Introduction to Basic Data Structures

Module 6.5: Practice Day 01

(Practice Questions)

Topics:

1. Singly Linked List

Practice Problem 1

Question: Take a singly linked list as input and print the size of the linked list.

Sample Input	Sample Output
2 1 5 3 4 8 9 -1	7
5 1 4 5 -1	4

Practice Problem 2

Question: Take a singly linked list as input and check if the linked list contains any duplicate value. You can assume that the maximum value will be 100.

Sample Input	Sample Output
5 4 8 6 2 1 -1	NO
2 4 5 6 7 4 -1	YES

Practice Problem 3

Question: Take a singly linked list as input and print the middle element. If there are multiple values in the middle print both.

Sample Input	Sample Output
2 4 6 8 10 -1	6
1 2 3 4 5 6 -1	3 4

Practice Problem 4

Question: Take a singly linked list as input, then take q queries. In each query you will be given an index and value. You need to insert those values in the given index and print the linked list. If the index is invalid print "Invalid".

Sample Input	Sample Output
10 20 30 -1 7 1 40 5 50 4 50 0 100 7 40 1 110 7 40	10 40 20 30 Invalid 10 40 20 30 50 100 10 40 20 30 50 Invalid 100 110 10 40 20 30 50 100 110 10 40 20 30 50 40

Practice Problem 5

Question: Take a singly linked list as input and check if the linked list is sorted in ascending order.

Sample Input	Sample Output
1 5 6 8 9 -1	YES
2 4 6 5 8 4 -1	NO