第十四次作业

第一题

```c
#include <stdio.h>
#include <stdlib.h>
#pragma warning(disable:4996)
struct birthday
{
    int year;
    int month;
    int day;
};
struct student {
    int id;
    char name[30];
    char sex[10];
    struct birthday birth;
    float score;
};
float average(student s[]);
void sort(student s[]);
void save(student s[]);
student find(int id);
int main() {
    struct student s[10];
    for (int i = 0; i < 10; i++) {
        scanf("%d %s %s %d %d %d %f", &s[i].id, s[i].name,
s[i].sex, &s[i].birth.year, &s[i].birth.month, &s[i].birth.day,
&s[i].score);

    }
    float avg = average(s);
    printf("平均成绩：%.2f\n", avg);
    save(s);
    int id;
    printf("请输入学号：");
```

```
        scanf("%d", &id);
        student ans = find(id);
        printf("ID:%d 姓名：%s   性别：%s   出生日期：%d 年%d 月%d 日   成
绩：%.2f\n\n", ans.id, ans.name, ans.sex, ans.birth.year,
ans.birth.month, ans.birth.day, ans.score);
        sort(s);
        printf("成绩排序：\n");
        for (int i = 0; i < 10; i++) {
            printf("姓名：%s   成绩：%.2f   排名：%d   \n", s[i].name,
s[i].score, i + 1);
        }
}

float average(student s[])
{
        float sum = 0;
        for (int i = 0; i < 10; i++) {
            sum += s[i].score;
        }
        sum /= 10;
        return sum;
}

void sort(student s[])
{
        for (int i = 0; i < 10; i++) {
            float min = s[i].score;
            int k = i;
            for (int j = i; j < 10; j++) {
                if (s[j].score >= min) {
                    min = s[j].score;
                    k = j;
                }
            }
            student t = s[i];
            s[i] = s[k];
            s[k] = t;
        }

}

void save(student s[])
{
```

```c
    FILE* fp;
    fp=fopen("student.txt", "w");
    for (int i = 0; i < 10; i++) {
        fprintf(fp, "%d %s %s %d %d %d %.2f\n", s[i].id,
s[i].name, s[i].sex, s[i].birth.year, s[i].birth.month,
s[i].birth.day, s[i].score);
    }
    fclose(fp);
}

student find(int id)
{
    FILE* fp;
    fp = fopen("student.txt", "r");
    student ans;
    for (int i = 0; i < 10; i++) {
        fscanf(fp, "%d %s %s %d %d %d %f", &ans.id, ans.name,
ans.sex, &ans.birth.year, &ans.birth.month, &ans.birth.day,
&ans.score);
        if (ans.id == id)break;
    }
    fclose(fp);
    return ans;
}
```

```
1 alice female 2003 1 20 78
2 bob male 2004 11 1 95.5
3 carol female 2002 12 3 88.8
4 dave male 2002 2 3 78.7
5 eve male 2003 6 8 89.5
6 francis male 2003 4 6 85.4
7 grace male 2004 3 4 67.6
8 hans male 2003 1 2 60
9 isabella female 2005 4 5 80
10 jason male 2002 7 8 90
平均成绩： 81.35
请输入学号:4
ID:4 姓名：dave   性别：male   出生日期：2002年2月3日   成绩：78.70

成绩排序：
姓名:bob    成绩:95.50   排名:1
姓名:jason   成绩:90.00   排名:2
姓名:eve    成绩:89.50   排名:3
姓名:carol   成绩:88.80   排名:4
姓名:francis   成绩:85.40   排名:5
姓名:isabella   成绩:80.00   排名:6
姓名:dave    成绩:78.70   排名:7
姓名:alice   成绩:78.00   排名:8
姓名:grace   成绩:67.60   排名:9
姓名:hans    成绩:60.00   排名:10
```

思路：

声明日期结构体与学生结构体，输入十个学生的信息，并求平均，然后将信息保存在student.txt中，之后输入学号，打开文件遍历查找，返回对应的学生信息，最后按照成绩排序输出。

第二题

```c
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <cstring>
4  #include <ctype.h>
5  #pragma warning(disable:4996)
6  int main() {
7      char* str = (char*)malloc(100 * sizeof(char));
8      scanf("%s", str);
9      int len = str ? strlen(str) : 0;
10     for (int i = 0; i < len - 1; i++) {
```

```c
        if (islower(str[i])) {
            str[i] = toupper(str[i]);
        }
    }
    FILE* f = fopen("upper.txt", "w");
    for (int i = 0; i < len - 1; i++) {
        fputc(str[i], f);
    }
    fclose(f);
    FILE* fp = fopen("upper.txt", "r");
    char* s = (char*)malloc(100 * sizeof(char));
    fscanf(fp, "%s", s);
    printf("%s\n", s);
    fclose(fp);
}
```

```
asdfFFAs#
ASDFFFAS
```

第三题

```c
#include <stdio.h>
#include <stdlib.h>
#include <cstring>
#pragma warning(disable:4996)
int main(int argc,char* argv[]) {
    if (argc != 2)exit(-1);
    FILE* f = fopen(argv[1], "r");
    char* str = (char*)malloc(81 * sizeof(char));
    fgets(str, 81, f);
    printf("%s\n长度：%d", str, strlen(str));
    fclose(f);
}
/*
* 执行命令
*    > Exp1-14.exe test.txt
```

```
16   * test.txt:
17   *   abcd  efg  s
18   */
```

```
abcd  efg  s
长度：12
```