

# max, min, swap 方法及 分支练习

## 人员

管怡达、王伯安、周尚融、胡瑾泽、王子涵、于马禾祥、张和嘉、孙鹤轩、张原宁、潘奕成、王奕辰、唐敬瑶、刘逸、窦杨子、孙以诺、王梓钧 到课

## 作业检查

上周作业链接: <https://www.luogu.com.cn/contest/218720>

2024-1207周六15:30

报名

编辑比赛

题目数

15

报名人数

20

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	I	J	K
#1	王伯安	1500 (23.28h)	100 (47.82min)	100 (52.52min)	100 (54.40min)	100 (56.72min)	100 (59.83min)	100 (1.06h)	100 (1.12h)	100 (1.82h)	100 (2.10h)	100 (1.93h)	100 (1.96h)
#2	管怡达	1500 (1.01d)	100 (47.88min)	100 (1.43h)	100 (1.49h)	100 (1.28h)	100 (1.04h)	100 (1.12h)	100 (1.61h)	100 (1.78h)	100 (1.86h)	100 (1.82h)	100 (1.88h)
#3	窦杨子	1500 (1.03d)	100 (49.37min)	100 (51.20min)	100 (54.18min)	100 (58.83min)	100 (1.02h)	100 (1.11h)	100 (1.25h)	100 (1.82h)	100 (2.38h)	100 (1.94h)	100 (1.98h)
#4	张和嘉	1500 (1.07d)	100 (47.48min)	100 (50.18min)	100 (1.32h)	100 (58.48min)	100 (1.08h)	100 (1.64h)	100 (1.27h)	100 (1.83h)	100 (2.33h)	100 (1.97h)	100 (2.02h)
#5	张祐嘉	1500 (1.14d)	100 (49.92min)	100 (1.41h)	100 (1.14h)	100 (1.25h)	100 (1.48h)	100 (1.62h)	100 (1.76h)	100 (1.81h)	100 (1.86h)	100 (2.18h)	100 (1.99h)
#6	孙鹤轩	1500 (1.21d)	100 (50.00min)	100 (58.75min)	100 (1.96h)	100 (1.26h)	100 (1.30h)	100 (1.77h)	100 (1.89h)	100 (2.07h)	100 (2.25h)	100 (2.32h)	100 (2.36h)
#7	周尚融	1500 (1.22d)	100 (50.72min)	100 (2.76h)	100 (59.60min)	100 (1.05h)	100 (1.11h)	100 (1.45h)	100 (2.70h)	100 (2.05h)	100 (2.00h)	100 (2.18h)	100 (2.28h)
#8	张瑞熙	1500 (1.45d)	100 (57.93min)	100 (2.85h)	100 (2.94h)	100 (1.12h)	100 (3.12h)	100 (1.24h)	100 (3.34h)	100 (1.79h)	100 (1.84h)	100 (3.04h)	100 (1.92h)
#9	王奕辰	1500 (1.63d)	100 (6.21h)	100 (56.08min)	100 (1.03h)	100 (1.10h)	100 (1.15h)	100 (1.29h)	100 (1.71h)	100 (1.83h)	100 (2.12h)	100 (2.29h)	100 (1.97h)
#10	于马禾祥	1500 (2.19d)	100 (48.60min)	100 (5.50h)	100 (2.54h)	100 (4.64h)	100 (2.38h)	100 (1.64h)	100 (4.81h)	100 (4.89h)	100 (2.75h)	100 (4.97h)	100 (2.22h)
#11	孙以诺	1500 (2.37d)	100 (49.72min)	100 (6.19h)	100 (4.66h)	100 (1.26h)	100 (1.06h)	100 (5.99h)	100 (6.23h)	100 (4.17h)	100 (1.89h)	100 (4.43h)	100 (1.93h)
#12	刘逸	1500 (3.26d)	100 (48.17min)	100 (1.63h)	100 (2.70h)	100 (1.14h)	100 (1.21h)	100 (1.30h)	100 (1.51h)	100 (1.92h)	100 (2.34h)	100 (2.09h)	100 (2.16h)
#13	王梓钧	1500 (7.04d)	100 (5.03h)	100 (57.85min)	100 (5.21h)	100 (5.28h)	100 (5.38h)	100 (5.87h)	100 (6.02h)	100 (18.15h)	100 (18.62h)	100 (18.71h)	100 (18.74h)
#14	胡瑾泽	1500 (10.51d)	100 (50.08min)	100 (54.82min)	100 (3.18d)	100 (1.17h)	100 (3.17d)	100 (3.17d)	100 (2.71h)	100 (1.91h)	100 (1.97h)	100 (2.39h)	100 (1.99h)
#15	唐敬瑶	1400 (24.86d)	100 (51.08min)	100 (56.63min)	100 (1.44h)	100 (6.27d)	100 (1.23h)	100 (1.77h)	100 (6.28d)	100 (6.29d)	100 (6.29d)	100 (6.30d)	100 (6.30d)
#16	潘奕成	1100 (18.10d)	100 (55.83min)	100 (1.04h)	18 (1.77h)	100 (1.37h)	100 (2.13d)	100 (2.14d)	100 (2.15d)	100 (1.85h)	78 (2.03h)	80 (2.73d)	100 (2.15d)
#17	王子涵	1032 (20.92h)	100 (53.70min)	100 (57.18min)		100 (1.19h)	94 (1.24h)	18 (1.60h)	80 (2.43h)	100 (1.81h)	100 (2.09h)	40 (1.96h)	100 (2.01h)
#18	zhaoyao123	1024 (24.86d)	100 (1.17d)	100 (1.18d)	100 (5.26d)	100 (5.26d)	100 (5.27d)		100 (6.00d)		100 (6.00d)	100 (6.86d)	100 (6.00d)
#19	张原宁	799 (3.07d)	38 (49.63min)		100 (1.07h)	100 (57.00min)	52 (20.47h)	100 (20.71h)	9 (20.97h)	100 (1.89h)		100 (2.17h)	100 (2.38h)

# 作业

<https://www.luogu.com.cn/contest/219891>

## 课堂表现

有个别同学课上只顾着做题，不注意听讲，被老师批评了，以后上课一定要注意听讲。

## 课堂内容

### U512339 是不是正方形

```
#include <iostream>
#include <iomanip>

using namespace std;

int main()
{
    int a, b;
    cin >> a >> b;
    if (a == b) {
        cout << "Y" << endl;
    } else {
        cout << "N" << endl;
    }
    cout << a*b << endl;
    return 0;
}
```

### U512394 判断水仙花数

```
#include <iostream>

using namespace std;

int main()
{
    int n;
    cin >> n;
    int a = n/100, b = (n/10)%10, c = n%10;
    if (a*a*a + b*b*b + c*c*c == n) {
        cout << "Yes";
    } else {
        cout << "No";
    }
    return 0;
}
```

## max, min, swap 方法

```
max 方法：直接求 2 个数的最大值
cin >> a >> b;
cout << max(a,b) << endl;
3个数求最大值：max(max(a,b), c)
4个数求最大值：max(max(a,b), max(c,d))

min 方法：直接求 2 个数的最小值
cout << min(a,b) << endl;
cout << min(min(a,b),c) << endl;

swap 方法：交换 2 个变量的值
int a = 5, b = 9;
swap(a, b);
```

## U512341 闯关大冒险?

```
#include <iostream>

using namespace std;

int main()
{
    int n;
    cin >> n;
    int a = n/1000, b = (n/100)%10, c = (n/10)%10, d = n%10;

    if (a>=b && a>=c && a>=d) {
        cout << a << endl;
    }
    else if (b>=c && b>=d) {
        cout << b << endl;
    }
    else if (c>=d) {
        cout << c << endl;
    }
    else {
        cout << d << endl;
    }

    return 0;
}
```

```
#include <iostream>
#include <iomanip>
```

```
using namespace std;

int main()
{
    int n;
    cin >> n;
    int a = (n/1000)%10, b = (n/100)%10, c = (n/10)%10, d = n%10;
    int t = max(max(a,b), max(c,d));
    cout << t << endl;
    return 0;
}
```

## U514671 三七二二数

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

using namespace std;

int main()
{
    int x;
    cin >> x;
    if ((x%3==0 || x%7==0) && x%21!=0) {
        cout << "Yes" << endl;
    } else {
        cout << "No" << endl;
    }
    return 0;
}
```

## B2041 收集瓶盖赢大奖

```
#include <iostream>
using namespace std;
int main(){
    int a,b;
    cin>>a>>b;
    if (a>=10 || b>=20)
    {
        cout<<1;
    }
    else
    {
        cout<<0;
    }
    return 0;
}
```

## B2052 简单计算器

```
#include <iostream>

using namespace std;

int main()
{
    int a, b;
    char c;
    cin >> a >> b >> c;
    if (c == '+') {
        cout << a+b << endl;
    } else if (c == '-') {
        cout << a-b << endl;
    } else if (c == '*') {
        cout << a*b << endl;
    } else if (c == '/') {
        if (b != 0) {
            cout << a/b << endl;
        } else {
            cout << "Divided by zero!" << endl;
        }
    } else {
        cout << "Invalid operator!" << endl;
    }
    return 0;
}
```

## U515050 打牌

```
// 方法一
#include<iostream>
using namespace std;
int main()
{
    int a,b;
    cin>>a>>b;
    if(a==1 && b!=1)
    {
        cout<<"Alice";
    }
    else if(b==1 && a!=1)
    {
        cout<<"Bob";
    }
    else if(a>b)
    {
        cout<<"Alice";
    }
}
```

```

    else if(a<b)
    {
        cout<<"Bob";
    }
    else
    {
        cout<<"Draw";
    }
    return 0;
}

```

```

// 方法二
#include <iostream>
using namespace std;
int main()
{
    int a, b; cin >> a >> b;
    if (a == 1) a = 8;
    if (b == 1) b = 8;

    if (a == b) cout << "Draw" << endl;
    else if (a > b) cout << "Alice" << endl;
    else cout << "Bob" << endl;
    return 0;
}

```

### U515051 出游

$n$  人

$\begin{cases} 1. \text{ } a \text{ 元 } 1 \text{ 张} \\ 2. \text{ } b \text{ 元 } m \text{ 张} \end{cases} \rightarrow m \text{ 张}; a \cdot m$

1.  $a \cdot m \leq b \rightarrow n \cdot a$

2.  $a \cdot m > b \rightarrow$

$\frac{n}{m}$  份  $\rightarrow \frac{n}{m} \cdot b$

$n \% m \begin{cases} 1. \text{ } n \% m \cdot a \\ 2. \text{ } b \end{cases}$

## U512329 最大数和最小数的差

```
#include <iostream>
#include <iomanip>

using namespace std;

int main()
{
    int n;
    cin >> n;
    int a = n/100, b = (n/10)%10, c = n%10;
    int maxx = max(max(a,b),c), minn = min(min(a,b),c);
    cout << maxx - minn << endl;
    return 0;
}
```

## U512331 晶晶的补习班

```
#include <iostream>
#include <iomanip>

using namespace std;

int main()
{
    int a, b, c, d, e, f, g;
    cin >> a >> b >> c >> d >> e >> f >> g;
    double aver = (a+b+c+d+e+f+g) / 7.0;
    int x = max(a, b);
    x = max(x, c);
    x = max(x, d);
    x = max(x, e);
    x = max(x, f);
    x = max(x, g);

    int y = min(a, b);
    y = min(y, c);
    y = min(y, d);
    y = min(y, e);
    y = min(y, f);
    y = min(y, g);

    cout << fixed << setprecision(1) << aver << " " << x << " " << y << endl;
    return 0;
}
```

## B2042 判断一个数能否同时被 3 和 5 整除

```
#include <iostream>
#include <iomanip>
using namespace std;
int main(){
    int n;
    cin>>n;
    if (n%3==0 && n%5==0)
    {
        cout<<"YES";
    }
    else
    {
        cout<<"NO";
    }
    return 0;
}
```