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```c
#include <stdio.h>
#include <stdlib.h>

struct Node {
    int data;
    struct Node* prev;
    struct Node* next;
};

struct Node* head = NULL;

struct Node* createNode(int value) {
    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
    newNode->data = value;
    newNode->prev = NULL;
    newNode->next = NULL;
    return newNode;
}

void createList(int n) {
    int value;
    struct Node *temp, *newNode;

    if (n <= 0) {
        printf("Invalid size\n");
        return;
    }

    printf("Enter data for node 1: ");
    scanf("%d", &value);

    head = createNode(value);
    temp = head;

    for (int i = 2; i <= n; i++) {
        printf("Enter data for node %d: ", i);
        scanf("%d", &value);

        newNode = createNode(value);

        temp->next = newNode;
        newNode->prev = temp;

        temp = newNode;
    }
}

void insertLeft(int target, int value) {
    struct Node* newNode = createNode(value);
    struct Node* temp = head;

    while (temp != NULL && temp->data != target) {
        temp = temp->next;
    }
```

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```
55
56      if (temp == NULL) {
57          printf("Target value not found.\n");
58          free(newNode);
59          return;
60      }
61
62      if (temp == head) {
63          newNode->next = head;
64          head->prev = newNode;
65          head = newNode;
66          return;
67      }
68
69      newNode->next = temp;
70      newNode->prev = temp->prev;
71      temp->prev->next = newNode;
72      temp->prev = newNode;
73  }
74
75  void deleteValue(int target) {
76      struct Node* temp = head;
77
78      while (temp != NULL && temp->data != target) {
79          temp = temp->next;
80      }
81
82      if (temp == NULL) {
83          printf("Value not found.\n");
84          return;
85      }
86
87      if (temp == head && temp->next == NULL) {
88          head = NULL;
89      }
90      else if (temp == head) {
91          head = head->next;
92          head->prev = NULL;
93      }
94      else if (temp->next == NULL) {
95          temp->prev->next = NULL;
96      }
97      else {
98          temp->prev->next = temp->next;
99          temp->next->prev = temp->prev;
100     }
101
102     free(temp);
103 }
104
105 void display() {
106     struct Node* temp = head;
107
108     if (temp == NULL) {
```

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```c
        printf("List is empty.\n");
        return;
    }

    printf("Doubly Linked List: ");
    while (temp != NULL) {
        printf("%d <-> ", temp->data);
        temp = temp->next;
    }
    printf("NULL\n");
}

int main() {
    int n, choice, value, target;

    printf("Enter number of nodes to create: ");
    scanf("%d", &n);

    createList(n);

    while (1) {
        printf("\n--- MENU ---\n");
        printf("1. Insert to the left of a value\n");
        printf("2. Delete a value\n");
        printf("3. Display list\n");
        printf("4. Exit\n");
        printf("Enter choice: ");
        scanf("%d", &choice);

        switch (choice) {
        case 1:
            printf("Enter target value: ");
            scanf("%d", &target);
            printf("Enter new value: ");
            scanf("%d", &value);
            insertLeft(target, value);
            break;
        case 2:
            printf("Enter value to delete: ");
            scanf("%d", &target);
            deleteValue(target);
            break;
        case 3:
            display();
            break;
        case 4:
            exit(0);
        default:
            printf("Invalid choice.\n");
        }
    }

    return 0;
}
```

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```
Enter number of nodes to create: 3
Enter data for node 1: 10
Enter data for node 2: 20
Enter data for node 3: 30

--- MENU ---
1. Insert to the left of a value
2. Delete a value
3. Display list
4. Exit
Enter choice: 3
Doubly Linked List: 10 <-> 20 <-> 30 <-> NULL

--- MENU ---
1. Insert to the left of a value
2. Delete a value
3. Display list
4. Exit
Enter choice: 1
Enter target value: 20
Enter new value: 15

--- MENU ---
1. Insert to the left of a value
2. Delete a value
3. Display list
4. Exit
Enter choice: 3
Doubly Linked List: 10 <-> 15 <-> 20 <-> 30 <-> NULL

--- MENU ---
1. Insert to the left of a value
2. Delete a value
3. Display list
4. Exit
Enter choice: 2
Enter value to delete: 30

--- MENU ---
1. Insert to the left of a value
2. Delete a value
3. Display list
4. Exit
Enter choice: 3
Doubly Linked List: 10 <-> 15 <-> 20 <-> NULL

--- MENU ---
1. Insert to the left of a value
2. Delete a value
3. Display list
4. Exit
Enter choice:
```

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