



भारतीय सूचना प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF INFORMATION TECHNOLOGY GUWAHATI

Data Structure Lab, B.Tech 2nd Semester

Instructions

1. After completion, you can share the files through the google form, the link will be provided.
2. Deadline to submit is 7th May 2023.

Assignment -4

1. Write a C program to merge two sorted doubly linked lists into a single sorted doubly linked list.

Output format:

- Take user input for Doubly linked list 1
 - Display the Doubly linked list 1 : - Example: 5 -> 10 -> 12 -> 15-> 20
 - Take user input for Doubly linked list 2
 - Display the Double linked list : - Example: 14 -> 23 -> 30 -> 32-> 40
 - Display the linked list after merging: - Example: 5 -> 10 -> 12 -> 14-> 15 -> 20 -> 23-> 30-> 32 -> 40
2. Write a C program to convert an infix expression to a prefix expression using a stack data structure.

Output format:

- Take user input for Infix Expression.
- Display Infix Expression: - Example: $(A+B)/C*D-E$
- Display reverse expression: - Example: $E-D*C/)B+A($
- Print the Prefix Expression.

3. Write a C program to check if an input string containing parentheses is balanced or not using a stack data structure.

Output format:

- Take user input for a string containing parenthesis.
- Display the string: - Example: $\{(abc)de(ef)\}$
- Print whether balanced or not.