一维数组排序

人员

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作业检查

上周作业链接: https://www.luogu.com.cn/contest/224348

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报名 编辑比赛

题目数 8 | 报名人数 23

比赛说明 题目列表 排行榜

名次	参赛者	总分	A	B	C	D	E	F	G	H
#1	窦杨子	800 (10.24h)	100 (39.97min)	100 (41.68min)	100 (43.12min)	100 (1.25h)	100 (49.75min)	100 (58.30min)	100 (2.54h)	100 (2.58h)
#2	张瑞熙	800 (11.79h)	100 (45.18min)	100 (50.18min)	100 (51.93min)	100 (1.39h)	100 (1.10h)	100 (1.47h)	100 (2.64h)	100 (2.73h)
#3	王伯安	800 (14.44h)	100 (44.95min)	100 (46.35min)	100 (47.30min)	100 (1.27h)	100 (1.17h)	100 (1.57h)	100 (5.47h)	100 (2.65h)
#4	刘逸	800 (14.93h)	100 (2.59h)	100 (57.10min)	100 (59.12min)	100 (1.27h)	100 (1.11h)	100 (2.57h)	100 (2.81h)	100 (2.65h)
#5	周尚融	800 (15.58h)	100 (45.18min)	100 (47.03min)	100 (48.18min)	100 (1.29h)	100 (2.52h)	100 (2.57h)	100 (4.25h)	100 (2.60h)
#6	孙以诺	800 (15.78h)	100 (56.08min)	100 (1.12h)	100 (2.69h)	100 (1.29h)	100 (1.40h)	100 (2.59h)	100 (3.08h)	100 (2.67h)
#7	孙鹤轩	800 (16.94h)	100 (45.55min)	100 (48.58min)	100 (49.80min)	100 (1.34h)	100 (2.60h)	100 (2.80h)	100 (4.96h)	100 (2.84h)
#8	管怡达	800 (23.49h)	100 (2.76h)	100 (2.79h)	100 (2.82h)	100 (2.86h)	100 (2.95h)	100 (3.44h)	100 (2.68h)	100 (3.19h)
#9	于马禾祥	800 (2.18d)	100 (44.52min)	100 (56.72min)	100 (58.32min)	100 (1.27h)	100 (2.60h)	100 (2.64h)	100 (1.68d)	100 (2.74h)
#10	张和嘉	800 (3.80d)	100 (39.33min)	100 (40.42min)	100 (41.27min)	100 (44.08min)	100 (47.28min)	100 (56.42min)	100 (1.83d)	100 (1.78d)
#11	唐敬瑶	800 (24.86d)	100 (41.23min)	100 (43.37min)	100 (46.55min)	100 (6.22d)	100 (6.30d)	100 (1.46h)	100 (6.31d)	100 (6.29d)
#12	王子涵	784 (2.25d)	100 (41.53min)	100 (43.98min)	100 (45.43min)	100 (1.28h)	100 (1.27h)	100 (1.13h)	84 (1.01d)	100 (23.88h)
#13	张祐嘉	784 (3.33d)	100 (42.42min)	100 (44.88min)	100 (46.02min)	100 (1.32h)	100 (55.22min)	100 (1.21h)	84 (1.69d)	100 (1.40d)
#14	胡瑾泽	784 (4.11d)	100 (45.93min)	100 (47.95min)	100 (50.78min)	100 (1.39h)	100 (1.30h)	100 (20.56h)	84 (2.17d)	100 (20.77h)
#15	王梓钧	784 (5.63d)	100 (1.08d)	100 (44.58min)	100 (56.55min)	100 (1.27h)	100 (1.08d)	100 (1.11d)	84 (1.12d)	100 (1.11d)
#16	王奕辰	700 (10.13h)	100 (47.63min)	100 (48.80min)	100 (50.18min)	100 (2.59h)	100 (58.48min)	100 (1.29h)		100 (2.83h)
#17	刘维重	684 (7.03h)	100 (42.17min)	100 (44.12min)	100 (45.47min)	100 (1.27h)	100 (54.47min)	100 (1.21h)	84 (1.45h)	
#18	彭祎航	600 (6.79h)	100 (52.57min)	100 (54.33min)	100 (55.55min)	100 (1.27h)	100 (1.37h)	100 (1.45h)		

作业

https://www.luogu.com.cn/contest/226088 (课上讲了 A,C,D,E,F,G,H 这些题目, 课后作业为 I 题, B 题不要求同学们必须完成, 感兴趣的同学可以进行尝试)

课堂表现

今天讲了一维数组的sort排序, 同学们整体听讲都比较认真, 这节课的纪律也比以前的课有进步, 希望同学们继续保持。

课堂内容

U493770 标准零件的数量

```
#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 c; cin >> c;

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

```cpp
#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

```cpp
#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

```cpp
#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

```
#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;
}
```

U493757 数的排序

```
#include <iostream>

using namespace std;

int a[15];

int main()
{
    int n;
```

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

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

        a[i]=sum;
    }

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

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