

1 | Experiential Learning Component

1.1 | UNIT II : Experiential Learning - 6

[Level-1: 2Q, Level-2: 2Q, Level-3: 1Q]

1. **LEVEL - 1 : Implementing Queue ADT with SLL:** Design and implement a queue ADT (Abstract Data Type) using a singly linked list.
 - Hint: Define the queue interface and use the linked list to handle the elements.
2. **LEVEL - 1 : Circular Queue Using DLL:** Implement a circular queue using a doubly linked list where the last node points back to the first node.
 - Hint: Exploit the two-way linkage for efficient circular operations.
3. **LEVEL - 2 : Dynamic Array Linear Queue:** Program a linear queue using a Dynamic array, implementing enqueue and dequeue operations.
 - Hint: Use modular arithmetic for index management and consider the case when the queue is full or empty.
4. **LEVEL - 2 : Singly Linked List Dequeue:** Code a dequeue (double-ended queue) using a singly linked list that allows insertion and deletion from both ends.
 - Hint: Maintain two pointers for the front and rear to handle both ends efficiently.
5. **LEVEL - 3 : Simple Priority Queue with DLL:** Implement a priority queue using a doubly linked list to facilitate quick insertion and removal according to priority.
 - Hint: Take advantage of the flexibility of a doubly linked list for ordered insertions.