WEEK 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 uses both father and son's age and throws an exception if son's age is >=father's age.

Source 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 {
     int age;
    public Father(int age) throws WrongAgeException {
        if (age <= 0) {
            throw new WrongAgeException("Wrong age");
        this.age = age;
    public int getAge() {
        return age;
class Son extends Father {
     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");
        if(sonAge <= 0){</pre>
        throw new WrongAgeException("Wrong age");
        this.sonAge = sonAge;
    public int getSonAge() {
        return sonAge;
public class FatherSon{
    public static void main(String[] args) {
            Scanner sc = new Scanner(System.in);
            System.out.print("Enter Father's Age: ");
            int fatherAge = sc.nextInt();
            System.out.print("Enter Son's Age: ");
            int sonAge = sc.nextInt();
            try {
                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());
```

Output:

Enter Son's Age: 26
Accepted Succesfully
PS C:\Users\satis\OneDrive\Documents\ooj_lab> javac FatherSon.
PS C:\Users\satis\OneDrive\Documents\ooj_lab> java FatherSon
Enter Father's Age: 30
Enter Son's Age: 32
Son's age cannot be greater than or equal to father's age

Enter Father's Age: 30 Enter Son's Age: 0

Wrong age

OBSERVATION:

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   Enherstance tree create about clair in Father clair, Proplimed
   a constructor which take the age and throws the exception
   wrong Age () when the Enput age co . In son clan , Empliment a
   Constructor that uses both father and son's agreement throws
  an exception if son's age is > = fathers age.
ms Emport Lawo. util. scanners,
    class wrong age exception extends Exception
      Public Wrong Agrenception (5 hong message)
         Saper (menage);
    class sonAge Exception extends exception
     Dublic SonAge Greenteen (string menage)
      & supper (menage),
   Clay Father
     d prevate ent age;
       Public Father (But age) throws wrong Age Exception
            d throw new wrong Age Coception ("wrong age");
        dal (ageco)
           thes cage = age;
        Public Ent get Agel)
             & return age;
  claus son extends Fathers
     Public son (Ent fortunary, Ent son Age) throw wrong Age Exception,
    d prevolte ent son Age;
                 son Age Proception
        Super ( Godler Age);
        El (son Age > = footherAge)
          & throw new son Agricoception ("son's agricornot be greater than
                or equal to father's egen);
              3 Hus , Son Age;
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         & seturn Son Age 9
Public class Tather son
      Public Static void orain (shing [] oray)
        d while ( true)
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           Sydemoulepsint (" faler Father's age " ")
           End Faller Age = Sc. mext Ind ();
           Synten occe - por weh ("Enter son's Age: ");
          But sonage = sconed Intile;
               Son son = new Son (father Age, son Age);
              System occoloposiden ( Accepted Succesfully ");
            codeh (wording Agr Exception e)
               System. och opsäntin (c. getmenege ());
            3
          catch ( strong SonAge Exception e)
              d System outoprinthn(e.getmenage(1);
          colch (sun Age
         System . oul . prints ["cooyed you leke to ore-enter details (x W)"
         Strong Enput = scriptio;
         Ef (Enput. equalt grorecon (un in) 9?
            break;
```

```
OUTPUT :
 Enter Father : 40
 Char Son's Age: 12
 Accepted succeptuly
 would you leke to re-enter detects (YIN)
 Enter Father Age : - 8
  Contin Son's Age: 40
  wrong age
  would you ceke to re-enter details (YIN)
  Enter Eather Age : 5
  Entr Son's Age : 14
  Son's age connot be greater than or equal to father's age
  would yoftene to re-enter delasts (4/1N)
```