一维数组练习

人员

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作业

https://www.luogu.com.cn/contest/199412

课堂表现

同学们课上听课都很认真，课下要好好复习一维数组的使用, 补完之前的作业

课堂内容

B2089 数组逆序重存放

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

using namespace std;

int main()
{
    int a[105];
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }

    for (int i = n; i >= 1; i--) {
        cout << a[i] << " ";
    }
    return 0;
}
```

U477531 找“大数”的数量

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

using namespace std;

int main()
{
    int a[105];
    int n;
```

```
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }

    int cnt = 0;
    for (int i = 2; i <= n-1; i++) {
        if (a[i]>a[i-1] && a[i]>a[i+1]) {
            cnt++;
        }
    }
    cout << cnt << endl;
    return 0;
}
```

U477532 输出奇偶数

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

using namespace std;

int main()
{
    int a[105];
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }

    for (int i = 1; i <= n; i++) {
        if (a[i]%2 == 1) {
            cout << a[i] << " ";
        }
    }
    cout << endl;

    for (int i = 1; i <= n; i++) {
        if (a[i]%2 == 0) {
            cout << a[i] << " ";
        }
    }
    return 0;
}
```

U477560 200相关的变化

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

using namespace std;

int main()
{
    long long n, k;
    cin >> n >> k;
    for (int i = 1; i <= k; i++) {
        if (n%200 == 0) {
            n /= 200;
        }
        else {
            n = n*1000 + 200;
        }
    }

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

U477534 求和

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

using namespace std;

int main()
{
    int a[5005];
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }
    int k;
    cin >> k;

    int sum = 0;
    for (int i = 1; i <= n; i++) {
        if (a[i]%k == 0) {
            sum += a[i];
        }
    }
    cout << sum << endl;
    return 0;
}
```

U477537 数字之和为x的整数

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

using namespace std;

int main()
{
    int a[10005];
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }
    int k;
    cin >> k;

    int cnt = 0, sum = 0;
    for (int i = 1; i <= n; i++) {
        int t = a[i], he = 0;
        while (t != 0) {
            he += t%10;
            t /= 10;
        }

        if (he == k) {
            cnt++;
            sum += a[i];
        }
    }
    cout << cnt << " " << sum << endl;
    return 0;
}
```

P9517 drink

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

using namespace std;

int main()
{
    int a[100005];
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }

    int cnt = 0;
```

```
    for (int i = 1; i <= n; i++) {
        if (a[i] == 1) {
            cnt++;
        }
    }
    if (cnt == 0) {
        cout << 0 << endl;
        return 0;
    }

    int l, r;
    for (int i = 1; i <= n; i++) {
        if (a[i] == 1) {
            l = i;
            break;
        }
    }
    for (int i = n; i >= 1; i--) {
        if (a[i] == 1) {
            r = i;
            break;
        }
    }
    cout << r-l+1 << endl;
    return 0;
}
```

B3652 [语言月赛202208] 渡荆门送别

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

using namespace std;

int main()
{
    long long a[1000005];
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }

    long long maxx = 0, minn = 1000000000000000000+1;
    for (int i = 1; i <= n; i++) {
        if (a[i] > maxx) {
            maxx = a[i];
        }
        if (a[i] < minn) {
            minn = a[i];
        }
    }
```

```
    for (int i = 1; i <= n; i++) {
        cout << maxx-a[i] << " ";
    }
    cout << endl;

    for (int i = 1; i <= n; i++) {
        cout << a[i]-minn << " ";
    }
    return 0;
}
```

数组定义

数组一定是定义在 `int main()` 的上面, 这样数组默认就全都是 0

```
#include <iostream>
using namespace std;

int a[100005];  // 像这样, 定义在 int main() 上面

int main() {

    return 0;
}
```

U480291 求排名

```
1. 输入 n 个学生的成绩

2. 求这 n 个学生的排名

    求 1/2/3/.../n 的排名

    for (int i = 1; i <= n; i++) {
        求第 i 个人的排名
            -> 第 i 个人的排名怎么求?
            要看有多少人的成绩比第 i 个人的成绩高

            第 i 个人的成绩: a[i]
            其他人的成绩: a[1], a[2], a[3], ..., a[n]

            看 a[1]~a[n] 中, 有几个数比 a[i] 大

            int cnt = 0;
            for (int j = 1; j <= n; j++) {
                if (a[j] > a[i]) {
                    cnt++;
                }
```

```
            }

            一共有 cnt 个人的成绩比第 i 个人的成绩高，第 i 个人排 cnt+1 名
    }
```

```
#include <iostream>

using namespace std;

int a[1005];

int main()
{
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }

    for (int i = 1; i <= n; i++) {
        int cnt = 0;
        for (int j = 1; j <= n; j++) {
            if (a[j] > a[i]) {
                cnt++;
            }
        }
        cout << cnt+1 << " ";
    }
    return 0;
}
```

U480301 判断数组是否对称

```
i: 1 ~ n/2 循环

a[i] <-> a[n-i+1]

如果相同，继续往里看

如果不相同，说明一定不是回文，
    cout << "NO"; return 0;

如果全部循环完了，都没有问题，
    说明是回文，cout << "YES";
```

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

```cpp
using namespace std;

int a[25];

int main()
{
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }

    for (int i = 1; i <= n/2; i++) {
        if (a[i] != a[n-i+1]) {
            cout << "NO" << endl;
            return 0;
        }
    }

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