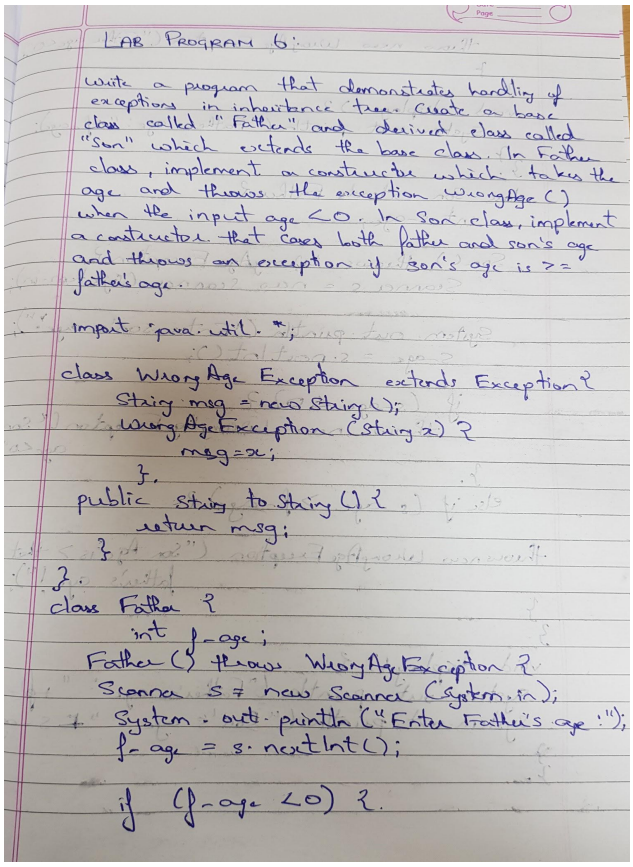
Lab Program 6:

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.

Code:



```
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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.

import java.util.*;
class WrongAge Exception extends Exception{
    String msg = new String();
    WrongAgeException (String x) {
        msg=x;
    }.
public String toString(){
    return msg;
}
}.
class Father {
    int f_age;
Father() throws WrongAgeException {
Scanner s = new Scanner (System.in);
System.out.println("Enter Father's age:");
f_age = s.nextInt();

if (f_age <0) {
```
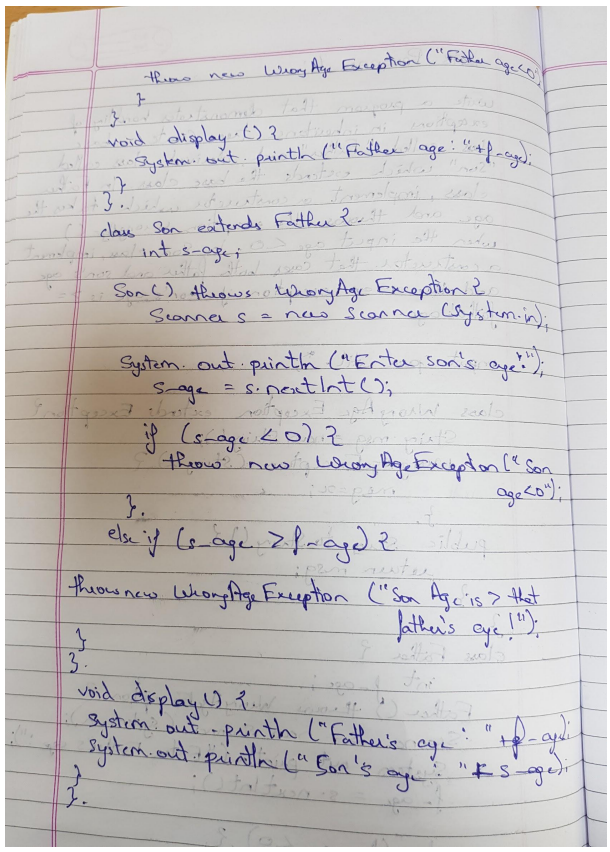



```
throw new WrongAgeException ("Father age<0");
}.
void display(){
System.out.println("Father age:"+f_age);
}.
}.
class Son extends Father{
int s_age;
Son() throws WrongAgeException{
Scanner s = new Scanner (System.in);

System.out.println("Enter son's age:");
s_age = s.nextInt();
if (s_age <0) {
throw new WrongAgeException("Son
                            age<0");
}.
else if (s_age >f_age){

throw new WrongAgeException ("Son Age is > that
                             father's age!");
}
}.
void display(){
System.out.println("Father's age: "+f_age);
System.out.println("Son's age: "+s_age);
}.
```

```
class excep {
    public static void main (String[] args) {
try {
        Son s = new Son();
        s.display();
    }
catch (WrongAge Exception wae) {
        System.out.println(wae);
    }
}
}.
```

OUTPUT:

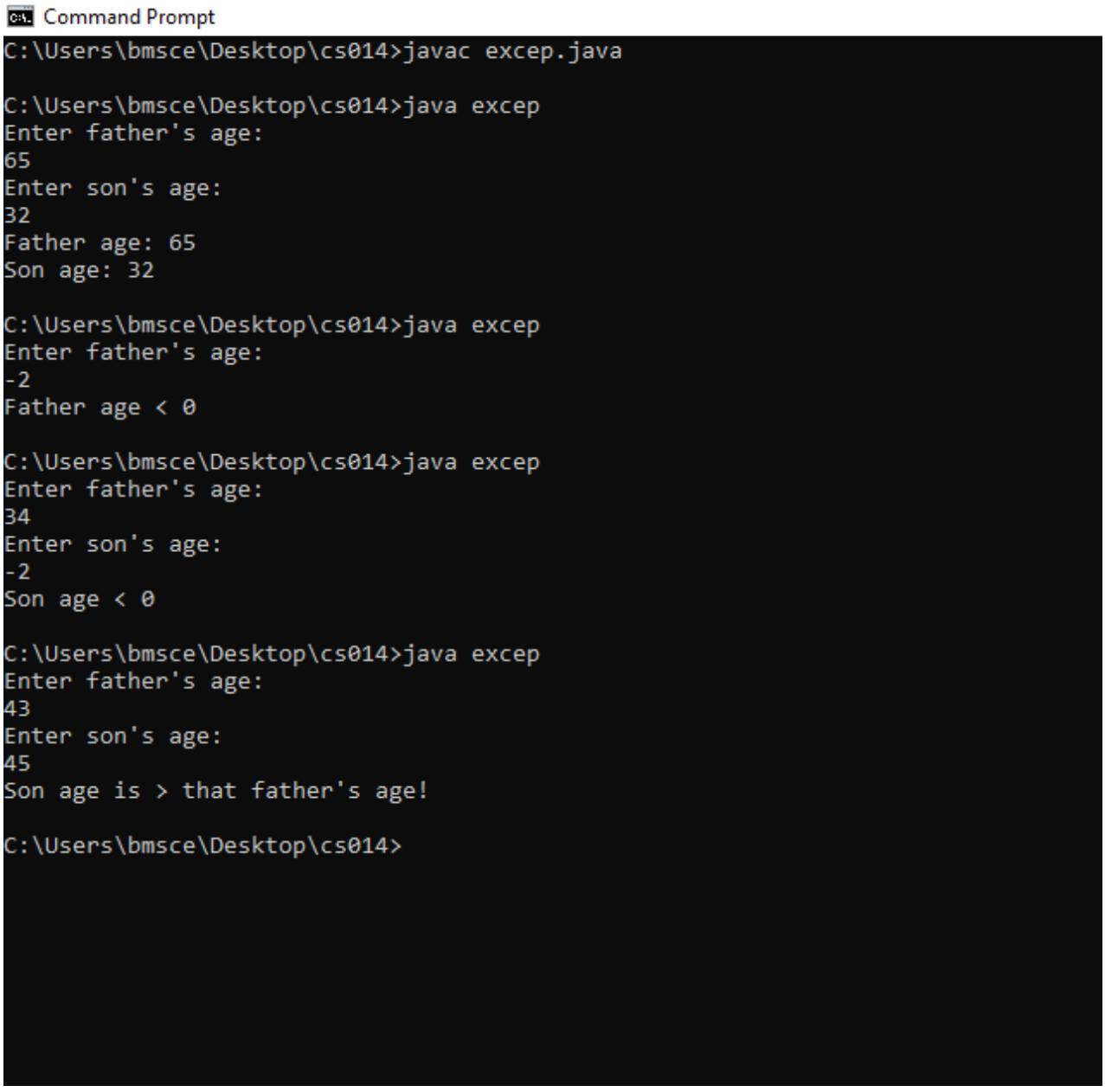
1st Case:
Enter Father's age:
65
Enter son's age:
32
Father age: 65
Son age: 32.

2nd Case
Enter Father's age:
-2
Father age < 0

3rd Case
Enter Father's age:
34
Enter son's age:
-2
Son age < 0

4th Case:
Enter Father's age:
43
Enter Son's age:
45
Son age is > that
Father's age!

Output:


Command Prompt
C:\Users\bmsce\Desktop\cs014>javac excep.java
C:\Users\bmsce\Desktop\cs014>java excep
Enter father's age:
65
Enter son's age:
32
Father age: 65
Son age: 32
C:\Users\bmsce\Desktop\cs014>java excep
Enter father's age:
-2
Father age < 0
C:\Users\bmsce\Desktop\cs014>java excep
Enter father's age:
34
Enter son's age:
-2
Son age < 0
C:\Users\bmsce\Desktop\cs014>java excep
Enter father's age:
43
Enter son's age:
45
Son age is > that father's age!
C:\Users\bmsce\Desktop\cs014>