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COURSE	Java Programming

CAT 2

You are required to compute the power of a number by implementing a calculator. Create a class `MyCalculator` which consists of a single method `long power(int, int)`. This method takes two integers, `n` and `p`, as parameters and finds n^p . If either `n` or `p` is negative, then the method must throw an exception which says "n and p should not be negative". Also, if both `n` and `p` are zero, then the method must throw an exception which says " n and p should not be zero "

Complete the function `power` in class `MyCalculator` and return the appropriate result after the power operation or an appropriate exception as detailed above.

Code

```

/*
 * Complete the function power in class MyCalculator and return the appropriate
 * result
 * after the power operation or an appropriate exception as detailed above.
 */
import java.util.Scanner;

public class MyCalculator{
    static long power(int n, int p) throws Exception{
        if(n == 0 && p == 0){
            throw new Exception("n and p should not be zero");
        }
        else if(n < 0 || p < 0){
            throw new Exception("n or p should not be negative");
        }
        else{
            return (long)Math.pow(n,p);
        }
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n, p;
        while(sc.hasNextInt()){
            n = sc.nextInt();
            p = sc.nextInt();
            try{
                System.out.println(MyCalculator.power(n,p));
            }
            catch(Exception e){
                System.out.println(e);
            }
        }
    }
}

```

```
}  
}
```

Output

The screenshot shows the IntelliJ IDEA IDE with the `MyCalculator.java` file open. The code defines a `MyCalculator` class with a `power` method and a `main` method. The `main` method uses a `Scanner` to read two integers, `n` and `p`, and then calls `MyCalculator.power(n, p)`. The output window shows the results of the program execution, which are:

```
243  
16  
java.lang.Exception: n and p should not be zero  
java.lang.Exception: n or p should not be negative  
java.lang.Exception: n or p should not be negative
```

The code in `MyCalculator.java` is as follows:

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```

Write a Java program to Print alternate numbers using 2 Threads.

Code

```
// Write a Java program to Print alternate numbers using 2 Threads.

class Numbers{
    int n = 0;
    int end;
    Numbers(int end){
        this.end = end;
    }

    synchronized void printEvenNum(){
        while(n<=end){
            if(n%2 == 0){
                System.out.println(Thread.currentThread().getName() + " is
printing " + n);
                n++;
                notify();
            }
            else if(n%2 != 0){
                try {
                    wait();
                } catch (InterruptedException e) {
                    e.printStackTrace();
                }
            }
        }
    }

    synchronized void printOddNum(){
        while(n<=end){
            if(n%2 != 0){
                System.out.println(Thread.currentThread().getName() + " is
printing " + n);
                n++;
                notify();
            }
            else if(n%2 == 0){
                try {
                    wait();
                } catch (InterruptedException e) {
                    e.printStackTrace();
                }
            }
        }
    }
}

public class AlternateNumbers {
    public static void main(String[] args) {
        final Numbers num = new Numbers(100);

        new Thread(){
            public void run(){
                num.printEvenNum();
            }
        }
    }
}
```

```

    }.start();
    new Thread(){
        public void run(){
            num.printOddNum();
        }
    }.start();
}
}

```

Output

