DS Programming Assignments using C language .Compiler: Any

01. Implement strcmp() - compare two strings function.
02. Implement strcmpi() - compare two strings case-insensitive function.
03. Implement strrev() - string reverse function.
04. Implement selection sort function.
05. Implement bubble sort function.
06. Implement insertion sort function.
07. Implement quick sort function.
08. Implement merge sort function.
09. Implement binary search algorithm using recursion.
10. Implement binary search algorithm without using recursion.
11. Perform add_first() and display() operation on singly linked list.
12. Perform add_last() and display() operation on singly linked list with head and tail.
13. Perform del_first() and display() operation on doubly linked list.
14. Perform del_last() and display() operation on doubly linked list with head and tail.
15. Perform add_last() and del_first() operation on doubly circular list.
16. Reverse singly linked list (by traversing only once).
17. Reverse singly linked list using recursion.
18. Find the middle element of the singly linked list (by traversing only once).
19. How to find a loop in the singly linked list?
20. Perform add() operation in binary search tree without recursion.
21. Perform add() operation in binary search tree using recursion.
22. Perform preorder(), inorder() and postorder() operation in binary search tree using recursion.
23. Perform preorder operation in binary search tree without using recursion.
24. Perform inorder operation in binary search tree without using recursion.
25. Perform postorder operation in binary search tree without using recursion.
26. Write a macro to swap two elements / integers in various ways.
27. How to swap two string?
28. Allocate memory for 2-D array using malloc().
29. Write a code for sorting singly linked list.
30. Write a code for delete a node from binary search tree.
31. Write a code to convert infix to prefix and infix to postfix.
32. Write a code to evaluate prefix and postfix.
33. Write code for bfs() and dfs() for binary search tree.
34. In 2-D array elements are arranged sequentially from 1 to 25.

01 02 03 04 05
06 07 08 09 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25

A. Write a program to print in spiral way (use single loop) i.e. 01, 02, 03, 04, 05, 10, 15, 20, 25, 24, 23, 22, 21, 16, 11, 06, 07, 08, 09, 14, 19, 18, 17, 12, 13

B. Write a program to print in zig-zag way (use single loop) i.e. 01, 02, 06, 11, 07, 03, 04, 08, 12, 16, 21, 17, 13, 09, 05, 10, 14, 18, 22, 23, 19, 15, 20, 24, 25