**Logo

Description automatically generated San Francisco Bay University**

**CS350 - Data Structures**

**Homework Assignment #1**

**Due day: 2/5/2023**

**Instruction:**

1. **Push the source code to Github**
2. **Please follow the code style rule like programs on handout.**
3. **Overdue homework submission could not be accepted.**

**4. Take academic honesty and integrity seriously (Zero Tolerance of Cheating & Plagiarism)**

1. Write a program to delete all elements in a given linked list with the value same as input argument ***key***, such as input linked list *a = "Head->1->2->1->3->NULL".* After calling function or a method in a class**, *Delete\_LinkList\_Node*** *(a, 1),* the new linked list will be *"Head->2->3->NULL".*

Hint: take example programs as reference

2. Find a program to delete all duplicated value elements including itself in a linked list, such as *a = "Head->1->2->1->3->2->NULL".* After calling function or a method in a class, such as ***Delete\_Node\_value****(a),* the new linked list will be *"Head->3->NULL".*

3. Create a program to delete all duplicated elements in a linked list, such as *a = "Head->1->2->1->3->2->NULL"*. After calling function or a method in a class***, Delete\_Dupl\_Node(a),*** the new linked list will be *"Head->1->2->3->NULL".*

4. Write a program to reverse the element sequence for given linked list, like *a = "Head->1->2->3->NULL"*. Through calling function or a method in a class**, *Reverse\_Node(a),*** the new linked list will be *"Head->3->2->1->NULL"*.

5. From given a linked list with integer value nodes, calculate average value, for instance, input linked list *a = "Head->1->2->3->NULL".* By calling functionor a method in a class, ***Average\_List***(a),average value is (1+2+3) / 3=2.0 (floating data type).