Assignment 6

1. Write a program to detect a cycle in a linked list.
2. Write a program to segregate even and odd nodes in a linked list.
3. Write a program to find the intersection point of two linked lists.
4. Write a program to remove duplicates from an unsorted linked list.
5. Write a program to rotate a linked list clockwise by \(k \) nodes.
6. Write a program to sort a linked list that contains 0s, 1s, and 2s by changing links.
7. Write a program to check if a linked list is a palindrome.
8. Write a program to find the n^{th} node from the end of a linked list.
9. Write a program to implement a doubly linked list with operations to add, remove, and display nodes.
10. Write a program to implement a linked list where a node consists of a student's data (like name, age, and score).
11. Create a linked list to manage inventory items for a small store. Each node should hold information about the product, such as the product ID, name, quantity, and price. Provide functions to add new products, delete products, and restock products.
12. Write a program to manage an emergency room queue using a linked list. Each node represents a patient with attributes like patient ID, name, and emergency level. Patients should be sorted by emergency level. Provide functions to add a patient, treat the next patient, and display the queue.