DATE: 19-02- PAGE:

1. 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 throws an exception if son's age >= father's age.

```
import java.util.Scanner;
class WrongAge extends Exception{
        WrongAge(String msg){
            super(msg)
    }
}
class Father{
        int age;
    Father(int age) throws WrongAge{
        if(age<0){
            throw new WrongAge("Age cannot be Negativ
        }
        this.age=age;
}
}
Class Son extends Father{
        int sonAge;
    Son(int fatherAge, int sonAge) throws WrongAge{
        Super(fatherAge);
        if(sonAge >= fatherAge){
            throw new WrongAge("Son's age Should be
    less than Father's age");
    }
```

```
        this.sonAge = sonAge;
    }
}
public class Main {
    public static void main(String args[]) {
        Scanner scanner = new Scanner(System.in);
    try {
        System.out.println("Enter Father's age: ");
        int fatherAge = scanner.nextInt();
        System.out.println("Enter son's age: ");
        int sonAge = scanner.nextInt();
        Son son = new Son(fatherAge, sonAge);
        System.out.println("Father's Age: " + fatherAge);
        System.out.println("Son's age: " + sonAge);
    }
    catch(WrongAge e) {
        System.out.println("Error: " + e.getMessage());
    catch(Exception e) {
        System.out.println("Error: ": Invalid Input");
    } finally {
        scanner.close();
    }
}
}
```

O/P:

```
Enter father's age: 67
Enter son's age: 68
Error: son's age should be less than Father's age

Enter father's age: 50
Enter son's age: 20

Father's age: 50
Son's age: 20
```

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

class InputScanner {
Scanner s = new Scanner(System.in);
}

class Father extends InputScanner {
int fatherAge;

public Father() throws WrongAge {
System.out.println("Enter Father's age:");
fatherAge = s.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.println("Enter Son's age:");
sonAge = s.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);
}
}

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