结构体排序

人员

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作业检查

韩承睿 已完成

牟茗 已完成

刘嘉航 已完成

辛帅辰 已完成

高健桓 已完成

李翰如 已完成

方俊喆 上周请假

崔吉诺 已完成

刘祺 已完成

夏硕承 已完成

秦显森 未打卡

齐振玮 已完成

谢亚锴 已完成

王静嘉 未打卡

牛同泽 未打卡

徐浩然 未打卡

刘轩铜 已完成

作业

必做：**东方博宜 1315. 遥控飞机争夺赛** 和 **东方博宜 1730. 购买贺年卡**

选做：**东方博宜 1740. 统计每个数出现的次数**

下周默写：**东方博宜 1315. 遥控飞机争夺赛** 和 **东方博宜 1490. 坐标排序**

课堂表现

有一部分同学课上有些懒惰，不愿意自己独立思考，只想等着老师讲解，希望这部分同学以后提高自己独立思考的积极性。

今天课上做题比较快比较好的同学有 牟茗、谢亚锴、辛帅辰 三位同学，向这三位同学提出表扬！

课堂内容

noi 1.10 09:明明的随机数

排序，后面的如果跟前面的不同，就输出，从而实现 排序+去重 的功能

```
#include <iostream>

using namespace std;

const int maxn = 100 + 5;
int w[maxn];

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

  for (int i = 1; i <= n; ++i) {
    for (int j = i+1; j <= n; ++j) {
      if (w[i] > w[j]) {
        int t = w[i];
        w[i] = w[j];
        w[j] = t;
      }
    }
  }

  int cnt = 1;
  for (int i = 2; i <= n; ++i) {
    if (w[i] != w[i-1]) {
      cnt++;
    }
  }

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

noi 1.10 10:单词排序

```
#include <iostream>
#include <string>

using namespace std;

string str[105];

int main()
{
    int n = 1;
    string s;
    while (cin >> s) {
        str[n] = s;
        n++;
    }
    n--;
    for (int i = 1; i <= n; i++) {
        for (int j = i+1; j <= n; j++) {
            if (str[j] < str[i]) {
                s = str[i];
                str[i] = str[j];
                str[j] = s;
            }
        }
    }

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

结构体排序

```
#include <iostream>

using namespace std;

struct student {
    int id;
    int chengji[100];
    double ping;
};

student a[105];
int id[105], yu[105], shu[105], ying[105];
```

```
double ping[105];

int main()
{
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i].id;
        int sum = 0;
        for (int j = 0; j < 100; j++) {
            cin >> a[i].chengji[j];
            sum += a[i].chengji[j];
        }
        a[i].ping = sum / 100.0;
    }

    for (int i = 1; i <= n; i ++) {
        // a[i].chengji[0], a[i].chengji[1], ..., a[i].chengji[99]
        for (int j = 0; j <= 99; j++) {
            for (int k = j+1; k <= 99; k++) {
                if (a[i].chengji[k] < a[i].chengji[j]) {
                    int t = a[i].chengji[j];
                    a[i].chengji[j] = a[i].chengji[k];
                    a[i].chengji[k] = t;
                }
            }
        }
    }

    for (int i = 1; i <= n; i++) {
        for (int j = i+1; j <= n; j++) {
            bool flag1 = false, flag2 = false;
            if (a[j].ping<a[i].ping) {
                flag1 = true;
            }
            if (a[i].ping==a[j].ping && a[j].id<a[i].id) {
                flag2 = true;
            }
            if (flag1 || flag2) {  // 结构体
                student t = a[i];
                a[i] = a[j];
                a[j] = t;
            }
        }
    }
    return 0;
}
```

东方博宜 1490. 坐标排序

```
#include <iostream>
#include <string>

using namespace std;

struct dian {
    int x, y;
};

dian a[10005];

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

    for (int i = 1; i <= n; i++) {
        for (int j = i+1; j <= n; j++) {
            if ((a[j].x<a[i].x) || (a[j].x==a[i].x&&a[j].y<a[i].y)) {
                dian t = a[i];
                a[i] = a[j];
                a[j] = t;
            }
        }
    }

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

东方博宜 1315. 遥控飞机争夺赛

```
#include <iostream>
#include <string>

using namespace std;

struct student {
    int id;
    int chengji[6];
    double ping;
};

student a[105];
```

```
int main()
{
    int n;
    cin >> n;
    for (int i = 1; i <= n; i++) {
        cin >> a[i].id;
        for (int j = 1; j <= 5; j++) {
            cin >> a[i].chengji[j];
        }
    }

    for (int i = 1; i <= n; i++) {

        // 把第 i 个人的成绩进行一下排序
        for (int j = 1; j <= 5; j++) {
            for (int k = j+1; k <= 5; k++) {
                if (a[i].chengji[k] < a[i].chengji[j]) {
                    int t = a[i].chengji[k];
                    a[i].chengji[k] = a[i].chengji[j];
                    a[i].chengji[j] = t;
                }
            }
        }

        a[i].ping = (a[i].chengji[2] + a[i].chengji[3] + a[i].chengji[4]) / 3.0;
    }

    for (int i = 1; i <= n; i++) {
        for (int j = i+1; j <= n; j++) {
            if (a[j].ping > a[i].ping) {
                student t = a[i];
                a[i] = a[j];
                a[j] = t;
            }
        }
    }

    for (int i = 1; i <= 3; i++) {
        printf("%d %.3f\n", a[i].id, a[i].ping);
    }
    return 0;
}
```