

Name:- Haider Ali

Sap ID:- 53109

Subject:- DSA

```
#include <iostream>

using namespace std;

class Node {
public:
    string name;
    int sapID;
    Node* next;

    Node(string name, int sapID) {
        this->name = name;
        this->sapID = sapID;
        this->next = NULL;
    }
};

class LinkedList {
    Node* head;

public:
    LinkedList() { head = NULL; }

    void insertStudent(string name, int sapID) {
        Node* newNode = new Node(name, sapID);
        if (!head) {
            head = newNode;
        }
        return;
    }
};
```

```
}  
  
Node* temp = head;  
while (temp->next != NULL)  
temp = temp->next;  
temp->next = newNode;  
}
```

```
void deleteStudent(int pos) {  
    if (!head) {  
        cout << "List is empty" << endl;  
        return;  
    }
```

```
    Node* temp = head;  
    if (pos == 1) {  
        head = head->next;  
        delete temp;  
        return;  
    }
```

```
    Node* prev = NULL;  
    while (pos-- > 1 && temp) {  
        prev = temp;  
        temp = temp->next;  
    }
```

```
    if (temp) {  
        prev->next = temp->next;  
        delete temp;  
    }
```

```
    }
```

```
void printList() {
```

```

Node* temp = head;
while (temp != NULL) {
    cout << "Name: " << temp->name << ", SAP ID: " << temp->sapID << endl;
    temp = temp->next;
}
};

int main() {
    LinkedList list;
    string name;
    int sapID;
    // Input at least 5 students
    for (int i = 0; i < 5; ++i) {
        cout << "Enter name of student " << i + 1 << ": ";

        if (i == 0) {
            cin.ignore();
        }
        getline(cin, name);
        cout << "Enter SAP ID of student " << i + 1 << ": ";
        cin >> sapID;
        cin.ignore();
        list.insertStudent(name, sapID);
    }

    list.deleteStudent(2);
    list.deleteStudent(4);
    cout << "\nRemaining students:\n";
    list.printList();
}

```

```
return 0;
```

```
}
```

The screenshot shows a web browser window with the URL `programiz.com/cpp-programming/online-compiler/`. The page features a header with the Programiz logo and a navigation bar. Below the header, there is a sidebar with icons for various programming languages, with C++ selected. The main area displays a C++ program in `main.cpp` with line numbers 67 to 85. The code includes a loop to input student names and SAP IDs, followed by a deletion of specific students and a final list print. The output window on the right shows the execution results, including the input data and the remaining students after deletions. The status bar at the bottom indicates the code execution was successful.

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main.cpp

```
67 for (int i = 0; i < 5; ++i) {
68     cout << "Enter name of student " << i + 1 << ": ";
69
70     if (i == 0) {
71         cin.ignore();
72     }
73     getline(cin, name);
74     cout << "Enter SAP ID of student " << i + 1 << ": ";
75     cin >> sapID;
76     cin.ignore();
77     list.insertStudent(name, sapID);
78 }
79
80 list.deleteStudent(2);
81 list.deleteStudent(4);
82 cout << "\nRemaining students:\n";
83 list.printList();
84 return 0;
85 }
```

Output

```
./tmp/V20QhrGa7S.o
Enter name of student 1: asif
Enter SAP ID of student 1: 53109
Enter name of student 2: Ali
Enter SAP ID of student 2: 2223
Enter name of student 3: Saiid
Enter SAP ID of student 3: 34445
Enter name of student 4: Asa'd
Enter SAP ID of student 4: 44567
Enter name of student 5: Haider
Enter SAP ID of student 5: 8876

Remaining students:
Name: sif, SAP ID: 53109
Name: Saiid, SAP ID: 34445
Name: Asa'd, SAP ID: 44567

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

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