Problem 2: k-Element Operations in a Linked List

Data Structures Lab (CS111)

Let there be an initial sequence S of integers given as user input. First build a main singular linked list called *main_list* using S in following way:

Let the given sequence is $A = [0, 1, 2, 3, 4, 5]$. First build a linked list like $5- > 4- > 3- > 2- > 1- > 0$. Then reverse this list as $0- > 1- > 2- > 3- > 4- > 5$. Implementation of list reversal function is mandatory.

Implement $k\_insert(i, k)$, $k\_delete(i, k)$, $k\_print(i, k)$ operations on *main_list*. Definition of these functions are as follows:

1. $k\_insert(i, k)$: The user provides the values of k and i. You need to create a 2nd list with k elements and insert that 2nd list after the i^{th} element of the *main_list*.

2. $k\_delete(i, k)$: The user provides the values of k and i. You need to delete k number of elements starting from i^{th} element of the *main_list*.

3. $k\_print(i, k)$: The user provides the values of k and i. You need to print k number of elements starting from i^{th} element of the *main_list*.