CS112 Lab: Programming and Data Structure Labs Date: 14th Mar 2017

Assignment-8 **Deadline: 14th Mar 2017**

Please ensure that your program must run using the gcc compiler of 172.16.1.3 server.

1. Write a program in C (assign8.c) to create a singly linked list where each node contains *roll* (char[4]), *cpi* (float), *attendance* (float) and a next pointer. After creating the linked list perform the following operations-
    a) Print the elements of the linked list starting from the header node.
    b) Enter two rolls and swap the corresponding nodes. Here you have to swap the logical order of the nodes.
    c) Using this swap procedure to reverse the linked list.

Sample Input/output:

Enter elements of the node
Enter the roll = cs01
Enter the cpi = 8.0
Enter the attendance = 70.0

Any more node (y/n): y

Enter elements of the node
Enter the roll = cs02
Enter the cpi = 6.5
Enter the attendance = 75.0

Any more node (y/n): y

Enter elements of the node
Enter the roll = cs03
Enter the cpi = 7.0
Enter the attendance = 85.0

Any more node (y/n): n
Enter 1 for print, 2 for swap, 3 for reverse, 0 for exit: 1

The list of elements in the linked list is

<cs01, 8, 70>, <cs02, 6, 75>, <cs03,7, 85>

Enter 1 for print, 2 for swap, 3 for reverse, 0 for exit: 2

Enter roll of first node to be swapped: cs01

Enter roll of second node to be swapped: cs03

Swap successful

Enter 1 for print, 2 for swap, 3 for reverse, 0 for exit: 1

<cs03,7, 85>, <cs02, 6, 75>, <cs01, 8, 70>

Enter 1 for print, 2 for swap, 3 for reverse, 0 for exit: 3

Reverse operation is successfully done.

Enter 1 for print, 2 for swap, 3 for reverse, 0 for exit: 1

<cs01, 8, 70>, <cs02, 6, 75>, <cs03,7, 85>

Enter 1 for print, 2 for swap, 3 for reverse, 0 for exit: 0

Program ends.

Program Formatting Instruction: Students are advised to write their programs with proper care. A program must have a header block consisting of programmer's name and rollno, along with date of creation. In the header, also include the objective of the program in one line. The program should be properly indented and it is expected that you will use meaningful variable names. For each functional block provide a short and relevant comment.

Submission Process: Submit your assignment (make sure your assignment can be executed in using gcc compiler) using the link- http://172.16.1.3/~samrat/CS112/submission/ Login using your rollno (ex: 1601CS01) and password. Once you login, change the password immediately. It is your responsibility to set a strong password that is not guessable by others. Upload the assignments using the specified filenames only. After the due date (mentioned at top), the uploading of files may be allowed for few more time but it will be treated as late submission. So ensure that you submit the assignment on time. There will be penalty if you are found to take any unfair means during the lab hours and during the assignment submission process. **Copying program from any other source and allowing others to copy your program, both will be penalized equally.**