

嵌套循环图形输出练习

人员

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上周作业检查

上周作业链接: <https://cppoj.kids123code.com/contest/2327>

王向东老师周六一点点C++for循环维护cnt和sum																		
#	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	1800	509	100	100	100	100	100	100	100	100	100	100	100	100	100	
2	chenyunsheng	陈允升	1800	538	100	100	100	100	100	100	100	100	100	100	100	100	100	
3	chuxingyi	初星熠	1800	551	100	100	100	100	100	100	100	100	100	100	100	100	100	
4	zhanggao	张高	1800	552	100	100	100	100	100	100	100	100	100	100	100	100	100	
5	liuzichen123	刘子郴	1800	555	100	100	100	100	100	100	100	100	100	100	100	100	100	
6	chenzhiheng	陈之恒	1800	555	100	100	100	100	100	100	100	100	100	100	100	100	100	
7	huoqiaming	霍佳铭	1800	564	100	100	100	100	100	100	100	100	100	100	100	100	100	
8	zhaoyuxuan	赵裕轩	1800	591	100	100	100	100	100	100	100	100	100	100	100	100	100	
9	liulekeyang	刘克阳	1800	596	100	100	100	100	100	100	100	100	100	100	100	100	100	
10	linyuming	林钰明	1800	596	100	100	100	100	100	100	100	100	100	100	100	100	100	
11	liujiahao	刘嘉浩	1600	533	100	100	100	100	100	100	100	100	100	100	100	100	100	
12	yuhuohua	于昊华	1387	408	97	100	100	100	100	100	100	100	100	100	100	100	100	
13	lijingxuan	李景翩	1100	344		100	100	100	100	100	100	100	100	100	100	100	100	

作业

<https://cppoj.kids123code.com/contest/2451> (作业是 A ~ S 题必做)

课堂表现

今天主要讲的嵌套循环实现图形输出, 今天的题目基本上风格是一致的, 大家基本上彻底搞明白其中两道题就可以都搞明白了。

同学们要沉住气研究一下, 把这些题彻底搞明白。

课堂内容

字符图形1

```
#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<<"*";
        cout<<endl;
    }
}
```

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

字符图形2

```
#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<<"*";
        }
        cout<<endl;
    }
    return 0;
}
```

数字直角 (1)

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

数字直角 (2)

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

字符图形3

```
#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-1;j++)
        {
            cout<<" ";
        }
        for(int j=1;j<=n;j++)
        {
            cout<<"*";
        }
        cout<<endl;
    }
    return 0;
}
```

数字矩形(1)

```
#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++)  
        {  
            cout<<i;  
        }  
        cout<<endl;  
    }  
    return 0;  
}
```

数字矩形(2)

```
#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++)  
        {  
            cout<<j;  
        }  
        cout<<endl;  
    }  
    return 0;  
}
```

字符图形2

```
#include<bits/stdc++.h>  
using namespace std;  
int main()  
{  
    int n;  
    cin>>n;  
    for(int i=1,c=n;i<=n;i++,c--)  
    {  
        for(int j=1;j<=c;j++)  
        {  
            cout<<"*";  
        }  
        cout<<endl;  
    }  
}
```

```
    }
    return 0;
}
```

数字直角 (3)

```
#include<bits/stdc++.h>
using namespace std;
int main()
{
    int n;
    cin>>n;
    for(int i=1,c=n;i<=n;i++,c--)
    {
        for(int j=1;j<=c;j++)
        {
            cout<<j;
        }
        cout<<endl;
    }
    return 0;
}
```

数字直角 (4)

```
#include <bits/stdc++.h>
using namespace std;
int n;
int main()
{
    cin>>n;
    for(int i=1,c=n;i<=n;i++,c--)
    {
        for(int j=1;j<=c;j++)
        {
            cout<<c;
        }
        cout<<endl;
    }
    return 0;
}
```

字符图形4

```
#include <bits/stdc++.h>
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++)
        {
            cout<<"*";
        }
        cout<<endl;
    }
    return 0;
}
```

字符图形5

```
#include <bits/stdc++.h>
using namespace std;
int main()
{
    int n;
    cin>>n;
    for(int i=1,c=3;i<=n;i++,c+=2)
    {
        for(int j=1;j<=n-i;j++)
        {
            cout<<" ";
        }
        for(int j=1;j<=c;j++)
        {
            cout<<"*";
        }
        cout<<endl;
    }
    return 0;
}
```

字符图形6

```
#include <bits/stdc++.h>
using namespace std;
int main()
{
```

```

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

```

字符图形8

```

#include <bits/stdc++.h>

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++) {
            cout << j;
        }
        cout << endl;
    }
    return 0;
}

```

数字三角

```

#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n;

```

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

字符图形

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

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++) {
            cout << j;
        }
        cout << endl;
    }
    return 0;
}
```

字符图形

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

using namespace std;

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

```
    }
    for (int j = 1; j <= c; j++) {
        cout << n-i+1;
    }
    cout << endl;
}
return 0;
}
```

奇特的三角

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

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

字符图形9

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

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++) {  
    cout << i;  
}  
cout << endl;  
}  
return 0;  
}
```