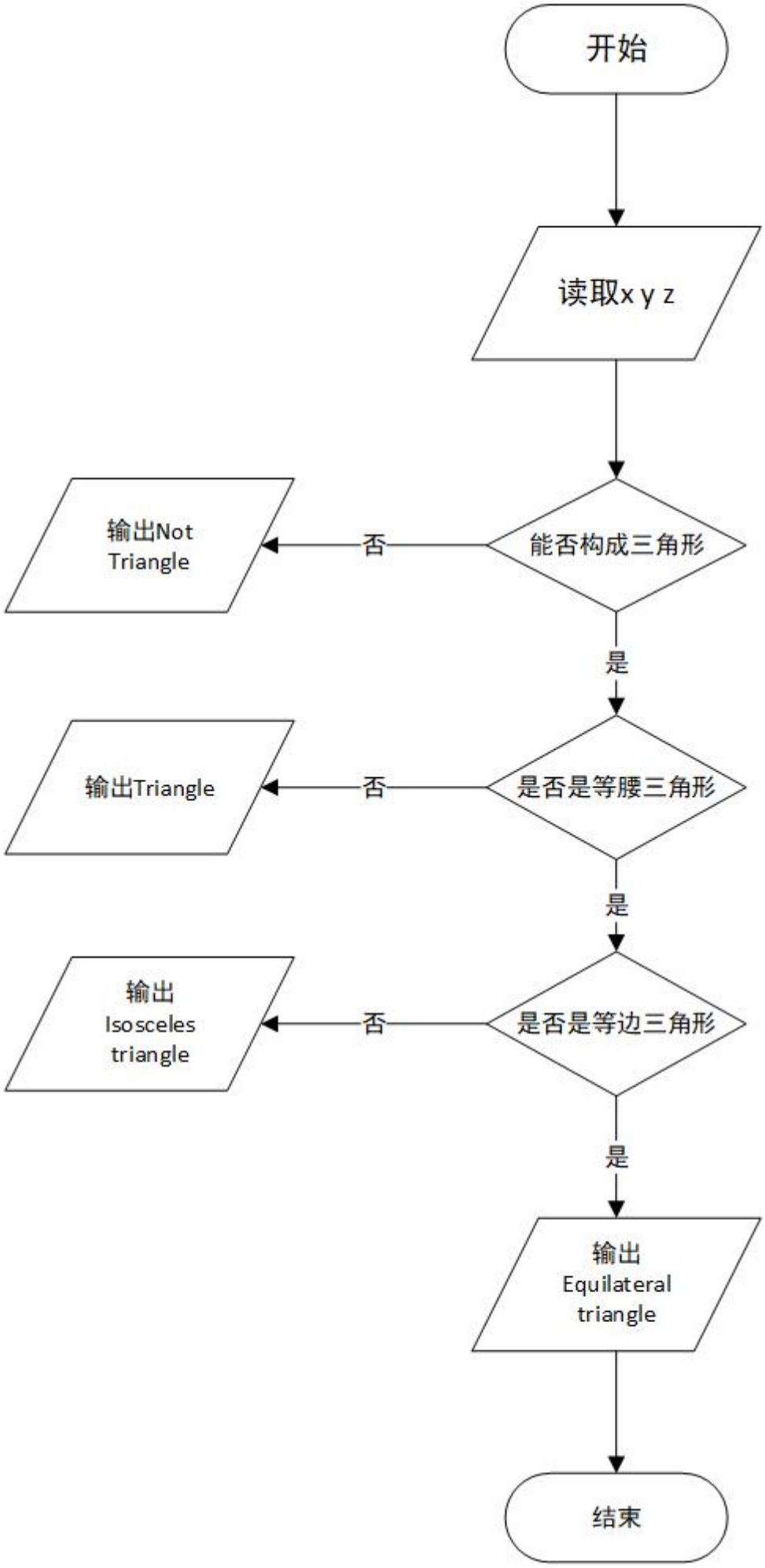
第五次作业

实验目的：判断三角形、有理数计算、数字分离

实验环境：Windows11 MSVC

第一题：

1. 流程图


开始
读取x y z
能否构成三角形
否
输出Not Triangle
是
是否是等腰三角形
否
输出Triangle
是
是否是等边三角形
否
输出 Isosceles triangle
是
输出 Equilateral triangle
结束

2. 代码

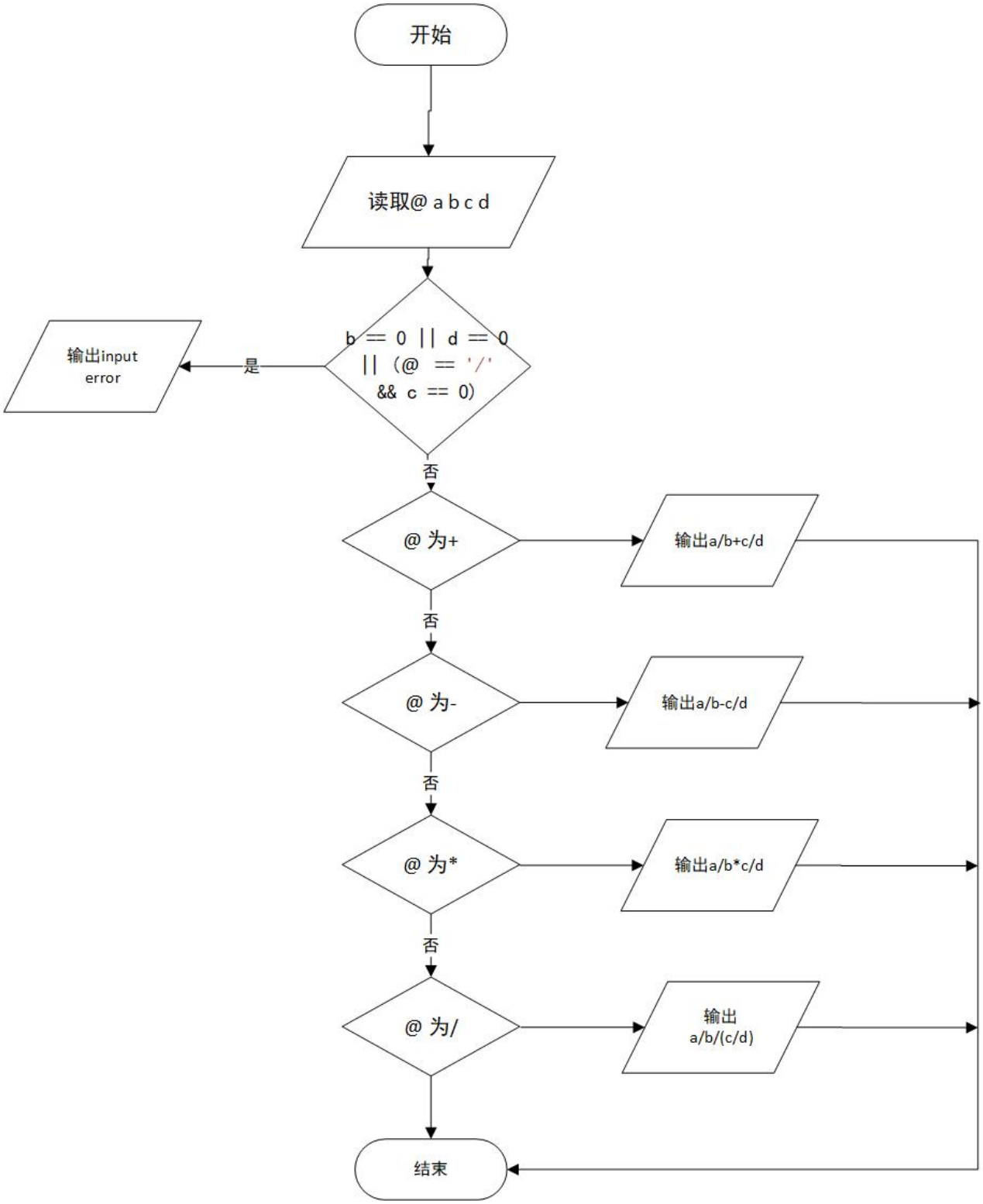
```c
#include <stdio.h>
#pragma warning(disable: 4996)
int main() {
    int x, y, z;
    scanf("%d %d %d", &x, &y, &z);
    if (x+y>z && x+z>y && y+z>x) {
        if (x == y || y == z || x == z) {
            if (x == y == z) {
                printf("Equilateral triangle");
            }
            else {
                printf("Isosceles triangle");
            }
        }
        else {
            printf("Triangle");
        }
    }
    else {
        printf("Not triangle");
    }
    return 0;
}
```

3. 结果

```
4 4 5
Isosceles triangle
```

第二题：

1. 流程

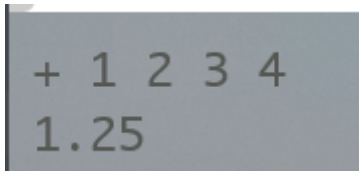


2. 代码

```
#include <stdio.h>
#pragma warning(disable: 4996)
int main() {
    int a,b,c,d;
    char at;
    scanf("%c %d %d %d %d", &at, &a, &b, &c,&d);
    if (b == 0 || d == 0 || (at == '/' && c == 0)) {
        printf("input error");
```

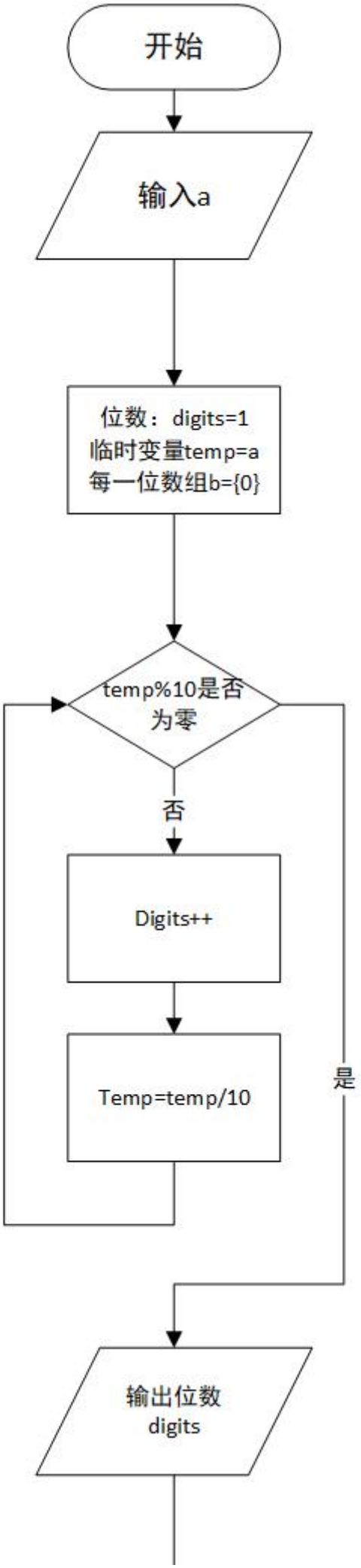
```
    }
    else {
        switch (at)
        {
        case '+':
            printf("%.2f",a / (float)b + c / (float)d);
            break;
        case '-':
            printf("%.2f", a / (float)b - c / (float)d);
            break;
        case '*':
            printf("%.2f", a / (float)b * c / (float)d);
            break;
        case '/':
            printf("%.2f", a / (float)b / (c / (float)d));
            break;
        }
    }

    return 0;
}
```

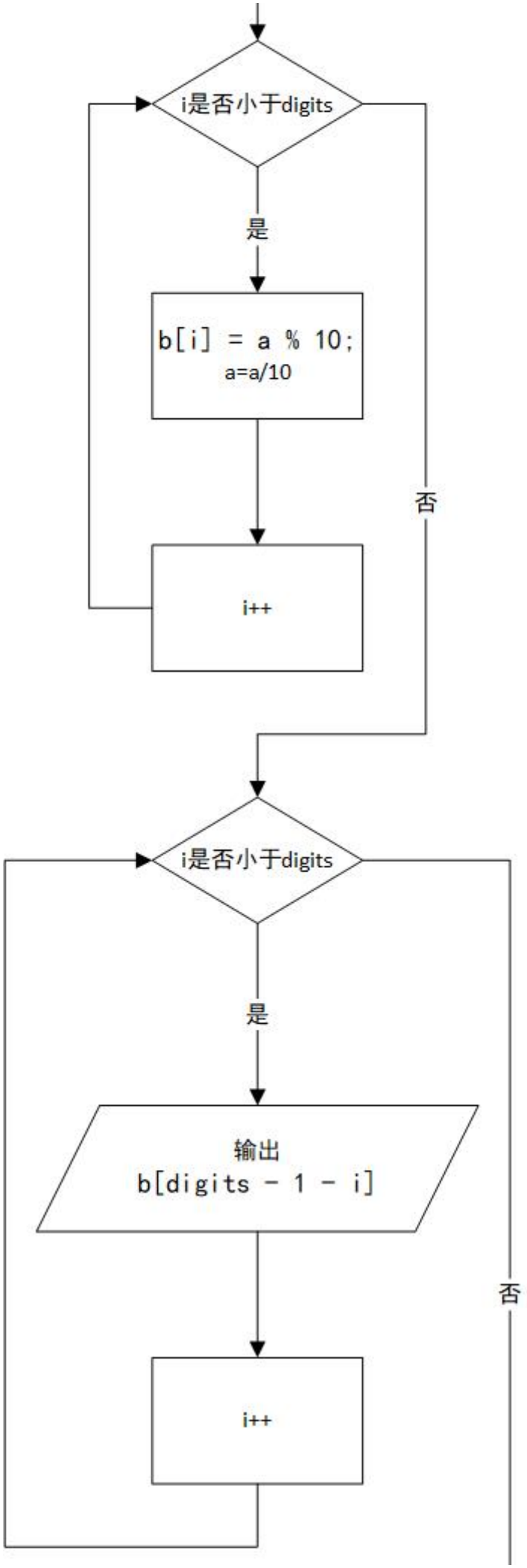
3. 结果

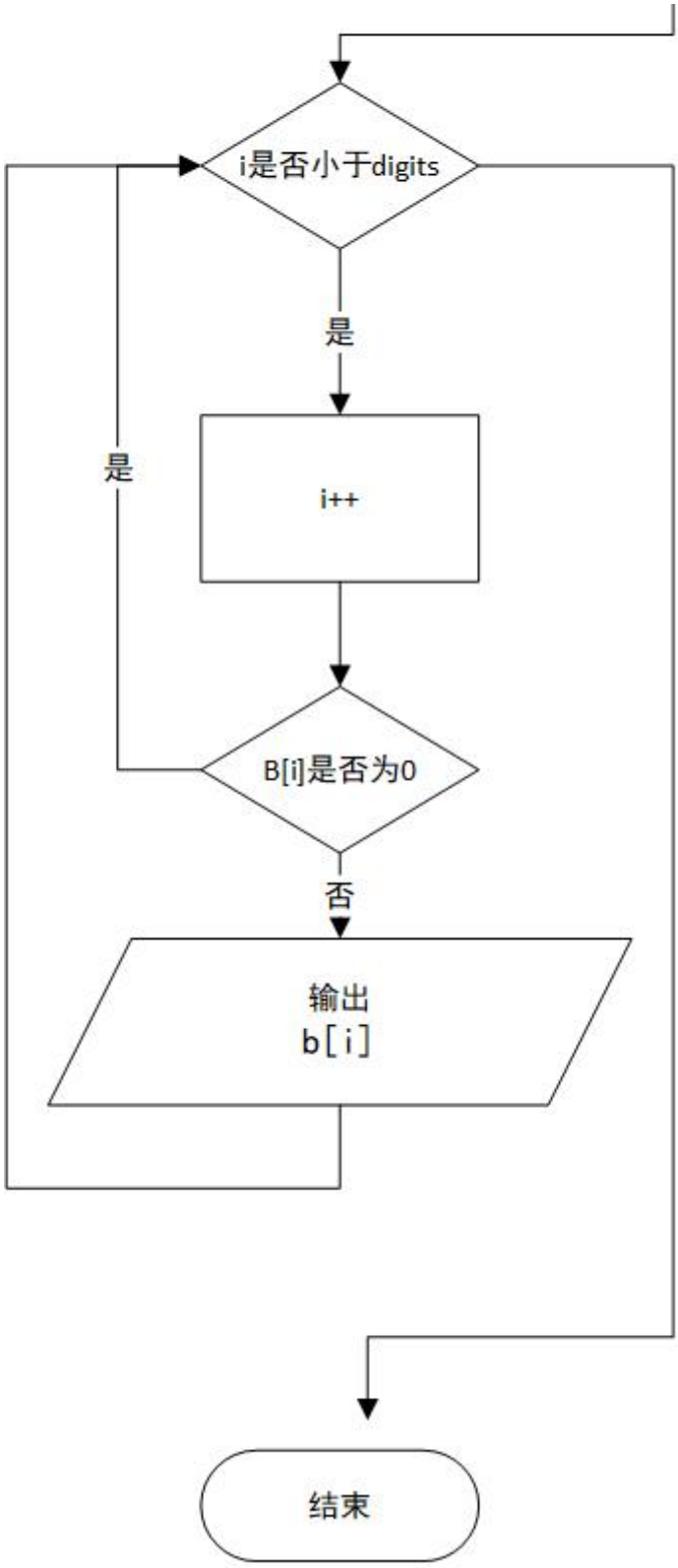


第三题：

1. 流程图


开始
输入a
位数：digits=1
临时变量temp=a
每一位数组b={0}
temp%10是否为零
否
Digits++
Temp=temp/10
是
输出位数
digits


i是否小于digits
是
b[i] = a % 10;
a=a/10
i++
否
i是否小于digits
是
输出
b[digits - 1 - i]
i++
否



2. 代码

```
#include <stdio.h>
#pragma warning(disable: 4996)
int main() {
    int a,digits=1;
    int b[6] = { 0 };
    printf("please input an integer: ");
    scanf("%d", &a);
```

```
    int temp = a;
    printf("\nyour input:%d \n", a);
    while (temp / 10 != 0) {
        digits++;
        temp /= 10;
    }
    printf("num of digits:%d \n", digits);
    printf("each of digits: ");
    for (int i = 0;i < digits;i++) {
        b[i] = a % 10;
        a /= 10;
    }
    for (int i = 0;i < digits;i++) {
        if(i!=digits-1)printf("%d, ", b[digits - 1 - i]);
        else { printf("%d", b[digits - 1 - i]); }
    }
    printf("\n");
    printf("reversed order:");
    for (int i = 0;i<digits;i++) {
        if (b[i] != 0) {
            if(i!=digits-1)printf("%d, ", b[i]);
            else { printf("%d", b[i]); }
        }
    }
    return 0;
}
```

3. 结果

```
please input an integer: 36950

your input:36950
num of digits:5
each of digits: 3, 6, 9, 5, 0
reversed order:5, 9, 6, 3
```