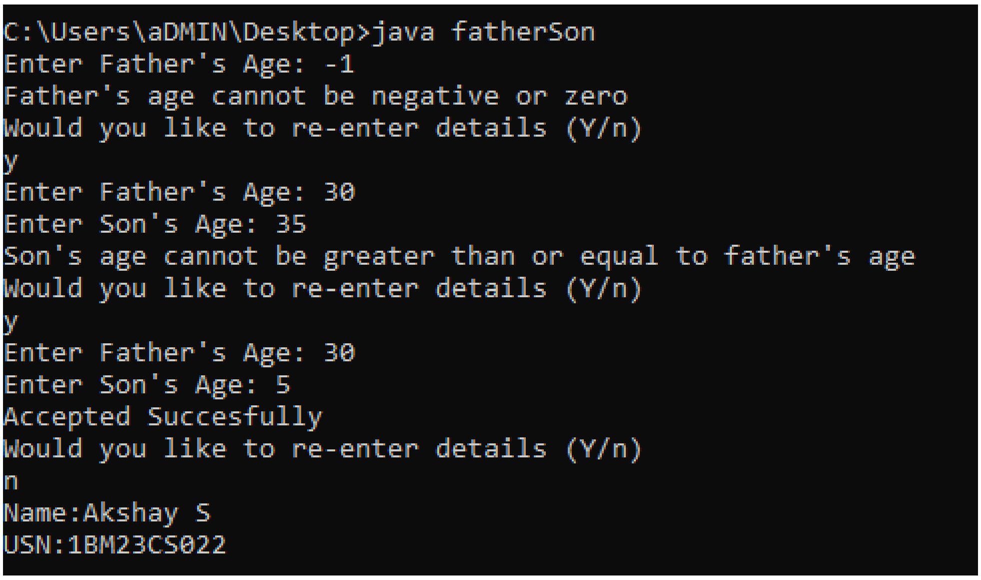
```
import java.util.Scanner;
class WrongAgeException extends Exception {
    public WrongAgeException(String message) {
        super(message);
    }
}

class SonAgeException extends Exception {
    public SonAgeException(String message) {
        super(message);
    }
}

class Father {
    private int age;
    public Father(int age) throws WrongAgeException {
        if (age <= 0) {
            throw new WrongAgeException("Father's age cannot be negative or zero");
        }
        this.age = age;
    }
    public int getAge() {
        return age;
    }
}

class Son extends Father {
    private int sonAge;
    public Son(int fatherAge, int sonAge) throws WrongAgeException, SonAgeException {
        super(fatherAge);
        if (sonAge >= fatherAge) {
            throw new SonAgeException("Son's age cannot be greater than or equal to father's age");
        }
        this.sonAge = sonAge;
    }
    public int getSonAge() {
        return sonAge;
    }
}
public class fatherSon{
    public static void main(String[] args) {
        while(true){
            Scanner sc = new Scanner(System.in);
            try{
            System.out.print("Enter Father's Age: ");
            int fatherAge = sc.nextInt();
                Father father=new Father(fatherAge);
            System.out.print("Enter Son's Age: ");
            int sonAge = sc.nextInt();
            Son son = new Son(fatherAge, sonAge);
            System.out.println("Accepted Succesfully");
            }
            catch (WrongAgeException e) {
                System.out.println(e.getMessage());
            }
            catch (SonAgeException e) {
                System.out.println(e.getMessage());
            }
            System.out.println("Would you like to re-enter details (Y/n):");
            String input = sc.next();
            if (input.equalsIgnoreCase("n")) {
                break;
            }
        }
            System.out.println("Name:Akshay S");
            System.out.println("USN:1BM23CS022");
    }
}
```

Output:



```
C:\Users\aDMIN\Desktop>java fatherSon
Enter Father's Age: -1
Father's age cannot be negative or zero
Would you like to re-enter details (Y/n)
y
Enter Father's Age: 30
Enter Son's Age: 35
Son's age cannot be greater than or equal to father's age
Would you like to re-enter details (Y/n)
y
Enter Father's Age: 30
Enter Son's Age: 5
Accepted Succesfully
Would you like to re-enter details (Y/n)
n
Name:Akshay S
USN:1BM23CS022
```