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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
|  | **Course:** | **Data Structures** | **Course Code:** | **CS218** |
| **Program:** | **BS(Computer Science)** | **Semester:** | **Spring 2021** |
| **Due Date:** | **30-March-2021** | **Total Marks:** | **10** |
| **Section:** | **4G and 4H** | **Weight (Tentative)** | **3%** |
| **Evaluation:** | **Assignment-02** | **Page(s):** | **2** |
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|  | **Submission Path: Google classroom** | | | |

Question 01: Doubly Linked List

1. **Concatenate Two Doubly Linked Lists**

Write a function to concatenate two linked lists. Given lists List\_1 = (2, 3, 1) and List\_2 = (4, 5), after return from **concatenate(List\_1, List\_2)** the list List\_1 should be changed to be List\_1 = (2, 3, 1, 4, 5). **Your function should not change List\_2** and should not directly link nodes from List\_1 to List\_2 (i.e. the nodes inserted into List\_1 should be copies of the nodes from List\_2.)

1. **Remove all but a key**

Write a function to remove all nodes from a doubly linked list except a key passed to the function. Given myList=(6, 3, 5, 2, 3, 4, 3), after calling RemoveAllBut(key=3) the list myList should be changed to myList=(3,3,3);