

Q Create Father class and a Son class extending father class with appropriate exceptions

→ import java.util.Scanner;

class WrongAge extends Exception

{

public WrongAge(String message) {

super(message);

}

}

class Father {

int fatherAge;

public Father(int fatherAge) throws WrongAge

{

if (fatherAge < 0)

{ throw new WrongAge("Age cannot be negative"); }

this.fatherAge = fatherAge;

}

}

class Son extends Father {

int sonAge;

public Son(int fatherAge, int sonAge) throws WrongAge {

~~try { super(fatherAge); }~~

~~catch (WrongAge e)~~

~~{ System.out.println("Wrong father's age");~~

~~};~~

```
if (sonAge > fatherAge)
{ throw new WrongAge ("Son's age
must be less than father's age");
}
```

```
this.sonAge = sonAge;
}
```

```
}
```

```
public class fatherSon {
```

```
    public static void main (String [] args)
```

```
{ Scanner sc = new Scanner (System.in);
```

```
    System.out.println ("Enter father's age
and Son's age");
```

```
    int fa = sc.nextInt ();
```

```
    int sa = sc.nextInt ();
```

```
    try {
```

```
        Son s = new Son (fa, sa);
```

```
        System.out.println ("Father's age : " + s.fatherAge);
```

```
        System.out.println ("Son's age : " + s.SonsAge);
    }
```

```
    catch (WrongAge e) {
```

```
        System.out.println ("Error" + e.getMessage());
    }
```

Algorithm

Start

- Create Wrongage class extending exception class
- Pass the message from this Wrongage class to the main exception class
- Create father class and throw this exception when father's age is less than 0
- Create son's class extending father's class check son's age is greater than father's age if yes throw Wrong Age error
- Create main function, enter the user input values for son's and father's age. Check for conditions and print the values of son's and father's age
- Stop

Output

- Enter father's age and son's age:

22

6

Father's age: 22

Son's age: 6

Q Write a program which creates 2 threads
one thread displaying "BMS College of
Engineering" ^{after every 10 secs} and the second thread
displaying "CSE" every 2 seconds

→

Algorithm

- Create a class A extending Thread
- Create a constructor A where set $t_1 = 0$ and maximum time limit as $time_1 = 10000$ msec
- Now create a run method which prints BMSCE and increase t_1 by 10000
- Create a class B extending Thread
- Create constructor B set $t_2 = 0$ and max time limit as $time_2 = 2000$ msec
- Now create run method printing CSE and increase t_2 by 2000
- Inside the main function create 2 threads one of each class and start the threads
- Stop


```
class A extending Thread
```

```
{
```

```
    A ( ) {
```

```
        int t1 = 0;
```

```
        int time1 = 100000;
```

```
    }
```

```
    public void run ( )
```

```
    { while (t1 <= time1)
```

```
        { System.out.println (" BMS College  
of Engineering ");
```

```
        try {
```

```
            sleep (10000);
```

```
        }
```

```
        except {
```

```
        catch (Exception e)
```

```
        {
```

```
            System.out.println (" e.getMessage ( )
```

```
        }
```

```
        t1 += 10000;
```

```
    }
```

```
}
```

```
}
```

```
class B extending Thread
```

```
{
```

```
    B ( ) {
```

```
        int t2 = 0;
```

```
        int time2 = 20000;
```

```
    }
```

```

public void run()
{
    while (t2 <= time2)
    {
        System.out.println("CSE");
        try {
            Sleep(2000);
        }
        catch (InterruptedException e)
        {
            System.out.println("e.getMessage()");
        }
        t2 += 2000;
    }
}
}

```

```

public class Demo
{

```

```

    public static void main (String args[])
    {
        new A().start();
        new B().start();
    }
}

```

OUTPUT

BMSCF

CSE

CSE

CSE

CSE

CSE

BMSCF

CSE

CSE

CSE

CSE

CSE

BMSCF

BMSCF

BMSCF

BMSCF

BMSCF

BMSCF

BMSCF

BMSCF

16.02.24

```
C:\Users\STUDENT\Desktop\1bm22cs029>javac demo.java
```

```
C:\Users\STUDENT\Desktop\1bm22cs029>java demo
```

Akshara.Singa

1BM22CS029

BMS COLLEGE OF ENGINEERING

CSE

CSE

CSE

CSE

CSE

BMS COLLEGE OF ENGINEERING

CSE

CSE

CSE

CSE

CSE

BMS COLLEGE OF ENGINEERING

CSE

BMS COLLEGE OF ENGINEERING

BMS COLLEGE OF ENGINEERING

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BMS COLLEGE OF ENGINEERING

BMS COLLEGE OF ENGINEERING

BMS COLLEGE OF ENGINEERING

```
C:\Users\STUDENT\Desktop\1bm22cs029>java fatherson
Akshara Singa
1BM22CS029
Enter father's age and son's age:
22
6
Father's age: 22
Son's age: 6
```

```
C:\Users\STUDENT\Desktop\1bm22cs029>javac fatherson.java
```

```
C:\Users\STUDENT\Desktop\1bm22cs029>java fatherson
Akshara Singa
1BM22CS029
Enter father's age and son's age:
20
30
Error: Son's age must be less than Father's age
```

```
C:\Users\STUDENT\Desktop\1bm22cs029>javac fatherson.java
```

```
C:\Users\STUDENT\Desktop\1bm22cs029>java fatherson
Akshara Singa
1BM22CS029
Enter father's age and son's age:
-9
2
Error: Age cannot be negative
```