

Assignment No 2

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C++
#include <iostream>

using namespace std;

struct Member {
    int registrationNo;
    string name;
    Member* next;
};

class ClubMembers {
private:
    Member* president;
    Member* secretary;

public:
    ClubMembers() {
        president = nullptr;
        secretary = nullptr;
    }

    Member* getPresident() {
        return president;
    }

    // Function to add a new member to the club
    void addMember(int regNo, string memberName) {
        Member* newMember = new Member;
        newMember->registrationNo = regNo;
        newMember->name = memberName;
        newMember->next = nullptr;

        if (president == nullptr) {
            president = newMember;
            secretary = newMember;
        } else {
            secretary->next = newMember;
            secretary = newMember;
        }
    }

    // Function to delete a member by registration number
    void deleteMember(int regNo) {
        Member* prev = nullptr;
        Member* curr = president;

        while (curr != nullptr && curr->registrationNo != regNo) {
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        prev = curr;
        curr = curr->next;
    }

    if (curr == nullptr) {
        return;
    }

    if (curr == president) {
        president = curr->next;
    } else if (curr == secretary) {
        secretary = prev;
        secretary->next = nullptr;
    } else {
        prev->next = curr->next;
    }

    delete curr;
}

// Function to compute the total number of members
int getTotalMembers() {
    int count = 0;
    Member* current = president;
    while (current != nullptr) {
        count++;
        current = current->next;
    }
    return count;
}

// Function to display the list of members
void displayMembers() {
    Member* current = president;
    while (current != nullptr) {
        cout << "Reg No: " << current->registrationNo << ", Name: "
        << current->name << endl;
        current = current->next;
    }
}

// Function to display the list in reverse order using recursion
void displayInReverseOrder(Member* current) {
    if (current == nullptr)
        return;
    displayInReverseOrder(current->next);
    cout << "Reg No: " << current->registrationNo << ", Name: " <<
    current->name << endl;
}
};

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int main() {
    ClubMembers club;
    club.addMember(1, "President Name");
    club.addMember(2, "Member 1");
    club.addMember(3, "Member 2");
    club.addMember(4, "Secretary Name");

    cout << "Total Members: " << club.getTotalMembers() << endl; cout
    << "Club Members: " << endl;
    club.displayMembers();

    cout << "Club Members in Reverse Order: " << endl;
    club.displayInReverseOrder(club.getPresident());

    return 0;
}

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output-

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✓ TERMINAL
PS C:\Users\          \c++\          > cd "c:\Users\          \c++\          \"
}
Total Members: 4
Club Members:
Reg No: 1, Name: President Name
Reg No: 2, Name: Member 1
Reg No: 3, Name: Member 2
Reg No: 4, Name: Secretary Name
Club Members in Reverse Order:
Reg No: 4, Name: Secretary Name
Reg No: 3, Name: Member 2
Reg No: 2, Name: Member 1
Reg No: 1, Name: President Name
PS C:\Users\          .>

```