

Task

A school maintains a list of high school students who have expressed interest in volunteering as assistants in the summer camps for K-8 students. Each volunteer is stored with last name, first name, email, and volunteer's grade level.

Complete the program [project8_volunteer.c](#)

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so it uses a dynamically allocated linked list to maintain the list and has the following functions. **Do not modify the main function.**

1. `add_to_list`: ask the user to enter a volunteer's last name, first name, email, and grade level (in the exact order), then add the volunteer to the **end** of the linked list.
 1. It should check whether the volunteer has already existed by email and last name. If so, the function should print message "volunteer already exists" and exit.
 2. If the volunteer does not exist, allocate memory for the student, store the data, and add the volunteer to the **end** of the linked list.
 3. If the list is empty, the function should return the pointer to the volunteer. Otherwise, add the volunteer to the end of the linked list and return the pointer to the linked list.
 4. Assume all inputs are lower case for alphabetical letters.
2. `search_list`: find volunteers by grade level. Prompt the user to enter the grade level. Print last name, first name, and email of all volunteers matching the grade level. If no volunteer is found for the grade level, print message "not found".
3. `print_list`: print the last name, first name, email, and grade level of all the volunteers. Use "%-12s%-12s%-30s%5d\n" as the format specifier for `printf`.
4. `clear_list`: when the user exists the program, all the memory allocated for the linked list should be deallocated.
5. Use `read_line` function included in the program for reading in last name, first name, and email.

Example (your program must follow this format precisely)

```
Operation Code: a for adding to the list at the end, s for searching, p for printing the list; q for quit.
Enter operation code: a
Enter last name: Sharma
Enter first name: Aditya
Enter email address: sadya@gmail.com
Enter grade level: 10

Enter operation code: a
Enter last name: Michelle
Enter first name: Smith
Enter email address: ms869@gmail.com
Enter grade level: 11

Enter operation code: p
Sharma      Aditya      sadya@gmail.com      10
Smith       Michelle    ms869@gmail.com      11

Enter operation code: s
Enter grade level: 11
Smith       Michelle    ms869@gmail.com

Enter operation code: q
```