PRN No. : 124B2B012

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Title: Implement a simple text editor application using a doubly linked list to manage the text buffer. Text editor should support the following functionalities:

a. Insert text.

b. Delete text.

c. Display text.

d. Search text.

e. Print text in reverse.

Code:

```
#include <iostream>
#include <string>

using namespace std;



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

 class TextEditor {
     Node* head;
public:
    TextEditor() : head(nullptr) {}

    void insert(char c) {
```

```
    Node* newNode = new Node{c, nullptr, nullptr};
    if (!head) {
        head = newNode;
    } else {
        Node* temp = head;
        while (temp->next) {
            temp = temp->next;
        }        temp->next        =
        newNode;       newNode-
        >prev = temp;
    }
}

void deleteText() {
    if (head) {
        if (!head->next) {
            delete head;
            head = nullptr;
        } else {
            Node* temp = head;
            while (temp->next->next) {
                temp = temp->next;
            }
            delete temp->next;
            temp->next = nullptr;
        }
    }
}
```

```
void display() {
    Node* temp = head;
    while (temp) {
        cout << temp->data;
        temp = temp->next;
    }
    cout << endl;
}

bool search(char c) {
    Node* temp = head;
    while (temp) {
        if (temp->data == c) {
            return true;
        }
        temp = temp->next;
    }
    return false;
}

void reverse() {
    Node* temp = head;
    while (temp->next) {
        temp = temp->next;
    }
    while (temp) {
        cout << temp->data;
        temp = temp->prev;
    }
```

```
        cout << endl;
    }
};

int main() {
    TextEditor editor;

    while (true) {
        cout << "Text Editor Menu:" << endl;
        cout << "1. Insert text" << endl;
        cout << "2. Delete text" << endl;
        cout << "3. Display text" << endl;
        cout << "4. Search text" << endl;
        cout << "5. Print text in reverse" << endl;
        cout << "6. Exit" << endl;

        int choice;
        cout<<"Enter choice:";
        cin >> choice;

        switch (choice) {
            case 1: {
                string text;
                cout << "Enter text: ";
                cin >> text;
                for (char c : text) {
                    editor.insert(c);
                }
                break;
```

```
            }
            case 2:
                editor.deleteText();
                break;
            case 3:
            editor.display();
            break; case 4: {

                char c;
                cout << "Enter character to search: ";
                cin >> c;
                if (editor.search(c)) {
                    cout << "Character found." << endl;
                } else {
                    cout << "Character not found." << endl;
                }
                break;
            }
            case 5:
                editor.reverse();
                break;
            case 6:
                return 0;
            default:
                cout << "Invalid choice." << endl;
        }
    }
    return 0;
}
```

Output:

Output

```
/tmp/pjaXBd6OKm.o

Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice: 1
Enter text: Atharva

Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice: 3
Atharva
```

```
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice: 3
Atharva

Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice: 4
Enter character to search: v
Character found.

Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice: 5
avrahtA
```

```
Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice:4
Enter character to search: i
Character not found.
Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice:1
Enter text: i
```

```
Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice:5
ihcarp
Text Editor Menu:
1. Insert text
2. Delete text
3. Display text
4. Search text
5. Print text in reverse
6. Exit
Enter choice:6


=== Code Execution Successful ===
```