

Ques IV

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`.

LAB PROGRAM-8

```
import java.util.*;  
class WrongAge extends Exception {
```

```
int f, s;
```

```
WrongAge (int page, int sage) {
```

```
    f = page;
```

```
    s = sage;
```

```
}
```

```
public String toString () {
```

```
    return "Please enter the correct ages or father's age
```

```
can't be less than or equal to son's age"; }
```

```
class NegativeAge extends Exception {
```

```
int a;
```

```
NegativeAge (int page) {
```

```
    a = page;
```

```
}
```

```
public String toString () {
```

```
    return "Age can't be a negative value"; }
```

```
}
```

```
class Father {
```

```
int page;
```

```
Scanner im = new Scanner (System.in);
```

```
Father () throws NegativeAge {
```

```
System.out.print ("Enter the father's age:");
```

```
page = im.nextInt();
```

```
if (page < 0) {
```

```
    throw new NegativeAge (page);
```

```
}
```

Class Son extends Father &

int Sage;

Scanner im = new Scanner(System.in);

Son () throws NegativeAge, WrongAge &

Super();

System.out.print("Enter the Son's age:");

Sage = im.nextInt();

if (Sage < 0) &

throw new NegativeAge(Sage);

}

if (Sage > = 100) &

throw new WrongAge(fax, Sage);

} }

Class Main &

public static void main (String args) &

try &

Son s = new Son();

}

catch (NegativeAge n) &

System.out.println ("Exception: "+n);

}

catch (WrongAge w) &

System.out.println ("Exception: "+w);

} }

Mainage.java - Notepad

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```
import java.util.*;
class WrongAge extends Exception{
int f,s;
WrongAge(int fage,int sage){
f=fage;
s=sage;
}
public String toString(){
return "Please enter the correct ages as father's age can't be less than or equal to son's age";
}}
class NegativeAge extends Exception{
int a;
NegativeAge(int fage){
a=fage;
}
public String toString(){
return "Age can't be a negative value.";
}}
class Father{
int fage;
Scanner in=new Scanner(System.in);
Father() throws NegativeAge{
System.out.println("Enter the father's age: ");
fage=in.nextInt();
}
```



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```
int fage;
Scanner in=new Scanner(System.in);
Father() throws NegativeAge{
System.out.println("Enter the father's age: ");
fage=in.nextInt();
if(fage<0){
throw new NegativeAge(fage);
}}}
class Son extends Father{
int sage;
Scanner in=new Scanner(System.in);
Son() throws NegativeAge,WrongAge{
super();
System.out.print(" Enter the son's age: ");
sage=in.nextInt();
if(sage<0){
throw new NegativeAge(sage);
}
if(sage>=fage){
throw new WrongAge(fage,sage);
}}}
class Mainage{
public static void main(String args[]){
try{
```

Mainage.java - Notepad

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```
Scanner in=new Scanner(System.in);
Son() throws NegativeAge,WrongAge{
super();
System.out.print(" Enter the son's age: ");
sage=in.nextInt();
if(sage<0){
throw new NegativeAge(sage);
}
if(sage>=fage){
throw new WrongAge(fage,sage);
}}}
class Mainage{
public static void main(String args[]){
try{
Son s=new Son();
}
catch(NegativeAge n){
System.out.println("Exception: "+n);
}
catch(WrongAge w){
System.out.println("Exception: "+w);
}}}
```

```
PS C:\Users\sarayu\Desktop\ooj> javac Mainage.java
PS C:\Users\sarayu\Desktop\ooj> java Mainage
Enter the father's age:
35
PS C:\Users\sarayu\Desktop\ooj> Enter the son's age: 15
PS C:\Users\sarayu\Desktop\ooj>
PS C:\Users\sarayu\Desktop\ooj> javac Mainage.java
PS C:\Users\sarayu\Desktop\ooj> java Mainage
Enter the father's age:
20
Enter the son's age: 35
Exception: Please enter the correct ages as father's age can't be less than or equal to son's age
PS C:\Users\sarayu\Desktop\ooj> javac Mainage.java
PS C:\Users\sarayu\Desktop\ooj> java Mainage
Enter the father's age:
-25
Exception: Age can't be a negative value.
PS C:\Users\sarayu\Desktop\ooj>
```