

DATA STRUCTURES & ALGORITHMS

#09

Linked List

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| Student Name: |
| Roll Number: Section: |
| Work submitted on: |

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| **Maximum Marks** | **Performance** | **Viva** | **Total** |
| **Marks Obtained** |  |  |  |
| **Remarks (if any)** |  | | |
|  | | | |
| **Experiment evaluated by** | | | |
| Instructor Name: | | | |
| Signature: | | | |

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| Linked List Related Tasks |

**Task1**: Write a function to count the number of nodes in a linked list.

Example:

Input: 1 -> 2 -> 3 -> 4 -> 5 -> None

Output: 5

**Task2**: Write a function to find the sum of all elements in a linked list.

Example:

Input: 3 -> 7 -> 2 -> 1 -> None

Output: 13

**Task3**: Write a function to check if a linked list is empty.

Example:

Input: None

Output: True

**Task4**: Write a function to add a new node at the beginning of a linked list.

Example:

Input: 2 -> 4 -> 6 -> None

New node: 1

Output: 1 -> 2 -> 4 -> 6 -> None

**Task5**: Write a function to find the maximum value in a linked list.

Example:

Input: 5 -> 9 -> 2 -> 7 -> 1 -> None

Output: 9