# Assignment1 Report

姓名：Yitong WANG(王奕童) 11910104@mail.sustech.edu.cn

学号：11910104

实验课时段：周五5-6节

实验课教师：Yun SHEN(沈昀) sheny@mail.sustech.edu.cn

实验课SA:

- Yining TANG(汤怡宁) 11811237@mail.sustech.edu.cn
- Yushan WANG(王宇杉) 11813002@mail.sustech.edu.cn

## Q1

- Solution 1:

```
ps[0] = 'E', *ps
```

- Solution 2:

```
ps[5] += 2，ps[5]
```

## Q2

```c
#include <stdio.h>
#include <stdlib.h>

struct Student
{
    int number;
    int score;
};

int cmp(const void* a, const void* b){
    struct Student s1 = *(struct Student*)a;
    struct Student s2 = *(struct Student*)b;

    if(s1.score != s2.score){
        return s1.score > s2.score;
    }else {
        return s1.number > s2.number;
    }
}

int main()
{
    int n;
    scanf( _Format: "%d", &n);

    struct Student* students = NULL;
    students = (struct Student*) malloc( _Size: n * sizeof(struct Student));

    for (int i = 0; i < n; ++i) {
        scanf( _Format: "%d %d", &students[i].number, &students[i].score);
    }

    for (int i = 0; i < n; ++i) {
        for (int j = i + 1; j < n; ++j) {
            if(cmp(&students[i], &students[j])){
                struct Student temp = students[i];
                students[i] = students[j];
                students[j] = temp;
```

```c
        }
    }
}

qsort(students, n, sizeof(struct Student), cmp);

printf( _Format: "Output:\n");
for (int i = 0; i < n; ++i) {
    printf( _Format: "%d %d\n", students[i].number, students[i].score);
}

free(students);
students = NULL;

return 0;

}
```

## Q3

```c
#include <stdio.h>
#include <string.h>
struct AGE
{
    int year;
    int month;
    int day;
};
struct STUDENT
{
    char name[20];
    int num;
    struct AGE birthday;
    float score;
};
int main(void)
{
    struct STUDENT student1;
    struct STUDENT *p = NULL;
    p = &student1;
    // ----start----
    // 1. 填空，完成名字赋值(将下划线替换成你的代码)
    strcpy(p->name, _Source: "OS_Bob");
    // 2. 设置出生年月为2001-2-23
    p->birthday.year = 2001;
    p->birthday.month = 2;
    p->birthday.day = 23;


    // 3. 填空，学号和分数设置为12100001和100(将下划线替换成你的代码)
    p->num = 12100001;
    p->score = 100;


    // 4.请将相关信息打印到屏幕上，并截图

    printf( _Format: "name: %s, num: %d, score: %f\n", p->name,p->num, p->score);
    printf( _Format: "birthday: %d-%02d-%02d", p->birthday.year,p->birthday.month,p->birthday.day);

    // ----end----
    return 0;
}
```

# Q4

```c
#include <stdio.h>
#include <stdlib.h>

typedef struct Link {
    int elem;
    struct Link *next;
} link;

int main(){
    link* first0 = NULL;
    first0 = (link*) malloc(sizeof(link));
    first0->elem = 0;
    first0->next = NULL;

    link* head = first0;

    int N;
    scanf( _Format: "%d", &N);
    for (int i = 0; i < N; ++i) {
        int num;
        scanf( _Format: "%d", &num);
```

```c
        link* insert = NULL;
        insert = malloc(sizeof(link));
        insert->next = NULL;
        insert->elem = num;

        insert->next = head->next;
        head->next = insert;
    }

    while(head != NULL){
        printf( _Format: "%d ", head->elem);
        link* temp = head;

        head = head->next;
        free(temp);
        temp = NULL;
    }

    return 0;
}
```