

# 循环综合练习

## 人员

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## 作业检查

除了几位请假的同学外，上节课到课的所有同学全部完成了上周的必做作业，同时也有很多同学完成了选做作业，提出表扬！！

## 作业

<https://www.luogu.com.cn/contest/196587>, 课上的 A B C D E 必须做完，以及上节课的几道题也需要补完剩下的几道题目留作选做作业

## 课堂表现

同学们上课听讲做题都非常认真，课间大部分也在思考做题。

## 课堂内容

### P5719 【深基4.例3】分类平均

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

using namespace std;

int main()
{
    int n, k; cin >> n >> k;
    int suma = 0, cnta = 0;
    int sumb = 0, cntb = 0;
    for (int i = 1; i <= n; ++i) {
        if (i % k == 0) suma += i, ++cnta;
        else sumb += i, ++cntb;
    }
    printf("%.1f %.1f\n", 1.0*suma/cnta, 1.0*sumb/cntb);
    return 0;
}
```

### P1980 [NOIP2013 普及组] 计数问题

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

```
using namespace std;

int main()
{
    int n, x; cin >> n >> x;
    int res = 0;
    for (int i = 1; i <= n; ++i) {
        int t = i;
        while (t != 0) {
            if (t%10 == x) {
                res++;
            }
            t /= 10;
        }
    }
    cout << res << endl;
    return 0;
}
```

### U471679 数字直角三角形

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

using namespace std;

int main()
{
    int n; cin >> n;
    int id = n*(n+1)/2;
    for (int i = n; i >= 1; --i) {
        for (int j = 1; j <= i; ++j) {
            printf("%04d", id);
            id--;
        }
        cout << endl;
    }
    return 0;
}
```

### P5725 【深基4.习8】求三角形

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

using namespace std;

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

```
int cnt = 0;
for (int i = 1; i <= n; ++i) {
    for (int j = 1; j <= n; ++j) {
        ++cnt;
        printf("%02d", cnt);
    }
    cout << endl;
}
cout << endl;

cnt = 0;
for (int i = 1; i <= n; ++i) {
    for (int j = n; j > i; --j) cout << " ";
    for (int j = i; j >= 1; --j) {
        ++cnt;
        printf("%02d", cnt);
    }
    cout << endl;
}
return 0;
}
```

## B2057 最高的分数

打擂台，求最大值(此题目非常重要，同学们一定要非常熟练)

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

using namespace std;

int main()
{
    int n, x;
    cin >> n;
    int maxx = -1;

    for (int i = 1; i <= n; i++) {
        cin >> x;
        if (x > maxx) {
            maxx = x;
        }
    }
    cout << maxx << endl;
    return 0;
}
```

## B2058 奥运奖牌计数

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

using namespace std;

int main()
{
    int n,jin,yin,tong;
    cin >> n;
    int zongjin = 0, zongyin = 0, zongtong = 0;
    for (int i = 1; i <= n; i++) {
        cin >> jin >> yin >> tong;
        zongjin += jin;
        zongyin += yin;
        zongtong += tong;
    }
    cout << zongjin << " " << zongyin << " " << zongtong << " ";
    cout << zongjin+zongyin+zongtong << endl;
    return 0;
}
```

### B2072 分苹果

```
#include<iostream>
#include<cstdio>
using namespace std;
int main()
{
    int a,s=0;
    cin >> a;
    for (int i=1;i<=a;i++)
    {
        s += i;
    }
    cout << s;
    return 0;
}
```

### B2078 含 k 个 3 的数

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

using namespace std;

int main()
{
    long long m;
    int k;
```

```
cin >> m >> k;
int cnt = 0;
while (m != 0) {
    if (m%10 == 3) {
        cnt++;
    }
    m /= 10;
}
if (cnt == k) {
    cout << "YES" << endl;
}
else {
    cout << "NO" << endl;
}
return 0;
}
```

## B2081 与 7 无关的数

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

using namespace std;

int main()
{
    int n, sum = 0;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        bool flag = true;
        if (i%7 == 0) {
            flag = false;
        } else {
            int a = i;
            while (i != 0) {
                if (i%10 == 7) {
                    flag = false;
                }
                i /= 10;
            }
            i = a;
        }
        if (flag == true) {
            sum += i * i;
        }
    }
    cout << sum << endl;
    return 0;
}
```