Indian Institute of Technology (ISM), Dhanbad
Data Structure Lab (NCSC104)
Assignment - 4

Problem Statement

You are required to implement a data structure to manage **n singly linked lists**, where each node in a linked list contains an integer value and a pointer to the next node. The value of **n** should be taken as input from the user. Additionally, an array of pointers will be used to track these **n** singly linked lists.

Tasks

Implement the following functions to perform operations on the singly linked lists:

1. **insert(i, j, x)**
   - Insert a node with the value x at the j^{th} position of the i^{th} list.
   - If the i^{th} list has fewer than j nodes, insert the node at the end of the list.
   - Example Input: insert(2, 3, 10)
   - Example Output: Inserts 10 at position 3 of list 2.
2. **delete(i, j)**
   - Delete the node at the jth position of the ith list.
   - If the ith list has fewer than j nodes, print an error message.
   - Example Input: delete(1, 5)
   - Example Output: Deletes the 5th node from list 1 or prints an error if it doesn't exist.
3. **findElement(i, x)**
   - Search for the first occurrence of the value x in the ith list and return its position.
   - If x is not found, print an error message.
   - Example Input: findElement(2, 10)
   - Example Output: Returns the position of the first occurrence of 10 in list 2 or an error if not found.
4. **reverseList(i)**
   - Reverse the ith list in place.
   - Example Input: reverseList(1)
   - Example Output: Reverses the elements of list 1.

5. **mergeLists(i, j)**
    - Merge the jth list into the ith list by appending all nodes of the jth list to the end of the ith list.
    - After merging, the jth list should be empty.
    - Example Input: mergeLists(2, 3)
    - Example Output: Merges list 3 into list 2.