

Serialized Linked List Data Structure

Implement a program in C++ to serialize one or more link lists in the file on disk which will let user perform following operations through command line:

- Add a new list
- Display a given list
- Add a node to any given list
- Remove a node from a list
- Remove a list
- Exit program

Additional requirements:

- Provide optimal solution. Always read and update the file as and when necessary, to avoid in-memory foot print.
- Nodes can be added in between any of the link lists, keep the link lists sorted. There is no upper bound to the no. of nodes in a list.
- Reuse deleted node space from other linked list when adding new nodes
- Don't use stl list or third party libraries for serialization

Assumptions:

- All nodes are of same size for simplicity. Node in the list contains integer data.
- Each list has an integer ID to identify it.
- Use single or double link list as appropriate
- For simplicity leave the file fragmented when nodes or link list is deleted