

```

import java.io.*;
import java.util.*;
class A{
    int n1,n2,q,p;
    A(int a,int b){
        n1=a;
        n2=b;
    }
    void divide() throws ArithmeticException{
        q=n1/n2;
        System.out.println(n1+"/"+n2+"="+q);
    }
    void multiply(){
        p=n1*n2;
        System.out.println(n1+"*"+n2+"="+p);
    }
}
class ExceptionHandling{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.print("enter first number = ");
        int x=sc.nextInt();
        System.out.print("enter second number = ");
        int y=sc.nextInt();
        A obj=new A(x,y);
        try{
            obj.divide();
        }catch(ArithmeticException e){
            System.out.println(e);
        }
        finally{
            obj.multiply();
        }
    }
}

```

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Activities Terminal Mar 5 11:02 AM
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ javac ExceptionHandling.java
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ java ExceptionHandling
enter first number = 12
enter second number = 0
12.0/0.0=Infinity
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ java ExceptionHandling
enter first number = 345
enter second number = 78
345.0/78.0=4.423076923076923
345.0*78.0=26910.0
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ java ExceptionHandling
enter first number = 0
enter second number = 0
0.0/0.0=NaN
0.0*0.0=0.0
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$

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import java.util.*;
class T1 extends Thread{
    public void run(){
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a limit = ");
        int l=sc.nextInt();
        Random r=new Random();
        for(int i=0;i<l;i++){
            int num=r.nextInt(100);
            int n=num;
            if(num%2==0){
                T2 t2=new T2(n);
                t2.start();
            }else{
                T3 t3=new T3(n);
                t3.start();
            }
            try{
                sleep(1000);
            }catch(Exception e){
                System.out.println(e);
            }
        }
    }
}
class T2 extends Thread {
    int n;
    T2(int num){
        n=num;
    }
    public void run(){
        System.out.println((n+"^2 = "+n*n));
    }
}
class T3 extends Thread{
    int n;
    T3(int num){
        n=num;
    }
    public void run(){
        System.out.println(n+"^3 = "+n*n*n);
    }
}
class Thread1 {
    public static void main(String args[]){
        T1 t1=new T1();
        t1.start();
    }
}

```

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Activities Terminal - Mar 5 11:15 AM
jishnu@pop-os: ~/Desktop/Java Programming/LAB/cycle4
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ javac multithread.java
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ java multithread
Enter a limit = 10
78^2 = 6084
31^3 = 29791
82^2 = 6724
93^3 = 804357
87^3 = 658503
87^3 = 658503
26^2 = 676
5^3 = 125
15^3 = 3375
69^3 = 328509
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$
```

```
class Table{
    synchronized void printTable(int n){
        for(int i=1;i<=5;i++){
            System.out.println(n*i);
            try{
                Thread.sleep(1000);
            }catch(Exception e){
                System.out.println(e);
            }
        }
    }
}

class MyThread1 extends Thread{
    Table t;
    MyThread1(Table t){
        this.t=t;
    }
    public void run(){
        t.printTable(5);
    }
}

class MyThread2 extends Thread{
    Table t;
    MyThread2(Table t){
        this.t=t;
    }
    public void run(){
        t.printTable(100);
    }
}

class TestSynchronization{
    public static void main(String args[]){
        Table obj = new Table();
        MyThread1 t1=new MyThread1(obj);
        MyThread2 t2=new MyThread2(obj);
        t1.start();
        t2.start();
    }
}
```

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Activities Terminal Mar 5 11:24 AM jishnu@pop-os: ~/Desktop/Java Programming/LAB/cycle4
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ javac TestSynchronization.java
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$ java TestSynchronization
5
10
15
20
25
100
200
300
400
500
jishnu@pop-os:~/Desktop/Java Programming/LAB/cycle4$
```