Department of Statistics & Computer Science

University of Kelaniya

ACADEMIC YEAR -2023/2024 (Semester I)

COSC 21063 / BECS 21223 / COST 44233 / COST 44303

Data Structures and Algorithms

Practical Tutorial 03

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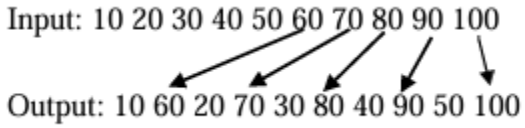
1. Write a Java program to remove all duplicate elements from a queue.
   Example:
   Input : [10, 20, 10, 10, 30, 40, 50, 40, 50, 50, 10, 20, 20]
   Output: [10, 20, 30, 40, 50]

2. Rearrange the elements of an even-length queue of integers by interleaving the first and second half of the queue.



3. Write a Java program to delete the middle digit of a number using a **circular queue**.
   Example:
   Input: 12345
   Output: 1245

4. Write a program using **the List data structure** to find the mean, median, mode, and range of the user-given dataset.
   Example: 10, 9, 52, 24, 35, 11, 9, 12, 3, 11, 25, 24, 8, 11, 42
   Mean - 19.066668 Median – 11.0 Mode - 11 Range – 49

5. Write a program to find the second largest element in a user-given list and then print the given list in descending order using **List operations**.
   Example: 10, 8, 7, 20, 15, 4
   Output: Second largest number – 15
   Descending order – 20, 15, 10, 8, 7, 4