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#include <iostream>
using namespace std;
// Node Structure
struct Node
{
    int data;
    Node *next;
};
// Linked List class
class LinkedList
{
private:
    Node *head;

public:
    // Constructor
    LinkedList()
    {
        head = NULL;
    }
    // Insert Function
    void insertAtBeginning(int value)
    {
        Node *newNode = new Node();
        newNode->data = value;
        newNode->next = head;
        head = newNode;
        cout << "Inserted " << value << " at the beginning." << endl;
    }
    // Insert at the End function
    void insertAtEnd(int value)
    {
        Node *newNode = new Node();
        newNode->data = value;
        newNode->next = NULL;
        if (head == NULL)
        {
            head = newNode;
            cout << "Inserted " << value << " as the first element." << endl;
            return;
        }
        Node *temp = head;
        while (temp->next != NULL)

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{
    temp = temp->next;
}
temp->next = newNode;
cout << "Inserted " << value << " at the end." << endl;
}

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// Insert at any Position

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void insertAtPosition(int value, int position)
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{
    if (position < 1)
    {
        cout << "Invalid position!" << endl;
        return;
    }
    if (position == 1)
    {
        insertAtBeginning(value);
        return;
    }
}

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```
Node *newNode = new Node();
```

```
newNode->data = value;
```

```
Node *temp = head;
```

```
for (int i = 1; i < position - 1; i++)
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{
    if (temp == NULL)
    {
        cout << "Position out of bounds." << endl;
        return;
    }
    temp = temp->next;
}
if (temp == NULL)
{
    cout << "Position out of bounds." << endl;
    return;
}

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```
newNode->next = temp->next;
```

```
temp->next = newNode;
```

```
cout << "Inserted " << value << " at position " << position << "." << endl;
```

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}

// Display Function
void display()
{
    if (head == NULL)
    {
        cout << "List is Empty." << endl;
        return;
    }
    Node *temp = head;
    cout << "Current List: ";
    while (temp != NULL)
    {
        cout << temp->data << " -> ";
        temp = temp->next;
    }
    cout << "NULL" << endl;
}

};

// Main function
int main()
{
    LinkedList list;
    int choice, value, pos;

    do
    {
        cout << "\n--- LINKED LIST MENU ---" << endl;
        cout << "1. Insert at Beginning" << endl;
        cout << "2. Insert at End" << endl;
        cout << "3. Insert at Position (Middle)" << endl;
        cout << "4. Display" << endl;
        cout << "5. Exit" << endl;
        cout << "Enter your choice: ";
        cin >> choice;

        switch (choice)
        {
            case 1:
                cout << "Enter value: ";
                cin >> value;
                list.insertAtBeginning(value);

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        break;
    case 2:
        cout << "Enter value: ";
        cin >> value;
        list.insertAtEnd(value);
        break;
    case 3:
        cout << "Enter value: ";
        cin >> value;
        cout << "Enter position: ";
        cin >> pos;
        list.insertAtPosition(value, pos);
        break;
    case 4:
        list.display();
        break;
    case 5:
        cout << "Exiting..." << endl;
        break;
    default:
        cout << "Invalid choice." << endl;
    }
} while (choice != 5);

return 0;
}
```