

## Lab 05 – Queue Applications

1. **Deque – Double Ended Queue:** Write a simple JAVA program implementing dequeue of integers with the following functions –
  - a. deleteLeft(), deleteRight(), addLeft(), addRight()
  - b. display()
2. **Priority Queue:** Write a JAVA program to implement an ascending priority queue. An ascending priority queue is a collection of items into which items can be inserted arbitrarily and from which only the smallest item can be removed.
3. **Restricted Deque:** Implement 2 JAVA classes for the following:
  - a. **Output Restricted Queue:** Queue of strings with the following conditions:
    - i. addRight(), addLeft(), deleteLeft() are allowed
    - ii. deleteRight() not allowed ( or deleteLeft() vice-versa )
  - b. **Input Restricted Queue:** Queue of strings with the following conditions:
    - i. deleteRight(),deleteLeft(), addRight() are allowed
    - ii. addLeft() not allowed ( or addRight() vice-versa )
4. **Palindrome check using Deque:** Implement a JAVA deque program to check whether a given string is a palindrome or not.
5. Write a simple JAVA program to reverse a queue using only the following standard operations:
  - a. enqueue(int x);
  - b. dequeue();
  - c. empty(); // to check if the queue is empty