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Software Engineering Project 1

Assignment 1 – Facebook Friends Suggestions

Step 1:

A user input was required to provide input from the command line the name of a Facebook user. At most 6 users can be provided as input. So firstly, we had to create an array which to store Facebook users: char users[6][80];

Secondly, for each user, at most 4 friends were suppose to be provided as input. Hence we also had to create another array which will store the friends for users: char friendsUser1[4][80];

To prompt the user to type in all the data required I used printf as follows:

- printf("%s", "Input the next Facebook User \n");

But that was controlled by loop(while(i< 6)) which ensured that a user that doesn’t exceed the number of required users for the program

All this took place in a function called “int inputFacebookUsers()” which is responsible for asking the users to provide a list of facebook users.

For providing friends for Facebook users I used a function called: int inputFriends(char friends[][80]) of which It was able to store and returns the number of friends provided as input.

I had to use static variable remains in memory while the program is running:

static int userID = -1; So that I would be able to keep track of friend ID.

For scanning in Facebook users and their friends I used fgets function which reads a line from the specified stream and stores it into the string pointed to by str. It stops when either (n-1) characters are read, the newline character is read, or the end-of-file is reached, whichever comes first: fgets(users[i],80,stdin) and fgets(friends[friendID],80,stdin).

Facebook users should be sorted depending on the number of their friends (from the biggest to the smaller). If 2 users have the same number of friends, they will be sorted alphabetically. To perform the sorting, I used Insertion sorting which sorts the array by shifting the elements one at at time. It iterates the input elements by growing the sorted array at each iteration. It compares the current element with the largest value in the sorted array. If the current element is greater, then it leaves the element in its place and moves on to the next element else it finds its correct position in the sorted array and moves it to that position. This is done by shifting all the elements, which are larger than the current element, in the sorted array to one position ahead.

I used insertion sort with aid of string functions such as:

1. strcpy(): Copies a string to another string
2. strcmp(): Compares two string

For friends suggestions for selected user I had to create an array to store suggested friends for a user: char suggestedFriend[80];
And had to ensure that suggested friend cannot be already be a friend with the user selected so had to iterate through the friends and users and use cases to avoid repetition.