Structure and Functions assignments

Mandatory

1. Refer the code in "student.c". Implement the following requirements.

    a. Change the name member to char * datatype

    b. Add 2 functions below to read and store name and percentage scores from user in student record.

    //pass name address as parameter and read and update name field
    Return updated name
    char *read_update_name(char *name);

    //pass address of percentage as parameter, read and update percentage field of student record. Also return updated percentage
    int read_update_percentage(int *percent);

    c. Check for memory leaks

    d. Specify atleast 5 dataset used for testing

    Check for memory leak.

```c
 1 #include <stdio.h>
 2 #include <stdlib.h>
 3 #include <string.h>
 4 struct student {
 5     char *name;
 6     int percentage;
 7 };
 8 char *read_update_name(char *name) {
 9     char temp[100];
10     printf("Enter student's name: ");
11     fgets(temp, sizeof(temp), stdin);
12     temp[strcspn(temp, "\n")] = '\0';
13     name = (char *)malloc(strlen(temp) + 1);
14     if (name == NULL) {
15         printf("Memory allocation failed for name\n");
16         return NULL;
17     }
18     strcpy(name, temp);
19     return name;
20 }
21 int read_update_percentage(int *percent) {
22     printf("Enter student's percentage: ");
23     scanf("%d", percent);
24     return *percent;
25 }
26 void free_student(struct student *stu) {
27     if (stu != NULL) {
28         free(stu->name);
29     }
30 }
31 void display_student(struct student stu) {
32     printf("Student Name: %s\n", stu.name);
33     printf("Percentage: %d%%\n", stu.percentage);
34 }
35 int main() {
36     struct student stu;
37     stu.name = NULL;
38     stu.name = read_update_name(stu.name);
39     if (stu.name == NULL) {
40         return -1;
41     }
42     read_update_percentage(&stu.percentage);
43     display_student(stu);
44     free_student(&stu);
45     return 0;
46 }
```

```
user72@trainux01:~/Assignments$ vi prog3.c
user72@trainux01:~/Assignments$ gcc prog3.c
user72@trainux01:~/Assignments$ ./a.out
Enter student's name: chaithra
Enter student's percentage: 93
Student Name: chaithra
Percentage: 93%
```