**Assignment 1**

**1. Remove duplicates from sorted linked list:**

You're given the pointer to the head node of a sorted linked list, where the data in the nodes is in ascending order. Delete as few nodes as possible so that the list does not contain any value more than once. The given head pointer may be null indicating that the list is empty. Complete the code in Remove\_duplicates.cpp

**Input Format**

Input is provided through command line input file.

The first line in input file contains an integer, denoting the number of test cases. The format for each test case is as follows:

The first line contains an integer, denoting the number of elements in the linked list.   
The next lines contain an integer each, denoting the elements of the linked list.

**Output format**

For each test case, print in a new line, the data of the linked list after removing the duplicates separated by single space.

**Sample input file**

1

5

1

2

2

3

4

**Sample Output**

1 2 3 4

**How to run:**

$g++ Remove\_duplicates.cpp –o Remove\_duplicates.out

$./Remove\_duplicates.out < Remove\_duplicates \_input.txt > Remove\_duplicates\_output.txt

**2. Reorder Linked list**

Given a singly linked list L0 -> L1 -> … -> Ln-1 -> Ln. Rearrange the nodes in the list so that the new formed list is: L0 -> Ln -> L1 -> Ln-1 -> L2 -> Ln-2 …

You are required to do this in-place without altering the nodes’ values. Complete the code in Reorder\_list.cpp

**Input Format**

Input is provided through command line input file.

The first line in input file contains an integer, denoting the number of test cases. The format for each test case is as follows:

The first line contains an integer, denoting the number of elements in the linked list.   
The next lines contain an integer each, denoting the elements of the linked list.

**Output format**

For each test case, print in a new line, the data of the linked list after rearranging separated by single space.

**Sample input file**

2

4

1

2

3

4

5

1

2

3

4

5

**Sample Output**

1 4 2 3

1 5 2 4 3

**How to run:**

$g++ Reorder\_list.cpp –o Reorder\_list.out

$./ Reorder\_list.out < Reorder\_list \_input.txt > Reorder\_list.txt