

**Introduction to Basic Data Structures**

# **Module 10.5: Practice Day 01**

**(Practice Questions)**

**Topics:**

1. Doubly Linked List

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***Practice Problem 1***

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**Question:** Take two doubly linked lists as input and check if they are the same or not.

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| --- | --- |
| **Sample Input** | **Sample Output** |
| 10 20 30 40 50 -1  10 20 30 40 50 -1 | YES |
| 10 20 30 40 50 -1  10 20 30 40 -1 | NO |
| 10 20 30 40 -1  10 20 30 40 50 -1 | NO |
| 10 20 30 40 -1  40 30 20 10 -1 | NO |
| 1 2 3 4 5 -1  5 4 1 2 6 -1 | NO |

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***Practice Problem 2***

**Question:** Take a doubly linked list as input and reverse it. After that print the linked list.

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| --- | --- |
| **Sample Input** | **Sample Output** |
| 10 20 30 -1 | 30 20 10 |
| 10 20 30 40 -1 | 40 30 20 10 |

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***Practice Problem 3***

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**Question:** Take a doubly linked list as input and check if it forms any palindrome or not.

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| --- | --- |
| **Sample Input** | **Sample Output** |
| 10 20 30 20 10 -1 | YES |
| 10 20 30 30 20 10 -1 | YES |
| 10 20 30 40 20 10 -1 | NO |
| 10 20 30 20 40 -1 | NO |
| 10 20 30 10 10 -1 | NO |
| 10 20 20 20 10 -1 | YES |

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***Practice Problem 4***

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**Question:** You have a doubly linked list which is empty initially. You need to take a value Q which refers to queries. For each query you will be given X and V. You will insert the value V to the Xth index of the doubly linked list and print the list in both left to right and right to left. If the index is invalid then print “Invalid”.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| 6  0 10  1 20  4 30  0 30  1 40  5 50 | 10  10  10 20  20 10  Invalid  30 10 20  20 10 30  30 40 10 20  20 10 40 30  Invalid |

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***Practice Problem 5***

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**Question:** Take a doubly linked list as input and sort it in ascending order. Then print the list.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| 1 4 5 2 7 -1 | 1 2 4 5 7 |
| 20 40 30 10 50 60 -1 | 10 20 30 40 50 60 |