INHERITANCE TREE EXCEPTION
Week 7

QUESTION:

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

INPUT:

```
import java.util.Scanner;
class Father{
    int Father_age;
    public Father(int Fa){
    try{
        Father_age = Fa;
        if(Father_age < 0){
        throw new Exception("Error! Age is less than 0");
        }
        else{
```

```java
        Father_age = Fa;
        }
    }
    catch(Exception e){
        System.out.println("Caught : "+e);
    }
    }
}

class Son extends Father{
    int Son_age;
    public Son(int Fa,int Sa){
    super(Fa);
    try{
        Son_age = Sa;
        if(Son_age<0){
        throw new Exception("Error! Son's age is less than
0");
        }
        else if(Son_age >= Father_age){
        throw new Exception("Error! Son's age cannot be
more than the Father's age");
        }
        else{
        Son_age = Sa;
        }
    }
```

```java
        catch(Exception e){
            System.out.println("Caught : "+e);
        }
    }
    void display(){
        System.out.println("Father's age = "+Father_age);
        System.out.println("Son's age = "+Son_age);
    }
}

class InheritanceTree extends Exception{
    public static void main(String args[]){
    Scanner ss = new Scanner(System.in);
    int a,b;
    System.out.println("Enter the father's age");
    a = ss.nextInt();
    System.out.println("Enter the son's age");
    b = ss.nextInt();
    Son ob1 = new Son(a,b);
    ob1.display();
    }
}
```

OUTPUT:

```
Command Prompt

C:\Users\Admin\Documents\1BM21CS248>javac InheritanceTree.java

C:\Users\Admin\Documents\1BM21CS248>java InheritanceTree
Enter the father's age
49
Enter the son's age
19
Father's age = 49
Son's age = 19

C:\Users\Admin\Documents\1BM21CS248>javac InheritanceTree.java

C:\Users\Admin\Documents\1BM21CS248>java InheritanceTree
Enter the father's age
49
Enter the son's age
-2
Caught : java.lang.Exception: Error! Son's age is less than 0
Father's age = 49
Son's age = -2

C:\Users\Admin\Documents\1BM21CS248>javac InheritanceTree.java

C:\Users\Admin\Documents\1BM21CS248>java InheritanceTree
Enter the father's age
49
Enter the son's age
50
Caught : java.lang.Exception: Error! Son's age cannot be more than the Father's age
Father's age = 49
Son's age = 50

C:\Users\Admin\Documents\1BM21CS248>javac InheritanceTree.java

C:\Users\Admin\Documents\1BM21CS248>java InheritanceTree
Enter the father's age
-20
Enter the son's age
40
Caught : java.lang.Exception: Error! Age is less than 0
Caught : java.lang.Exception: Error! Son's age cannot be more than the Father's age
Father's age = -20
Son's age = 40
```

Y. SHAMIL AHAMED
1BM21CS248.