Name:- Ahmed Ali Asif

Sap ID:- 55346

Subject:- DS

```cpp
//*****QUESTION*****
#include <iostream>
#include <string>

using namespace std;

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

    Student(string name, int sapID) {
        this->name = name;
        this->sapID = sapID;
        this->next = nullptr;
    }
};

class LinkedList {
public:
    Student* head;

    LinkedList() {
```

```cpp
        head = nullptr;
    }


    void insertStudent(string name, int sapID) {
        Student* newStudent = new Student(name, sapID);
        newStudent->next = head;
        head = newStudent;
    }


    void deleteStudent(int position) {
        if (head == nullptr) {
            cout << "List is empty" << endl;
            return;
        }


        Student* temp = head;
        for (int i = 0; i < position - 1 && temp != nullptr; i++) {
            temp = temp->next;
        }


        if (temp == nullptr || temp->next == nullptr) {
            cout << "Invalid position" << endl;
            return;
        }


        Student* toDelete = temp->next;
        temp->next = toDelete->next;
        delete toDelete;
    }
```

```cpp
    void printList() {

        Student* temp = head;

        while (temp != nullptr) {

            cout << "Name: " << temp->name << ", SAP ID: " << temp->sapID << endl;

            temp = temp->next;

        }

    }

};


int main() {

    LinkedList list;


    // Input at least 5 students

    for (int i = 0; i < 5; i++) {

        string name;

        int sapID;


        cout << "Enter name of student " << i + 1 << ": ";

        cin.ignore();

        getline(cin, name);


        cout << "Enter SAP ID of student " << i + 1 << ": ";

        cin >> sapID;


        list.insertStudent(name, sapID);

    }


    list.deleteStudent(2);
```

```
        list.deleteStudent(4);


        cout << "\nRemaining students:\n";

        list.printList();


        return 0;

}
```

```cpp
69          int sapID;
70
71          cout << "Enter name of student " << i + 1 << ": ";
72          cin.ignore();
73          getline(cin, name);
74
75          cout << "Enter SAP ID of student " << i + 1 << ": ";
76          cin >> sapID;
77
78          list.insertStudent(name, sapID);
79      }
80
81      list.deleteStudent(2);
82      list.deleteStudent(4);
83
84      cout << "\nRemaining students:\n";
85      list.printList();
86
87      return 0;
88  }
```

input

```
Name: Allen, SAP ID: 1124
Name: en, SAP ID: 1123


...Program finished with exit code 0
Press ENTER to exit console.
```