Tutorial 6: Circular and Doubly Linked Lists

Circular linked list

1. What are the advantages of a circular linked list over a normal linked list?
2. How do the nodes of a circular linked list differer from the nodes of a normal singly linked list?
3. Write a C function to traverse a circular linked list.
4. Trace the function written in question 3 as it traverses a circular linked list containing of 1, 2, 3.
5. Write a C function to insert a node at the end of a circular list.
6. Trace the function written in question 5 as it inserts a node at the end a circular linked list of 1, 2, 3.
7. Write a C function to delete a node at the beginning of a circular list.
8. Trace the function written in question 7 as it deletes a node from the beginning of a circular linked list containing 1, 2, 3.
9. Write a C function to delete a node at the middle of a circular list.
10. Trace the function written in question 9 as it deletes a node from the middle of a circular linked list containing 1, 2, 3.

Doubly Linked Lists

11. What are the advantages of a doubly linked list over a singly linked list?
12. What are the disadvantages of a doubly linked list over a singly linked list?
13. What three things does the node of a doubly linked list have to store?
14. Write a C function to traverse a doubly linked list.
15. Trace the function written in question 14 as it traverses a doubly linked list containing of 1, 2, 3 in a forward direction.
16. Write a C function to insert a node at the beginning of a doubly list.
17. Trace the function written in question 16 as it traverses a doubly linked list containing of 1, 2, 3 in a forward direction.

18. Write a C function to insert a node at the beginning of a doubly list.
19. Trace the function written in question 18 as it inserts a node from the beginning of a doubly linked list on of 1, 2, 3.
20. Write a C function to insert a node at the end of a doubly list.
21. Trace the function written in question 20 as it inserts a node at the end a doubly linked list on of 1, 2, 3.
22. Write a C function to insert a node at the middle of a doubly list.
23. Trace the function written in question 22 as it inserts a node from the middle of a doubly linked list on of 1, 2, 3.
24. Write a C function to delete a node at the beginning of a doubly list.
25. Trace the function written in question 24 as it deletes a node at the beginning a doubly linked list on of 1, 2, 3.