一维数组排序

人员

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作业

https://www.luogu.com.cn/contest/210297

课堂表现

大部分同学这节课听讲都很认真，但有几位同学只专注于自己做题，在老师讲题时做自己题不注意听，以后要进行改正，老师讲课时要集中注意力听课。

课堂内容

U492933 找筷子

```
#include <iostream>

using namespace std;

int cnt[1005];

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

    for (int i = 1; i <= 1000; i++) {
        if (cnt[i]%2 == 1) {
            cout << i << endl;
        }
    }
    return 0;
}
```

U492934 找整数

```cpp
// 方法一
#include <iostream>

using namespace std;

int cnt[15];

int main()
{
    int l, r; cin >> l >> r;
    for (int i = l; i <= r; i++) {
        int t = i * i;
        if (t>=1000000 && t<10000000) {
            for (int j = 0; j <= 9; j++) {
                cnt[j] = 0;
            }
            int ge = t%10, shi = t/10%10, bai = t/100%10, qian = t/1000%10;
            int wan = t/10000%10, shiwan = t/100000%10, baiwan = t/1000000%10;
            cnt[ge]++, cnt[shi]++, cnt[bai]++, cnt[qian]++;
            cnt[wan]++, cnt[shiwan]++, cnt[baiwan]++;

            int tot = 0;
            for (int j = 0; j <= 9; j++) {
                if (cnt[j] > 0) {
                    tot++;
                }
            }
            if (tot == 7) {
                cout << i << endl;
            }
        }
    }
    return 0;
}
```

```cpp
// 方法二
#include <iostream>

using namespace std;

int cnt[15];

int main()
{
    int l, r; cin >> l >> r;
    for (int i = l; i <= r; i++) {
        int t = i * i;
        if (t>=1000000 && t<10000000) {
            for (int j = 0; j <= 9; j++) {
                cnt[j] = 0;
```

```
            }
            while (t != 0) {
                cnt[t%10]++;
                t /= 10;
            }

            int tot = 0;
            for (int j = 0; j <= 9; j++) {
                if (cnt[j] > 0) {
                    tot++;
                }
            }
            if (tot == 7) {
                cout << i << endl;
            }
        }
    }
    return 0;
}
```

U489768 数字母

```
#include <iostream>

using namespace std;

char a[100005];

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

    int cnt = 1, maxx = 0;
    for (int i = 2; i <= n; i++) {
        if (a[i] == a[i-1]) {
            cnt++;
        } else {
            if (a[i-1] == 'A') {
                if (cnt > maxx) {
                    maxx = cnt;
                }
            }
            cnt = 1;
        }
    }

    if (a[n] == 'A' && cnt > maxx) {
```

```
            maxx = cnt;
        }

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

U493770 标准零件的数量

abs 方法: 取绝对值

```
#include <iostream>

using namespace std;

int a[105];

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

    int x;
    cin >> x;

    int cnt = 0;
    for (int i = 1; i <= n; i++) {
        if (abs(x-a[i]) <= 5) {
            cnt++;
        }
    }
    cout << cnt << endl;
    return 0;
}
```

U492929 卖苹果的最大利润

```
#include <iostream>

using namespace std;

int a[105];

int main()
{
    int m, x, n;
```

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

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

    cout << pos << " " << (maxx-x)*m << endl;
    return 0;
}
```

排序和翻转

头文件: #include<algorithm>

对 a[l]~a[r] 从小到大排序: sort(a+l, a+r+1);

对 a[1]~a[n] 从小到大排序: sort(a+1, a+n+1);

对 a[0]~a[n-1] 从小到大排序: sort(a, a+n);

如何从大到小排序呢? -> 可以先从小到大排序, 然后翻转

对 a[l]~a[r] 翻转: reverse(a+l, a+r+1);

U493756 排序

```
#include <iostream>
#include <algorithm>

using namespace std;

int a[15];

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

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

U493776 第 k 大数

```
#include <iostream>
#include <algorithm>

using namespace std;

int a[1005];

int main()
{
    int n, k;
    cin >> n >> k;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }
    sort(a+1, a+n+1);
    cout << a[n-k+1] << endl;
    return 0;
}
```

U477522 第 k 大 + 第 k 小

```
#include <iostream>
#include <algorithm>

using namespace std;

int a[100005];

int main()
{
    int n, k;
    cin >> n >> k;
    for (int i = 1; i <= n; i++) {
        cin >> a[i];
    }
    sort(a+1, a+n+1);
    cout << a[k] + a[n-k+1] << endl;
    return 0;
}
```

U493777 选橘子

```cpp
#include <iostream>
#include <algorithm>

using namespace std;

int a[205];

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

    int sum = 0;
    for (int i = 2; i <= n-1; i++) {
        sum += a[i];
    }
    printf("%.1lf\n", 1.0*sum/(n-2));
    for (int i = 2; i <= n-1; i++) {
        cout << a[i] << " ";
    }
    return 0;
}
```

U493754 发礼物

```cpp
#include <iostream>
#include <algorithm>

using namespace std;

int a[105];

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

    for (int i = 1; i <= n; i++) {
        while (true) {
            if (a[i]>10 && a[i]%4==0) {
                break;
```

```
            }
            else {
                a[i]++;
            }
        }
    }

    sort(a+1, a+n+1);
    reverse(a+1, a+n+1);

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