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**PAMANTASAN NG LUNGSOD NG MAYNILA**

College of Information Systems and Technology Management (CISTM)

**ICC 0104-1 – Data Structures and Algorithms**

*A.Y. 2023- 2024*

**Group 4**: Searching

**Submitted by**:

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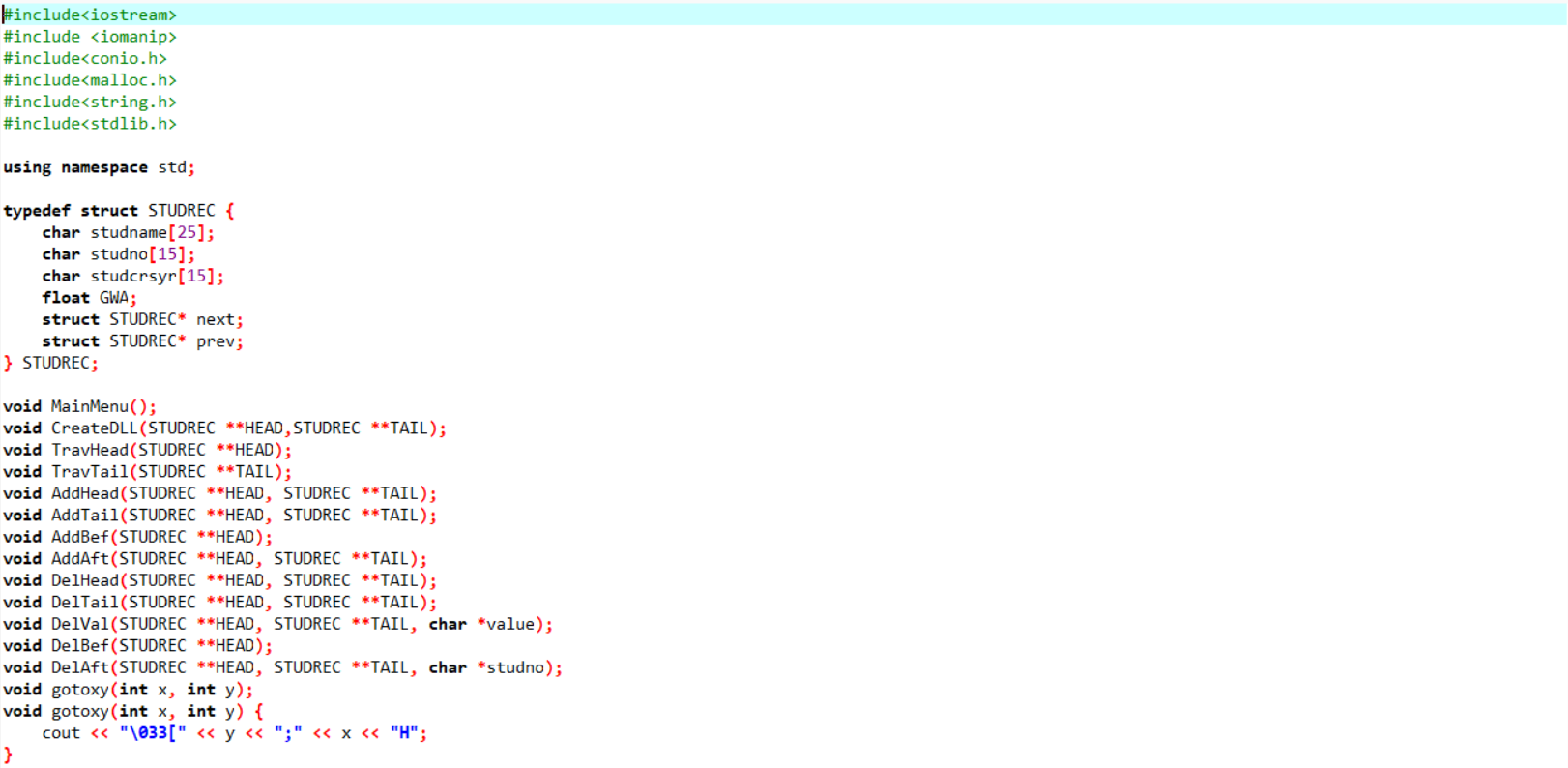
Rivera, Ramyll C.

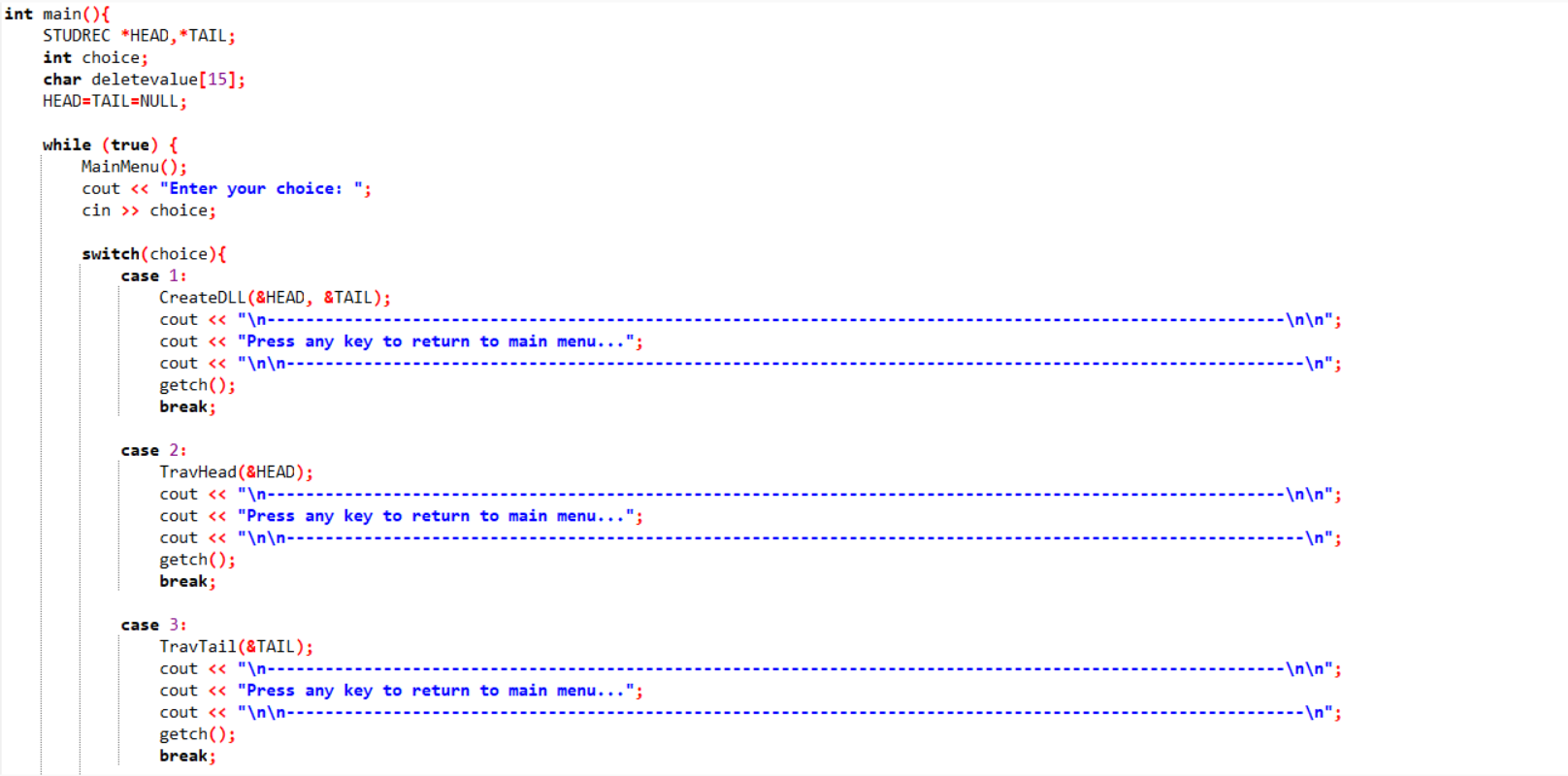
Sibayan, Joan F.

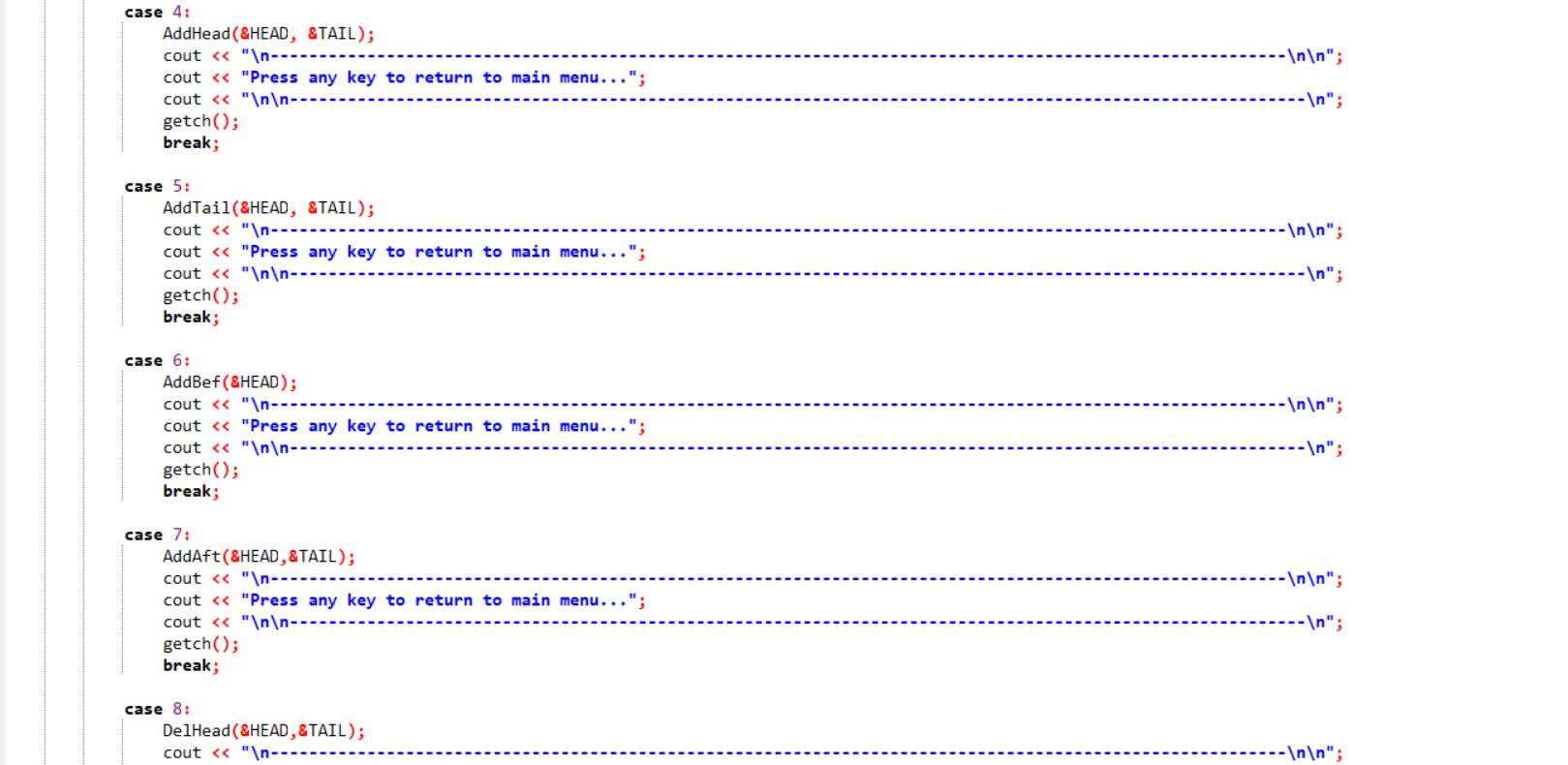
BSCS 1-1

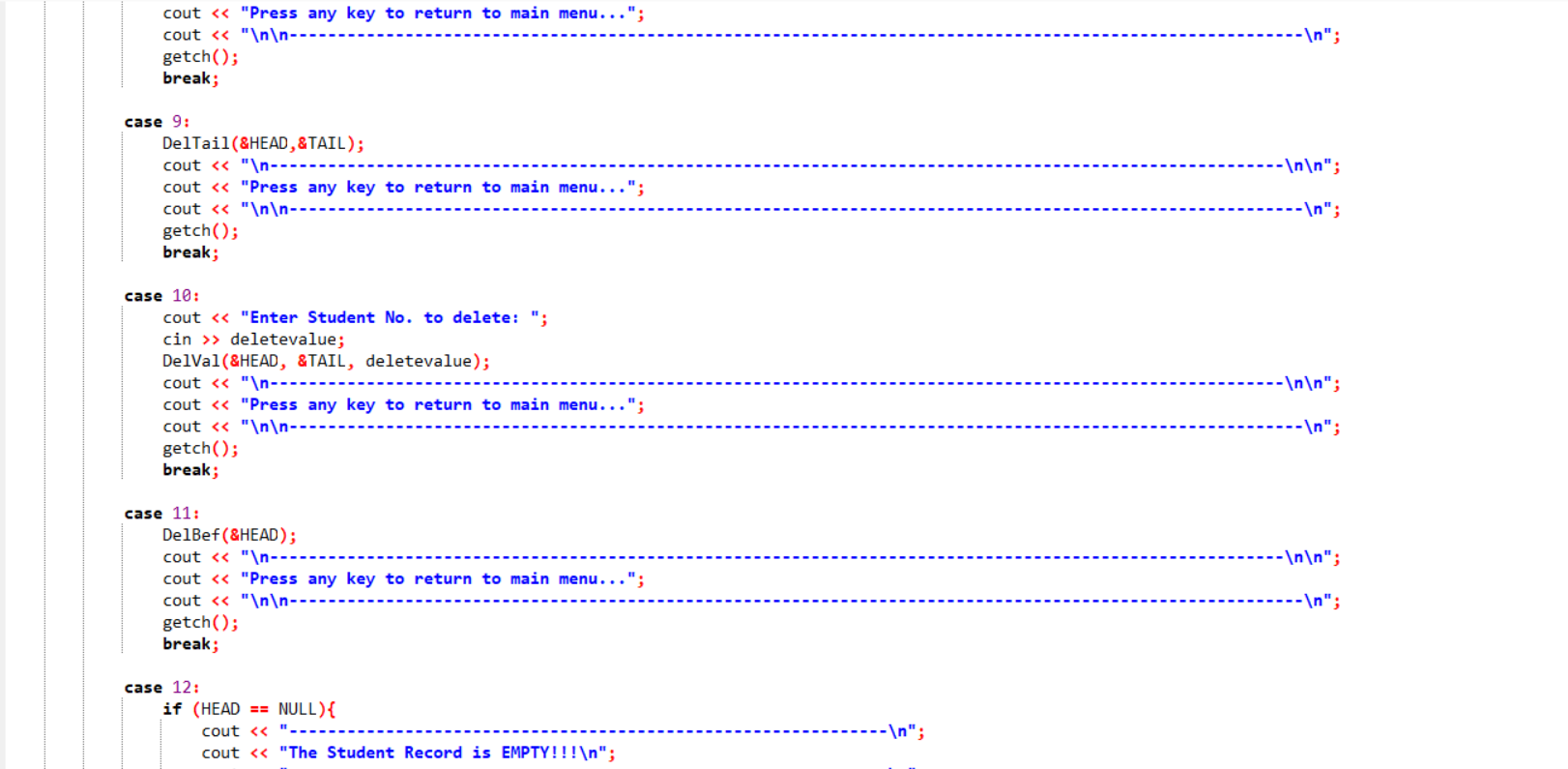
1. Main Menu

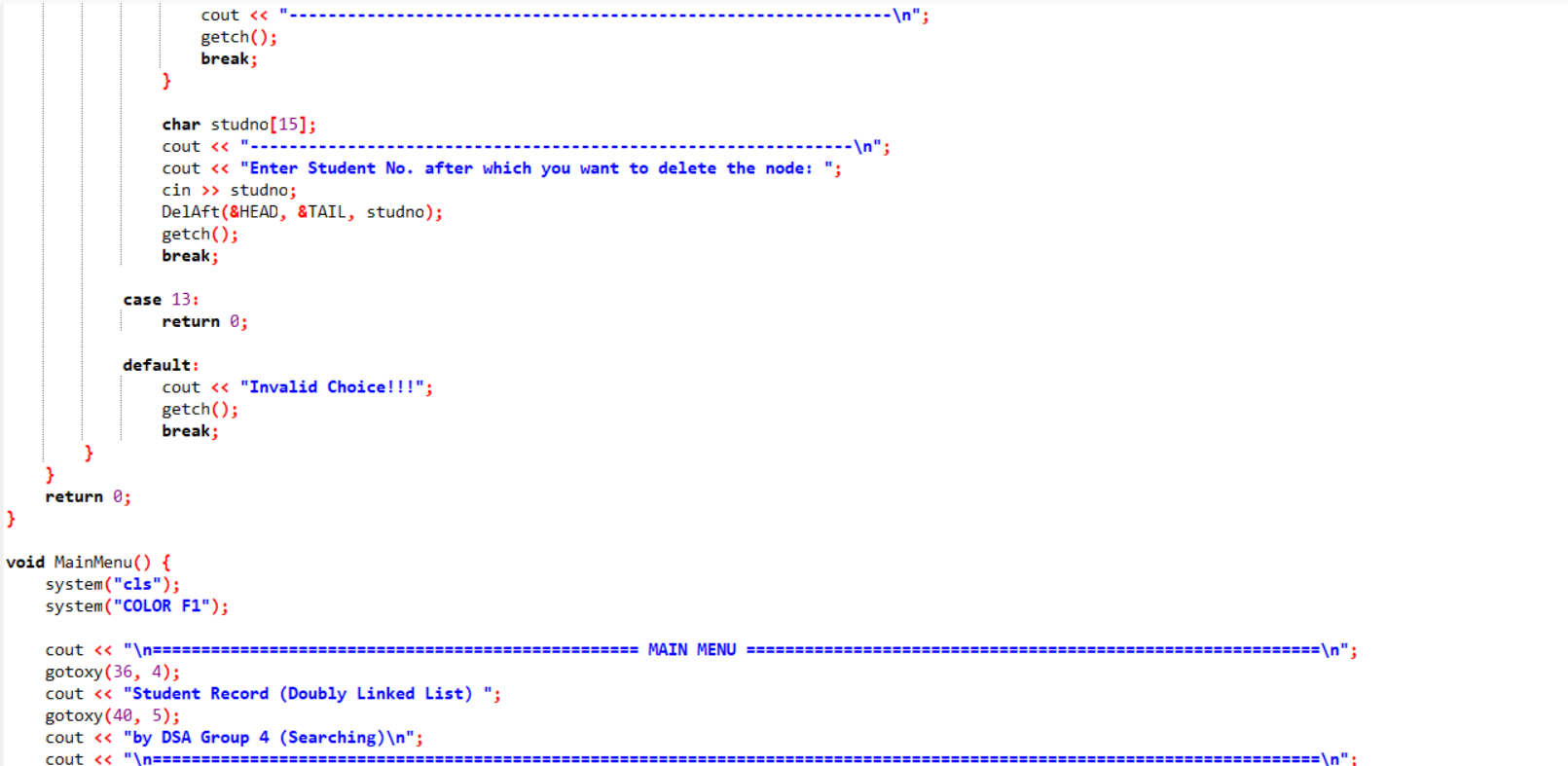
Source Code in C++

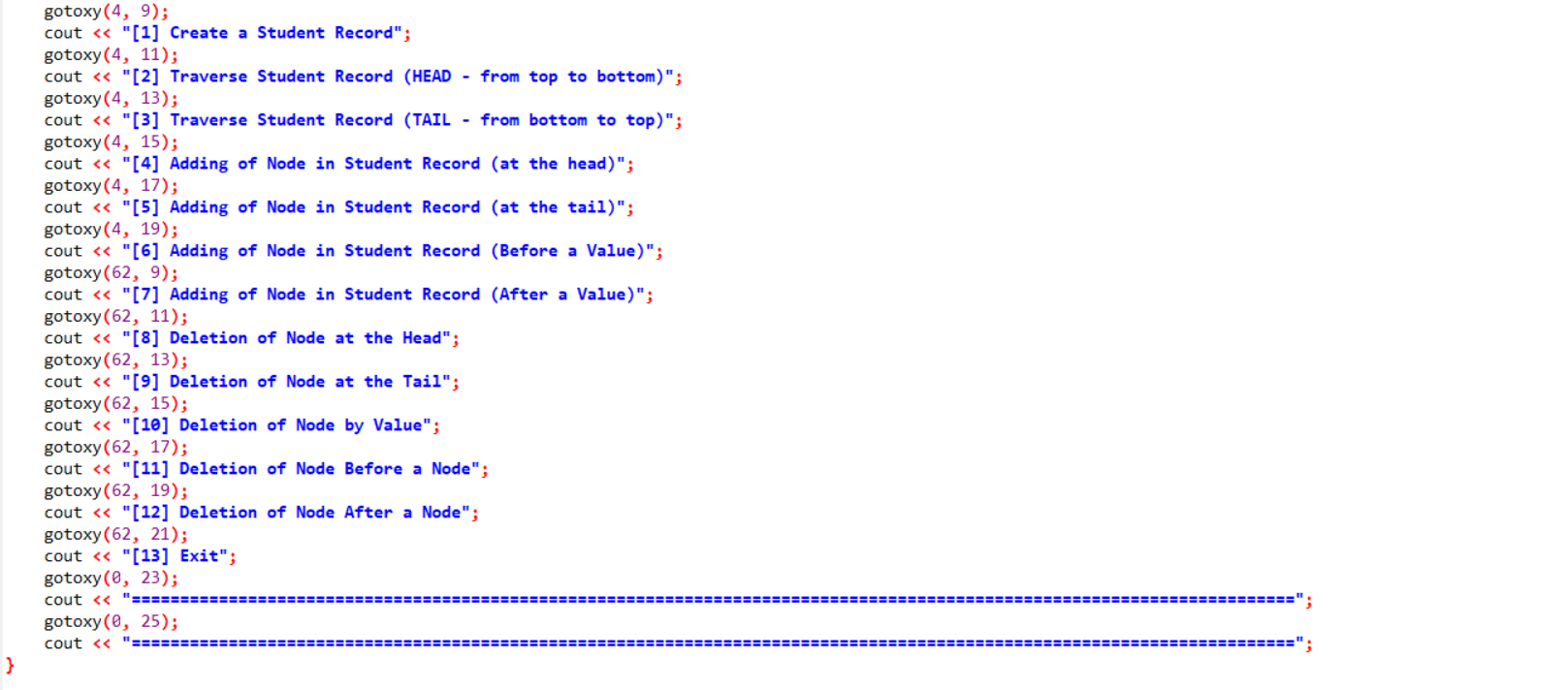




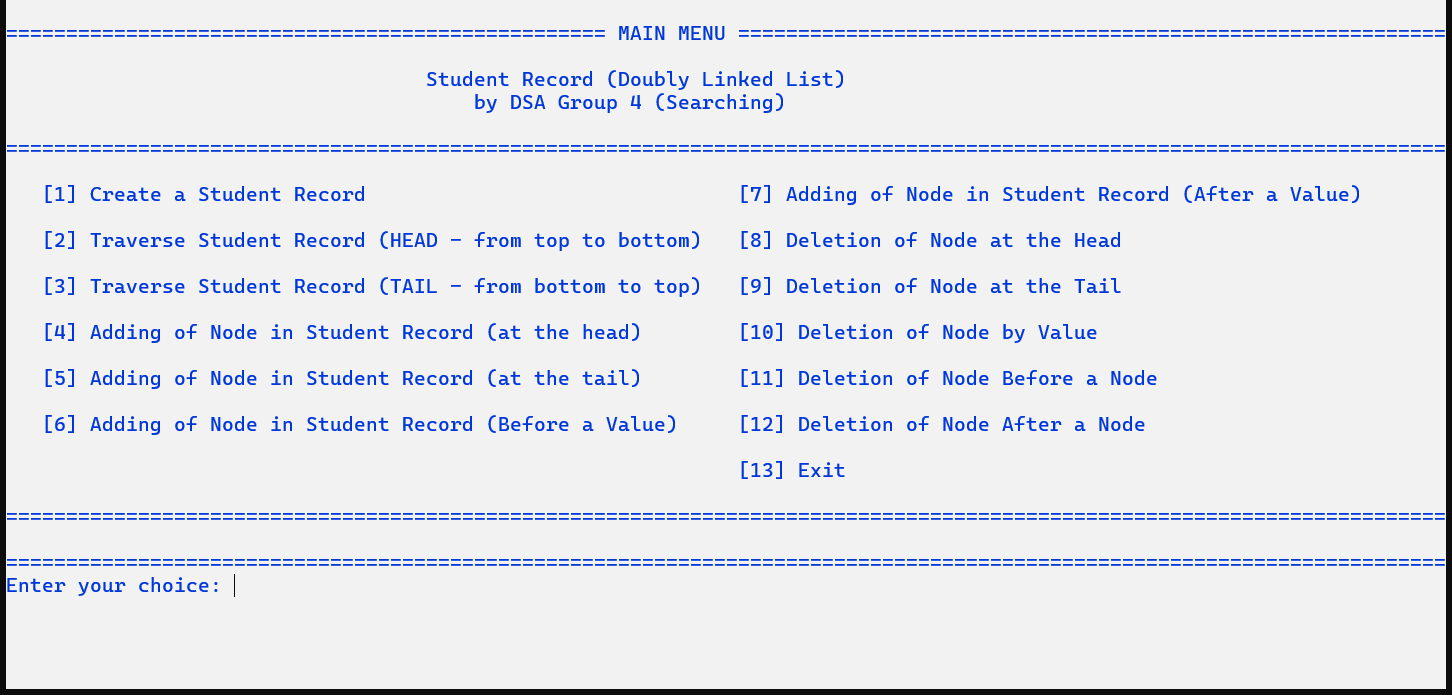


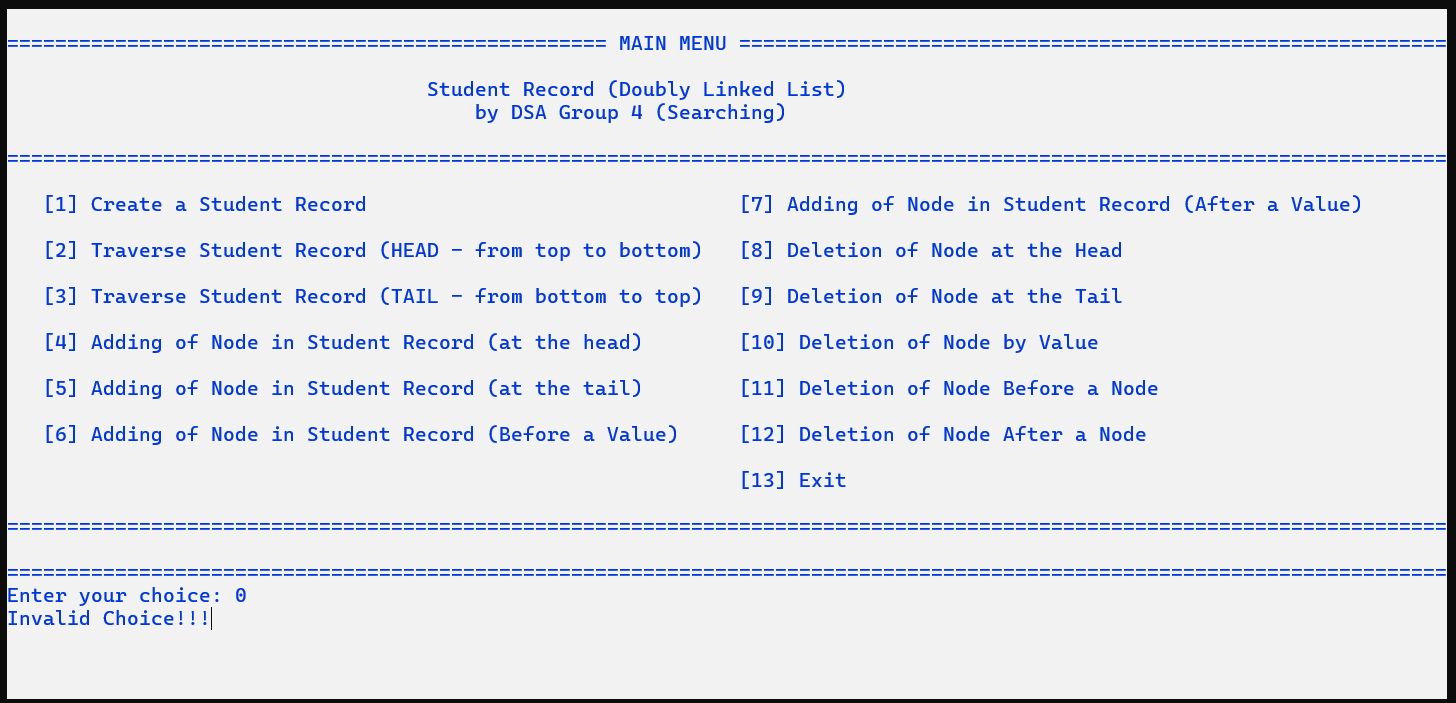






Output



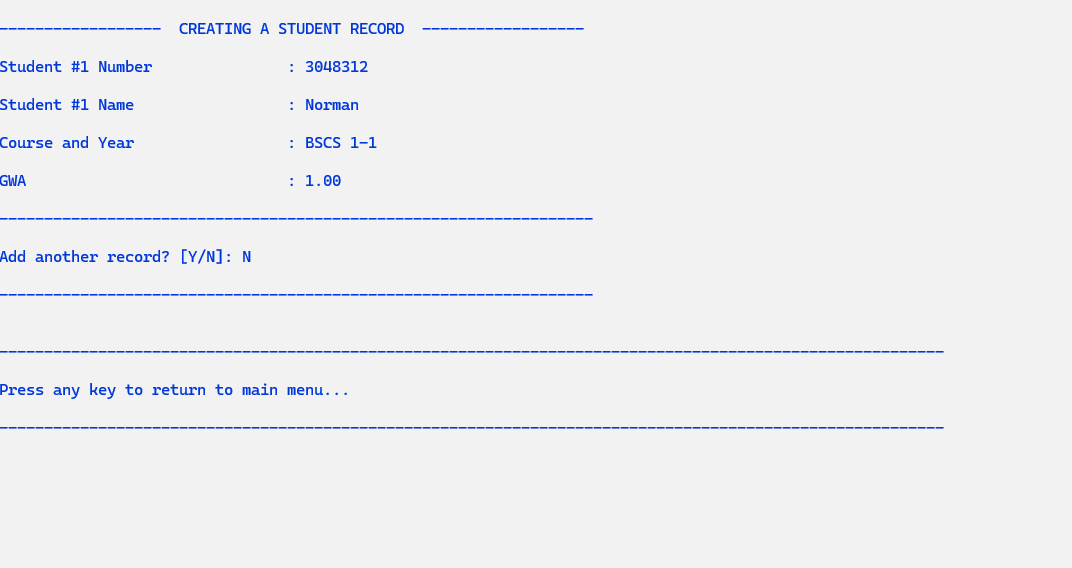


*(Figure 1: Main Menu – Functions)*

1. Creation of Double/Doubly Linked List

Source Code in C++

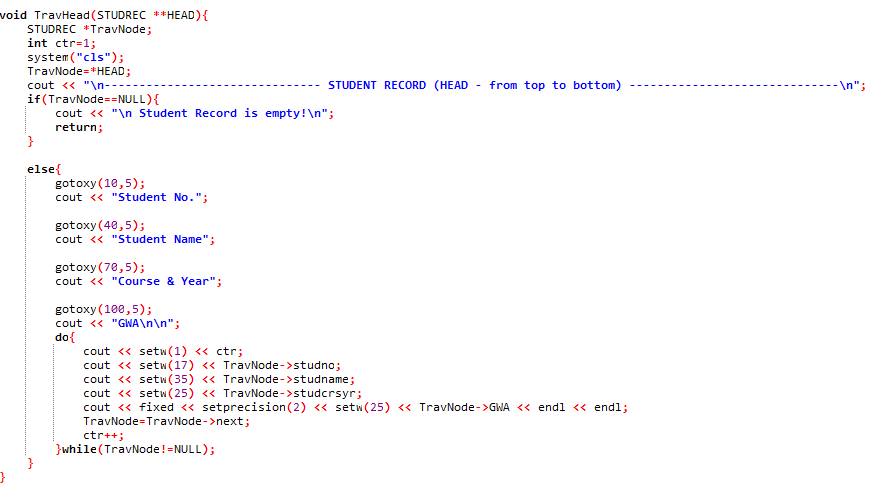


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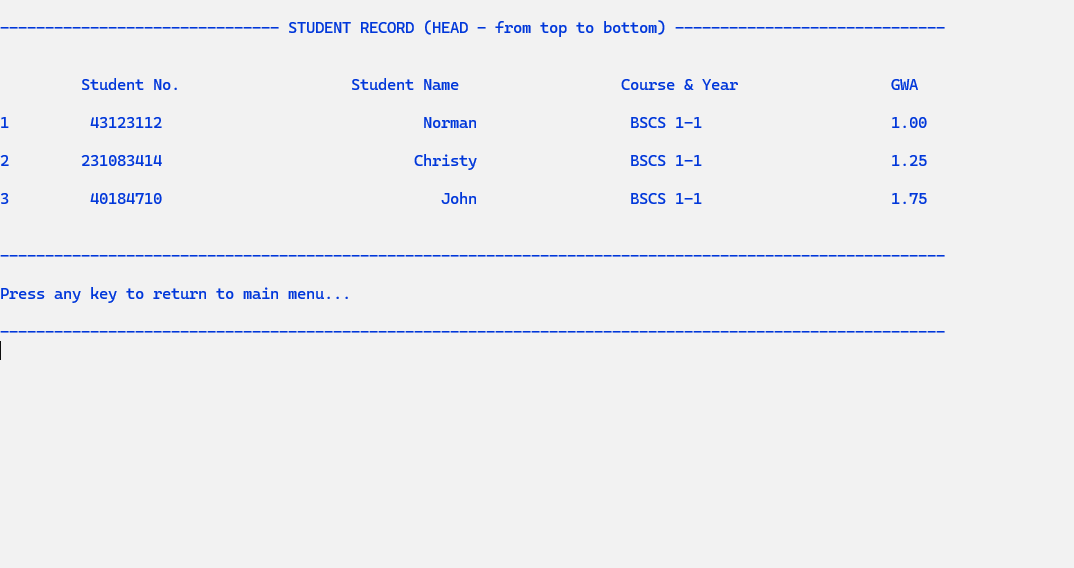
*(Figure 2: Main Menu– Selecting “Create a Student Record” Option)*

1. Traversal of Double/Doubly Linked List (Head - Top to Bottom)

Source Code in C++



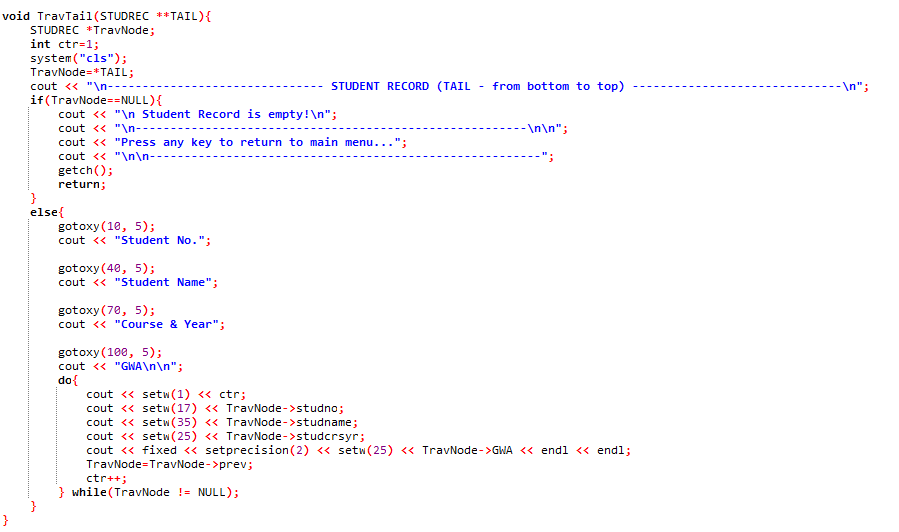
Output

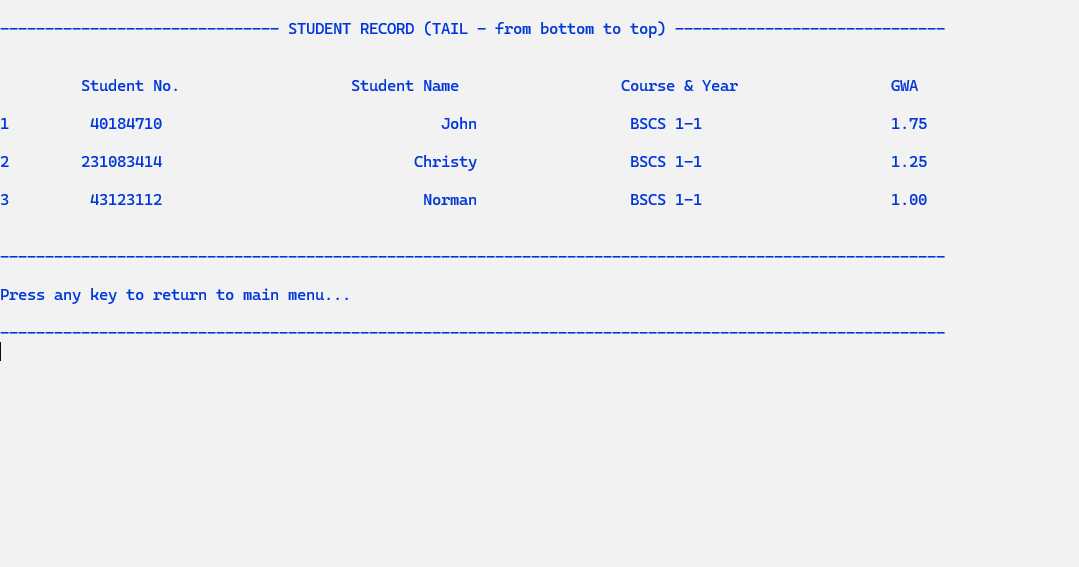


*(Figure 3: Displaying the Student’s GWA Report in Tabulated Format)*

1. Traversal of Double/Doubly Linked List (Tail - Bottom to Top)

Source Code in C++

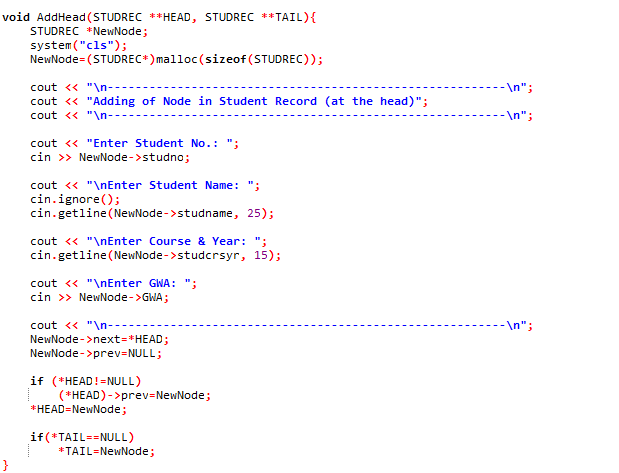


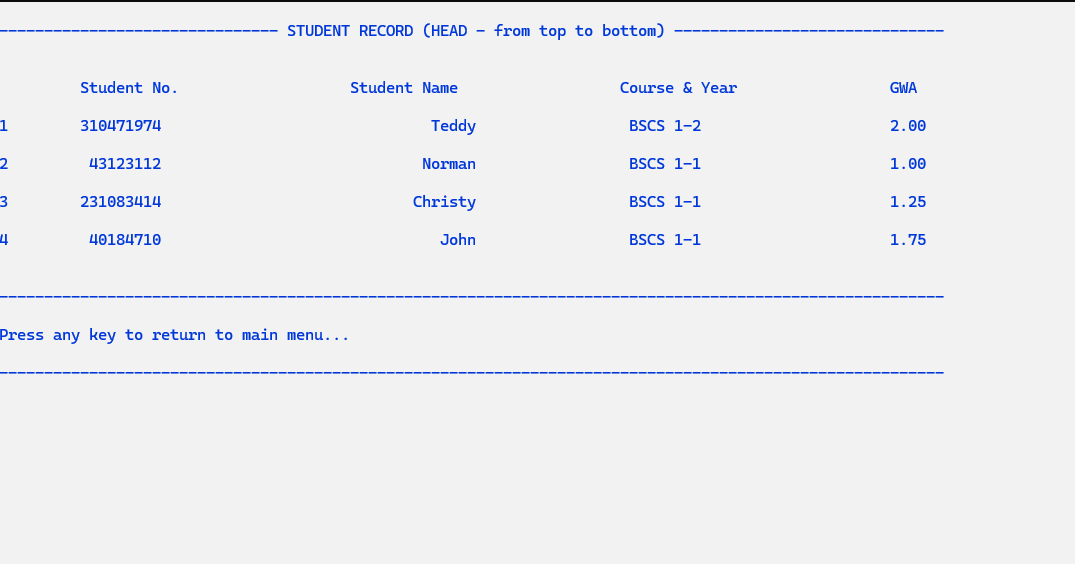
Output

*(Figure 4: Displaying the Student’s GWA Report in Tabulated Format)*

1. Adding/Insertion of Node in Double/Doubly Linked List (at the Head)

Source Code in C++

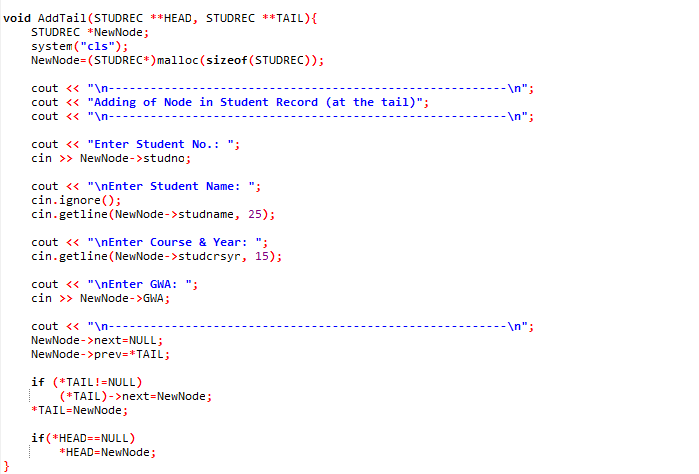


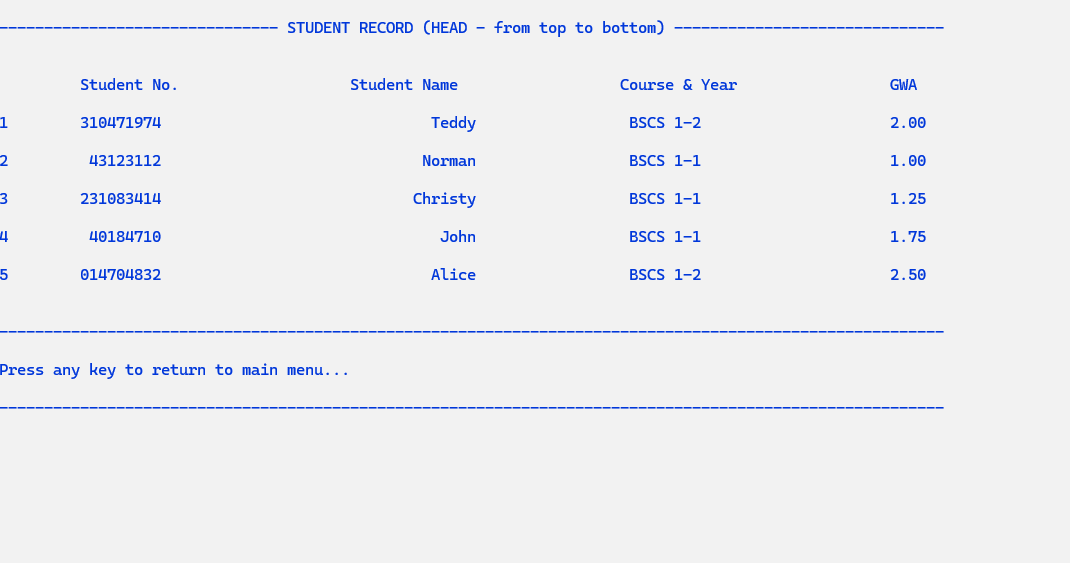
Output

*(Figure 5: Displaying the New Student Record Added at the Start of the Node)*

1. Adding/Insertion of Node in Double/Doubly Linked List (at the Tail)

Source Code in C++

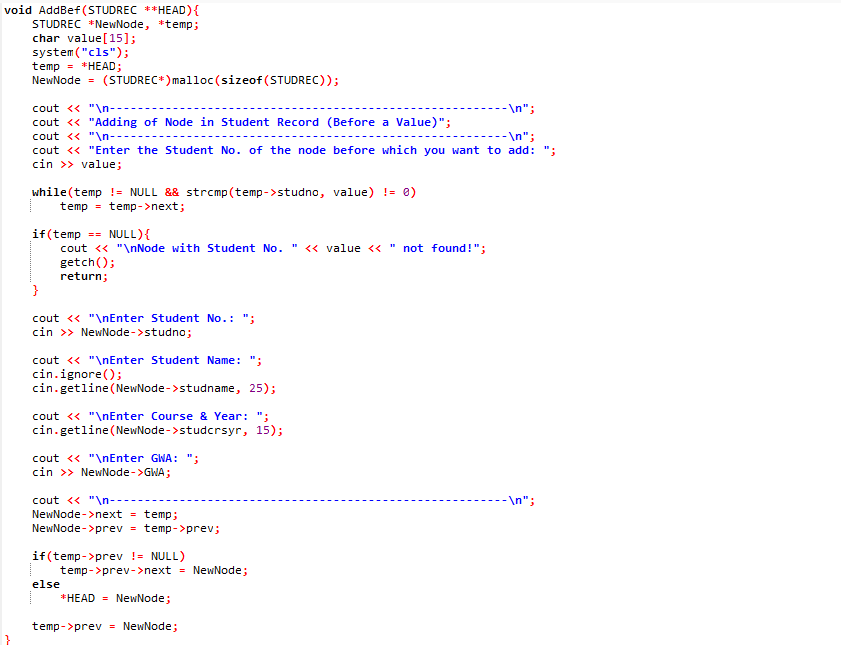


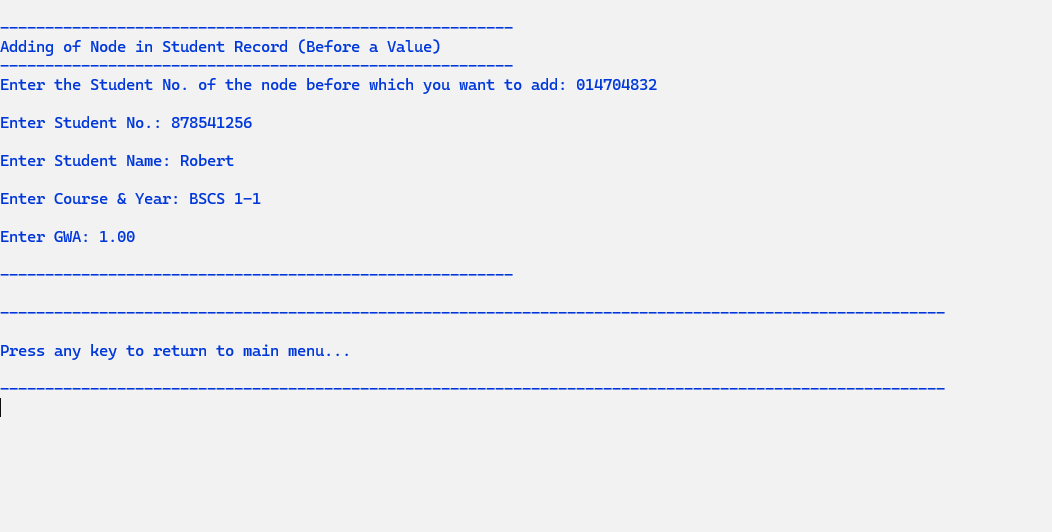
Output

*(Figure 6: Displaying the New Student Record Added at the End of the Node)*

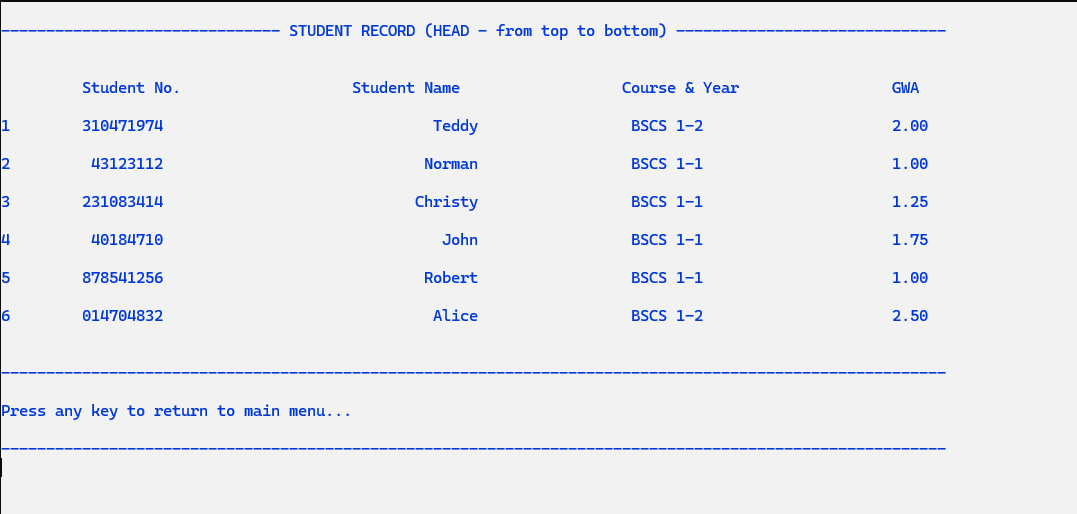
1. Adding/Insertion of Node in Double/Doubly Linked List (Before a Value/Data)

Source Code in C++



Output

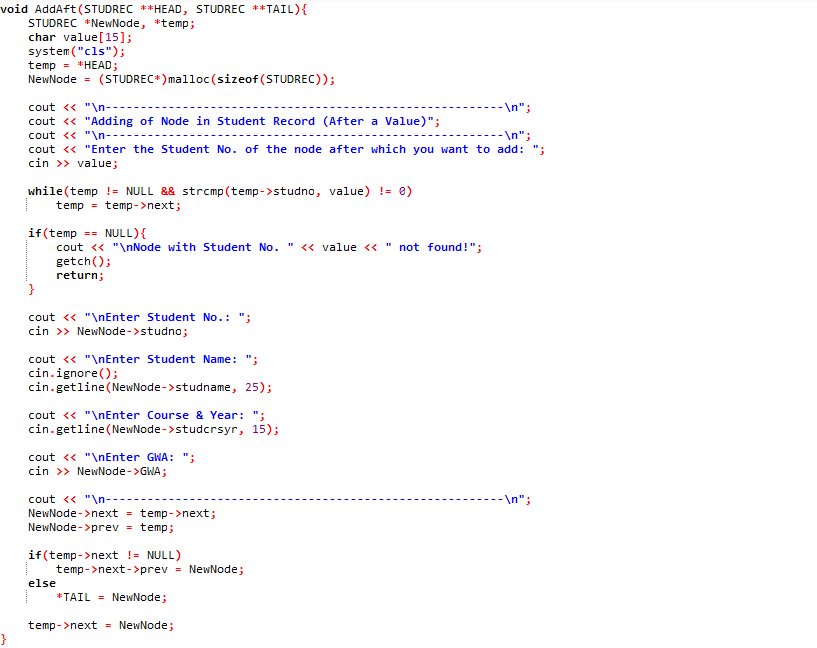
*(Figure 7: Inserting a New Record Before the Specified Node Operation)*

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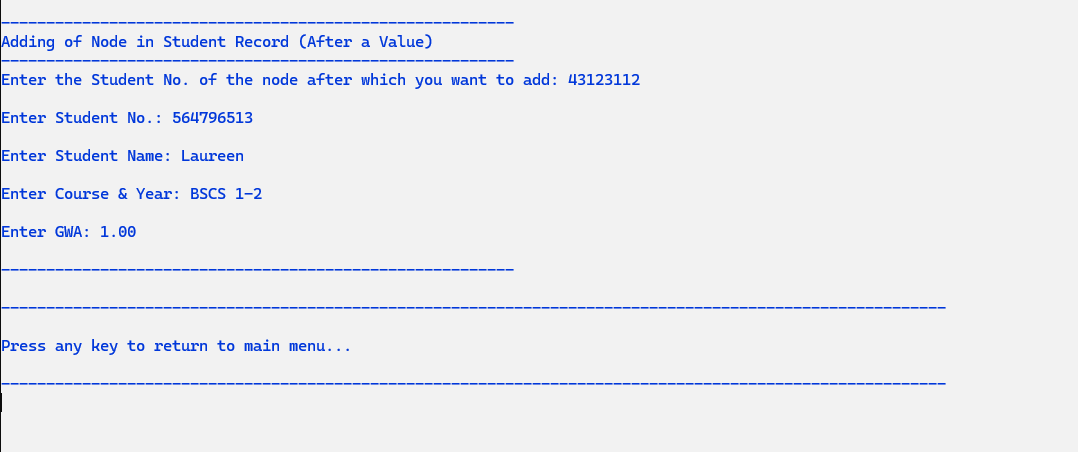
*(Figure 7.1: Displaying the New Student Record Added Before the Specified Node)*

1. Adding/Insertion of Node in Double/Doubly Linked List (After a Value/Data)

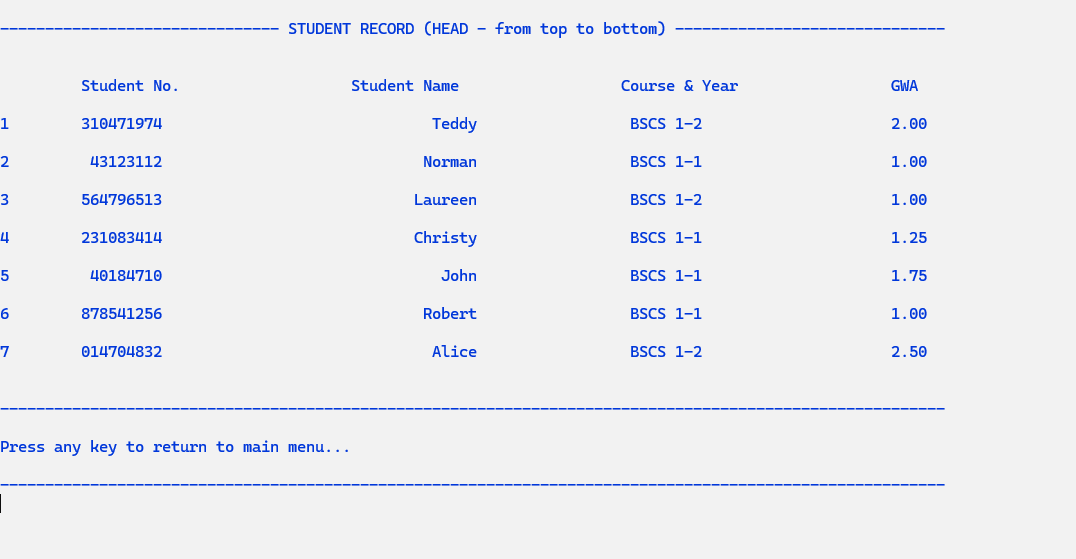
Source Code in C++



Output



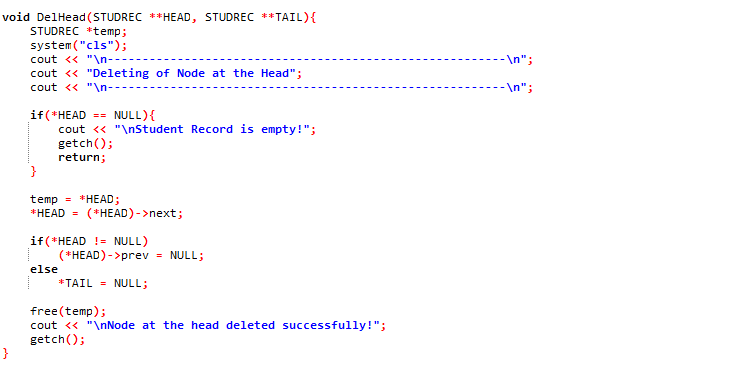
*(Figure 8: Inserting a New Record After the Specified Node Operation)*



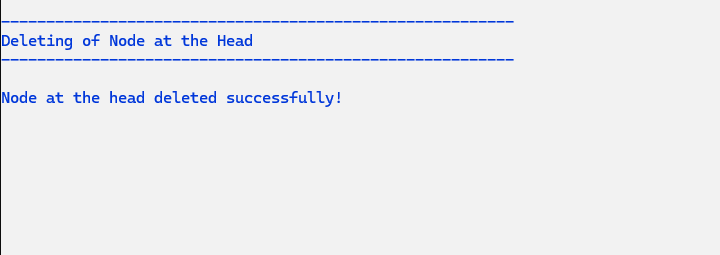
*(Figure 8.1: Displaying the Student’s GWA Report in Tabulated Format)*

1. Deletion of Node in Double/Doubly Linked List (at the Head)

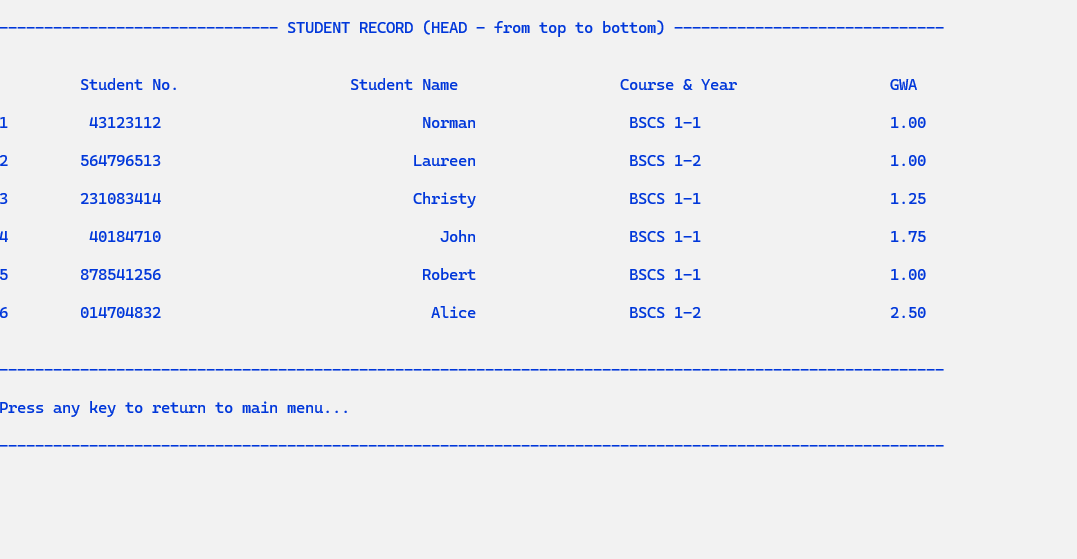
Source Code in C++



Output

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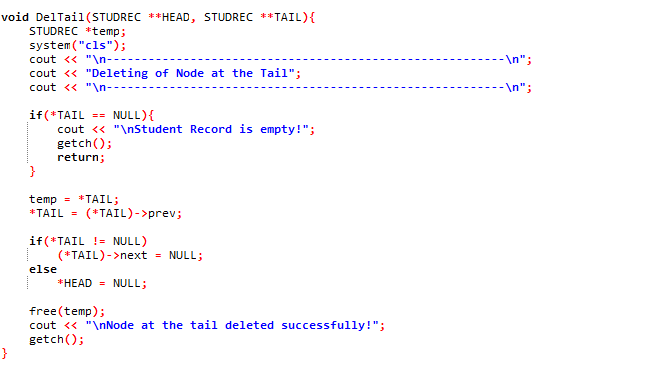
*(Figure 9: “Deletion of Node at the Start” Option)*

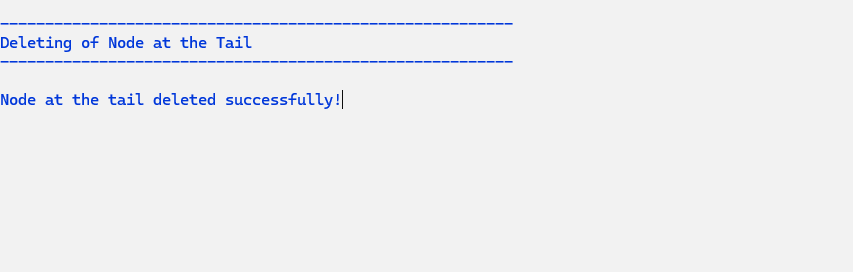
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*(Figure 9.1: Displaying the New Student Record Added After Deleting the Node at the Start)*

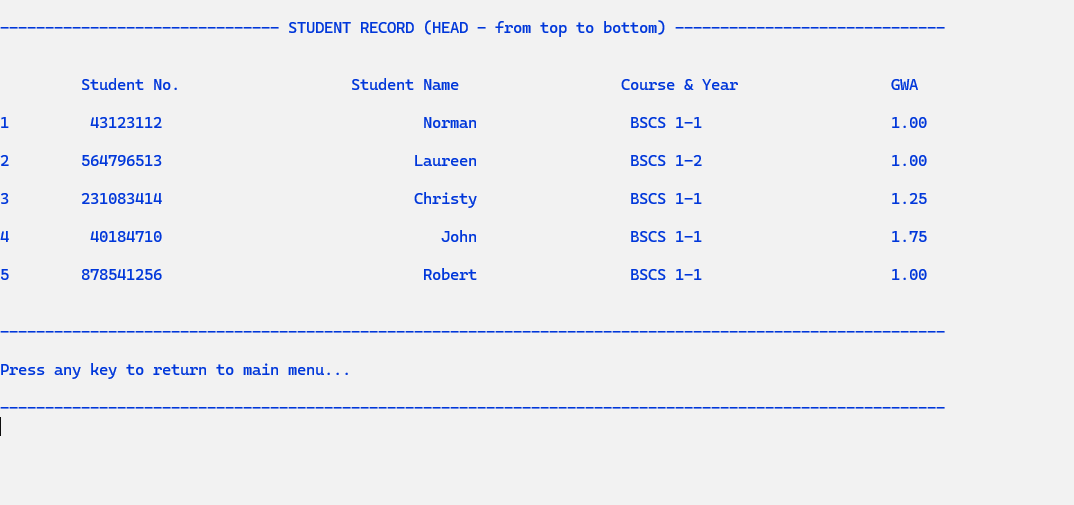
1. Deletion of Node in Double/Doubly Linked List (at the Tail)

Source Code in C++



Output

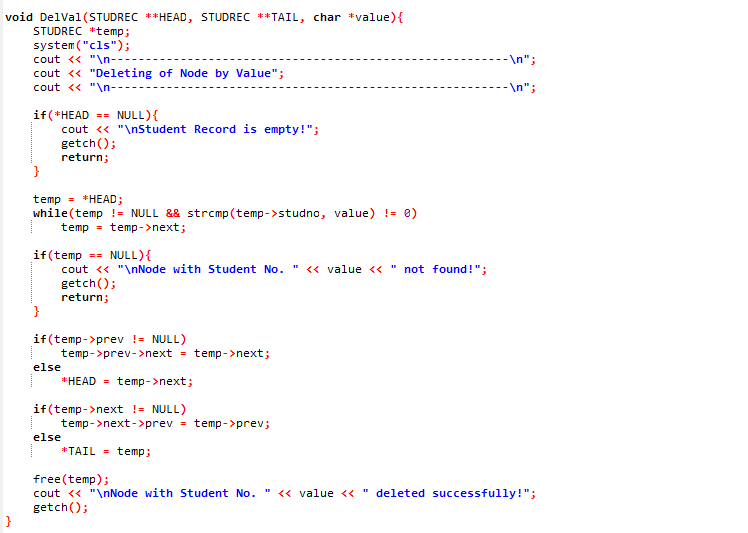
*(Figure 10: “Deletion of Node at the End” Option)*

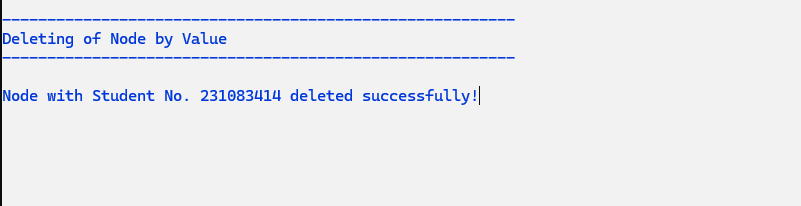
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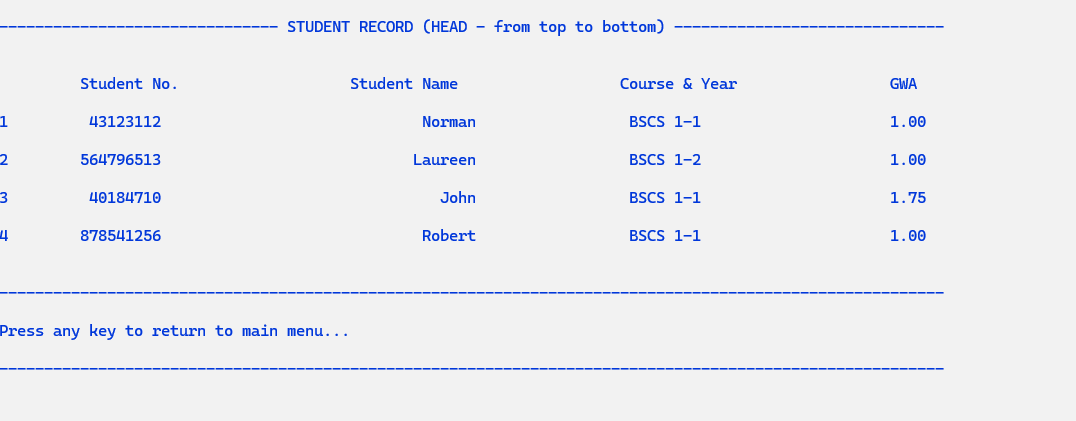
*(Figure 10.1: Displaying the New Student Record Added After Deleting the Node at the End)*

1. Deletion of Node in Double/Doubly Linked List (by Value)

Source Code in C++



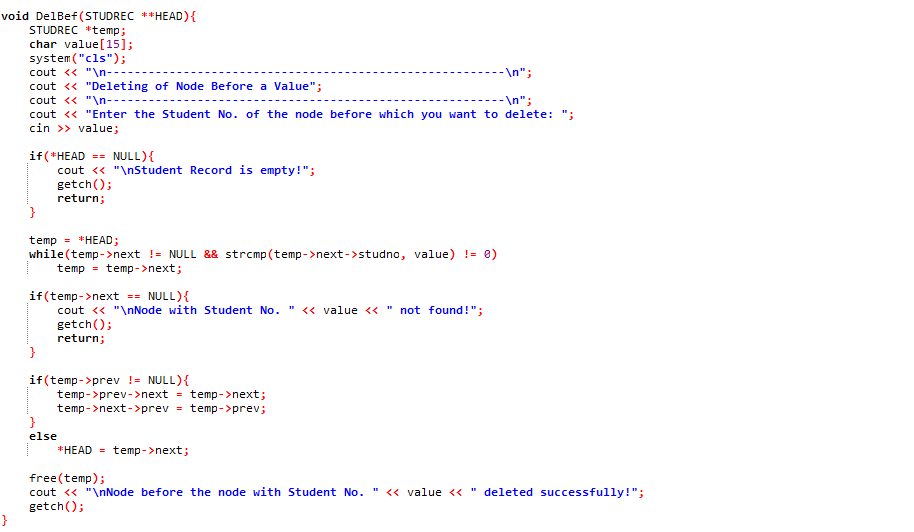
Output

*(Figure 11: “Deletion of Node by Value” Option)*

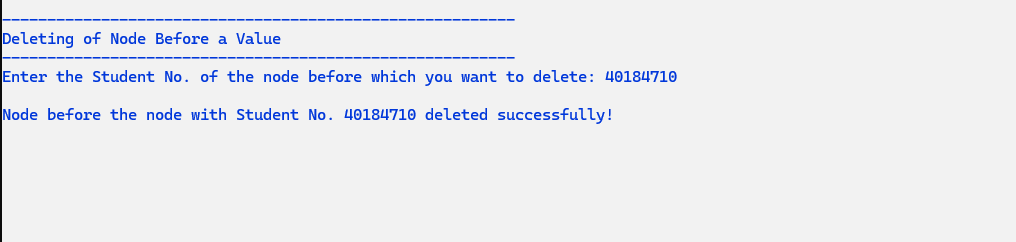
*(Figure 11.1: Displaying the New Student Record Added After Deleting the Node by Value)*

1. Deletion of Node in Double/Doubly Linked List (Before a Node)

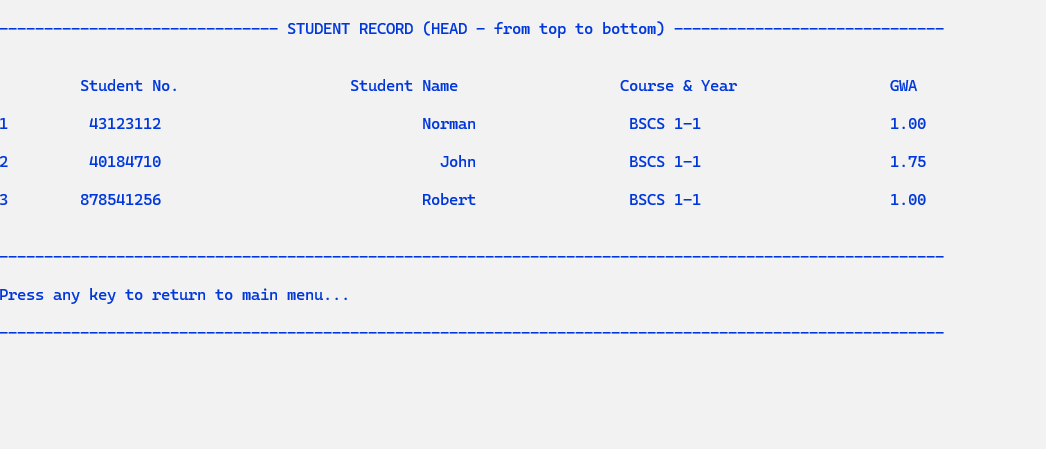
Source Code in C++



Output



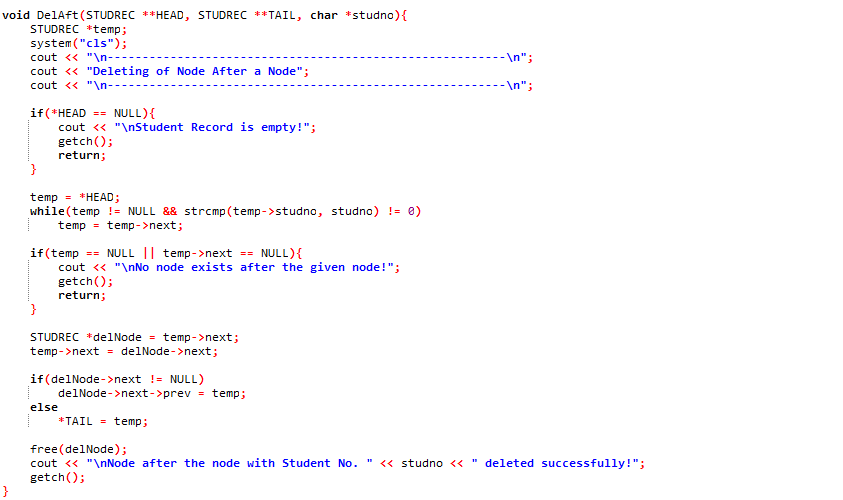
*(Figure 12: “Deletion of Node Before a Node” Option)*

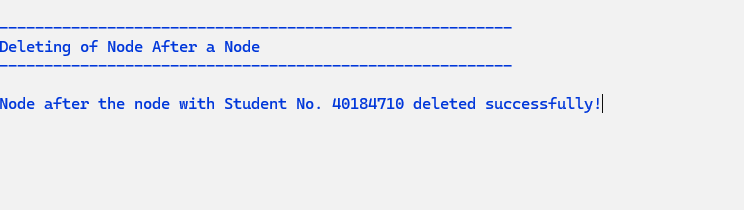
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*(Figure 12.1: Displaying the New Student Record Added After Deleting the Node Before a Node)*

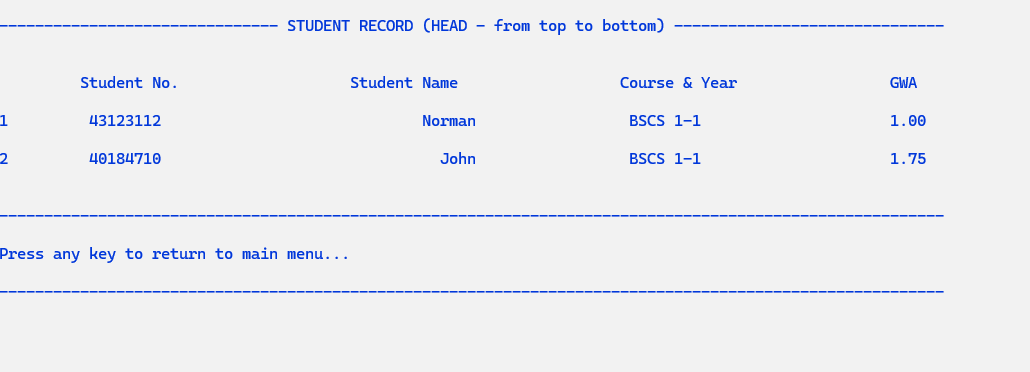
XII. Deletion of Node in Double/Doubly Linked List (After a Node)

Source Code in C++



Output

*(Figure 13: “Deletion of Node After a Node” Option)*

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*(Figure 13.1: Displaying the New Student Record Added After Deleting the Node After a Node)*