

1. Review the Java code below then Re-write the whole program to improve the source code.

```
public class Factorial  
{  
    public static void main(String[] args)  
    { final int NUM = 100;  
        for(int i = 0; i < NUM; i++)  
            System.out.println( i + "! is " + factorial(i));  
    }  
  
    public static int factorial(int n)  
    { int result = 1;  
        for(int i = 2; i <= n; i++)  
            result *= i;  
        return result;  
    }  
}
```



```
public class Factorial {  
  
    private static final int NUM = 100;  
  
    public static void main(String[] args) {  
        for (int i = 0; i < NUM; i++) {  
            System.out.println(i + "!" + factorial(i));  
        }  
    }  
  
    public static long factorial(int n) {  
  
        if (n == 0 || n == 1) {  
            return 1;  
        }  
  
        long result = 1;  
        for (int i = 2; i <= n; i++) {  
            result *= i;  
        }  
        return result;  
    }  
}
```



