

# American International University-Bangladesh (AIUB)

## Data Structure Lab Task 1 [C]

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Marks: 20

You are working as a software developer at a university's event management team. You have been assigned the task of creating a system to manage the list of participants' IDs for a workshop. The coordinator needs to maintain a list of participants by performing several operations. The coordinator frequently updates the list by adding new participants at the beginning, end, or at specific positions when late registrations come in. Sometimes, due to cancellations, you need to remove participants from the list, either from the beginning, end, or any given position. Additionally, the coordinator needs to view the list in reverse order to check the latest registered participants first. **As of now, 12 participants have registered and their ID is known to you (consider any integer number as ID). You have to insert your ID also. Your ID is; 123.** Implement a program that performs the following operations:

1. **Insert 3 new participants' IDs:** One at the beginning, one at the end, and one at the middle.
2. **Delete 2 participants' IDs:** One from the beginning and one from any specified position.
3. After each operation, display the updated list of participant IDs.
4. Show the final list of participant IDs in reverse order.
5. After showing the list in a reverse order find your ID and the largest element from the reverse list and also show in which index your ID and the large element are stored.
6. Take a new array of your choice and merge it with the reverse array that you got from question 4 and print the updated merged array.