嵌套循环练习

人员

霍佳铭 刘奕男 张高 刘克阳 于昊华 刘子郴 李景翾 初星熠 林钰明 陈允升 隋淏琛 臧晨云 陈之恒 屈钰轩 到课

上周作业检查

上周作业链接: https://cppoj.kids123code.com/contest/2451

王向东老师周六一点半C++嵌套循环图形输出练习

🔄 刷新

#	用户名	姓名	编程分	时间	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	liuyinan	刘奕男	1900	3	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2	zhanggao	张高	1900	11	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3	zangchenyun	臧晨云	1900	12	100	100	100	100	100	100	100	100	100	100	100	100	100	100
4	suihaochen	隋淏琛	1900	13	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	chuxingyi	初星熠	1900	15	100	100	100	100	100	100	100	100	100	100	100	100	100	100
6	liukeyang	刘克阳	1900	19	100	100	100	100	100	100	100	100	100	100	100	100	100	100
7	huojiaming	霍佳铭	1900	27	100	100	100	100	100	100	100	100	100	100	100	100	100	100
8	liujiahao	刘嘉浩	1900	54	100	100	100	100	100	100	100	100	100	100	100	100	100	100
9	chenyunsheng	陈允升	1900	55	100	100	100	100	100	100	100	100	100	100	100	100	100	100
10	yuhaohua	于昊华	1700	4	100	100	100	100	100	100	100	100	100	100	100	100	100	100
11	liuzichen123	刘子郴	1300	4	100	100	100	100	100	100	100	100	100	100	100			
12	linyuming	林钰明	1300	12	100	100	100	100	100	100	100	100	100	100			
13	lijingxuan	李景翾	1200	3	100	100	100		100	100	100	100	100	100		100	
14	chenzhiheng	陈之恒	1100	15	100	100	100	100	100	100	100	100	100	100			
15	zhaoyuxuan	赵裕轩	1000	11	100	100	100		100	100	100	100	100				

作业

https://cppoj.kids123code.com/contest/2581 (作业是 A ~ H 题必做)

课堂表现

今天的嵌套循环内容比起之前的题目就是会难一些, 同学们课上觉得难是正常的, 慢慢学几节课就会接受的越来越好的。

课堂内容

求1!+2!+...+N!

```cpp
#include <iostream>

using namespace std;

int main() {
    int n;
    cin >> n;
    int sum = 0;
```

```cpp
    for (int i = 1; i <= n; i++) {
        int t = 1;
        for (int j = 1; j <= i; j++) {
            t *= j;
        }
        sum += t;
    }
    cout << sum << endl;
    return 0;
}
```

多项式求和

```cpp
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n; cin >> n;
    int sum = 0;
    for (int i = 1; i <= n; ++i) {
        int res = 1;
        for (int j = 1; j <= i; ++j) {
            res *= j;
        }
        if (i%2 == 1) sum += res;
        else sum -= res;
    }
    cout << sum << endl;
    return 0;
}
```

求1~n中每个数的因子有哪些?

```cpp
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n; cin >> n;
    for (int i = 1; i <= n; ++i) {
        cout << i << ":";
        for (int j = 1; j <= i; ++j) {
            if (i%j == 0) {
                cout << j << " ";
            }
```

```
        }
        cout << endl;
    }
    return 0;
}
```

求因子数量

```cpp
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n; cin >> n;
    for (int i = 1; i <= n; ++i) {
        int cnt = 0;
        for (int j = 2; j < i; ++j) {
            if (i%j == 0) {
                cnt++;
            }
        }
        cout << cnt << endl;
    }
    return 0;
}
```

请输出n行的9*9乘法表

```cpp
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n; cin >> n;
    for (int i = 1; i <= n; ++i) {
        for (int j = 1; j <= i; ++j) {
            cout << i << "*" << j << "=" << i*j << " ";
        }
        cout << endl;
    }
    return 0;
}
```

姐妹数对

```cpp
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n, cnt = 0;
    cin>>n;
    for (int i = 1; i <= n; i++) {
        for (int j = i+1; j <= n; j++) {
            if ((i+j)%3==0||(i+j)%7==0) {
                cnt++;
            }
        }
    }
    cout << cnt << endl;
    return 0;
}
```

空心正方形

```cpp
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n;
    cin>>n;
    for (int i = 1; i <= n; i++) {
        for (int j = 1; j <= n; j++) {
            if (i==1||i==n||j==1||j==n) {
                cout << "*";
            }
            else {
                cout << " ";
            }
        }
        cout << endl;
    }
    return 0;
}
```

打印空心等腰三角形

```cpp
#include <bits/stdc++.h>
```

```cpp
using namespace std;

int main()
{
    int n;
    cin>>n;
    for (int i = 1, c = 1; i <= n; i++, c+=2) {
        for (int j = 1; j <= n-i; j++) {
            cout << " ";
        }
        for (int j = 1; j <= c; j++) {
            if (i==1||i==n||j==1||j==c) {
                cout << "*";
            }
            else {
                cout << " ";
            }
        }
        cout << endl;
    }
    return 0;
}
```

```cpp
using namespace std;

int main()
{
    int n;
    cin>>n;
```