8 Exception Handling

```
import java.util.Scanner;
class WrongAge extends Exception
{
    public WrongAge (String message)
    {
        super (message);
    }
}
class Father {
    int fage;
    public Father (int fage) throws WrongAge
    {
        if (fage < 0)
        { throw new WrongAge ("Age cannot
be negative");
}
    this.fage = fage;
}
}
class son extends Father
{
    int sage;
    public son (int fage, int sage)
throws WrongAge {
    super (fage);
    if (sage >= fage)
    { throw new WrongAge ("son's
```

```
age must be less than Father's age");
}
    this.sage = sage;
}
}
public class FatherSon
{
    public static void main (String[]
args)
{
    Scanner sc = new Scanner (System.in);
    System.out.println("Enter fathers and
sons age");
        int fa = sc.nextInt();
        int sa = sc.nextInt();
    try
    {
        Son s = new Son(fa, sa);
    System.out.println("Father's age:" +
s.fage);
    System.out.println("Son's age:" + s.sage);
    }
    catch (WrongAge e)
    {
        System.out.println("Error:" + e.get
Message());
}
```

Algorithm

1) Start
2) Create a class wrongage which is a user exception defined
3) Create a class father which takes father's age as parameter & evaluates for greater than zero
4) Create a class son which extends father & takes parent parameter of father age & has student age if sage >= fage it will throw user defined error
5) the main function fatherson takes the values of ages from user & prints there age if it is valid
6) If the values are invalid it prints an appropriate msg of exception
7) Stop.

Output

Enter fathers' age and son's age : -1 2
Error: age cannot be negative
Enter fathers' age & son's age : 20 30
Error: son's age must be less than fa
Enter father's age & son's ag : 2 1 ag
Father's ag : 2
Son's ag : 1

```
C:\Users\bmsce>cd C:\Users\bmsce\Desktop\1bm22cs027 ooj

C:\Users\bmsce\Desktop\1bm22cs027 ooj>javac fatherson.java

C:\Users\bmsce\Desktop\1bm22cs027 ooj>java fatherson
AKANKSHA SINGA
1BM22CS027
Enter father's age and son's age:
-1
2
Error: Age cannot be negative

C:\Users\bmsce\Desktop\1bm22cs027 ooj>java fatherson
AKANKSHA SINGA
1BM22CS027
Enter father's age and son's age:
20
30
Error: Son's age must be less than Father's age

C:\Users\bmsce\Desktop\1bm22cs027 ooj>java fatherson
AKANKSHA SINGA
1BM22CS027
Enter father's age and son's age:
2
1
Father's age: 2
Son's age: 1
```

Q Multi Threading

```
class A extends Thread
{
    public void run()
    {
        while(true)
        {
            System.out.println("BMS college
of Engineering");
            try
            { Sleep(10000); }
            catch (exception e)
        { System.out.println("error in classA"); }
}}}

class B extends Thread
{
    public void run()
    {
        while(true)
        {
            System.out.println("CSE");
            try
            { sleep(2000); }
            catch (exception e)
        { System.out.println("error in classB"); }
}}}
```

```
class Test
{
    public static void main (String[] args)
    {
        A a = new A();
        B b = new B();
        a.start();
        b.start();
    }
}
```

Output:

```
BMS College of Engineering
 CSE
 CSE
 CSE
 CSE
 CSE
BMS College of Engineering
 CSE
 CSE
 CSE
 CSE
 CSE
BMS College of Engineering
 :
 :
```

Infinite loop

Algorithm

1) Start
2) Make 2 classes A & B
3) class A prints BMS college of engineering after every 10 seconds & is checked with help of a try catch block
4) class B prints CSE after every 2 seconds and is checked with try catch block
5) The main function creates 2 objects 1 of class A & other of class B and these two objects point to output class
6) Both the objects in main are called by start method which runs in classes & prints the required output
7) Stop.

16.02.24

```
C:\Users\bmsce>cd C:\Users\bmsce\Desktop\1bm22cs027 ooj

C:\Users\bmsce\Desktop\1bm22cs027 ooj>javac multithread.java

C:\Users\bmsce\Desktop\1bm22cs027 ooj>java multithread
AKANKSHA SINGA
1BM22CS027
BMS COLLEGE OF ENGINEERING
CSE
CSE
CSE
CSE
CSE
BMS COLLEGE OF ENGINEERING
CSE
CSE
CSE
CSE
CSE
CSE
BMS COLLEGE OF ENGINEERING
CSE
CSE
CSE
CSE
CSE
BMS COLLEGE OF ENGINEERING
CSE
CSE
```