

## Project 8

USF is creating an online store to sell t-shirts from its student organizations. They are hiring someone to code the backend of the system, which will be used by a staff to enter the information about the available t-shirt into the store database. You really want to get this position, so you decided to show off your skills by implementing a prototype in C using **dynamically allocated linked lists**. Each t-shirt model will have the following information stored in the database:

- student organization name: string with spaces and at most 50 characters
- size: strings of at most 3 characters (e.g., "XS", "S", "M", "L", "XL", "XXL")
- price: real number with at most two digits after the decimal point
- quantity in inventory: non-negative integer number smaller than or equal to 1000

You already have a sketch for the code in the file **tshirt\_store.c**, now you must complete the following functions:

### 1. **add\_to\_inventory**:

- Ask the user to enter the student organization name and the size.
- Check if the inventory has a t-shirt for this organization with this specific size. If yes, your program should print a message stating that this t-shirt already exists and exit the function. Otherwise, ask the user to enter the price and the quantity, allocate memory for a new t-shirt and save the entered information, **add it to the end of the linked list**, and then exit the function.
- When exiting this function, return a pointer to **the first element of the linked list**. 2.

**search\_by\_organization**: search by a student organization name. Ask the user to enter the name of the organization. Find all t-shirts on inventory for this organization. Display organization name, size, price and quantity. If no t-shirt is found, print a message.

3. **search\_by\_size**: search by t-shirt size. Ask the user to enter the desired size. Find all t-shirts on inventory with this size. Display organization name, size, price and quantity. If no t-shirt is found, print a message.

4. **print\_inventory**: print organization name, size, price and quantity for all t-shirts on inventory. 5.

**clear\_inventory**: when the user exits the program, deallocate all the memory used for the linked list.

Note: use the **read\_line** function to read the name of the student organization.

## Testing guidelines:

Change the file permissions of the test script with the following command:

```
chmod +x try_tshirt_store
```

2. Complete the missing functions of *tshirt\_store.c*

3. Compile and test your solution for Project 8:

```
gcc -Wall -std=c99 tshirt_store.c
```

```
./try_tshirt_store
```

