Rubric for Assignment #1

CLO-3: *Apply the knowledge of data structure to other application domains.*
Cognitive Level: C-3 (*Applying*)
Total Marks: 20
Course: CS-6313 — Data Structures
Instructor: Ms. Farwa Javed
Semester: Fall 2024

Rubric Table

Assessment Criteria	Performance Indicators (Aligned with CLO-3: Applying)	Marks
1. Application of Data Structure Concepts	Correctly applies stack and deque concepts to given **real-world case studies** (Parking Lot, Print System, AI Formula Conversion). Demonstrates understanding of how data structures solve domain-specific problems.	**5 marks**
2. Algorithm Design / Logical Implementation	Translates conceptual understanding into **accurate pseudocode and algorithmic logic** (insert/delete/convert). Shows clear steps for each operation.	**3 marks**
3. Practical Implementation (C++ Code)	Implements required programs for Deque, Restricted Queue, and Stack Conversions correctly. Handles **overflow/underflow** and mode restrictions properly.	**6 marks**
4. Problem Application & Dry-Run Demonstration	Accurately traces algorithm execution using **dry-run tables** showing stack or queue states. Demonstrates how the structure operates on **domain data** (e.g., car IDs, print jobs, symbolic expressions).	**3 marks**
5. Output Verification & Interpretation	Output results are **correct, meaningful, and contextually valid** for the application scenario. Includes screenshots or test cases showing proper working.	**2 marks**
6. Professional Presentation & Documentation	Well-structured report with labeled sections, clear comments, and concise explanations connecting data structures to practical usage.	**1 mark**

Total: 20 Marks

Performance Levels

Level	Descriptor	Score Range
Excellent (Exceeds Expectation)	Effectively applies data structures to all real-world cases with correct logic, dry runs, and strong contextual explanations.	**17–20**
Good (Meets Expectation)	Correct implementation with minor logical or formatting gaps. Shows understanding of data structure application.	**13–16**
Satisfactory (Basic Achievement)	Partial or incomplete implementation. Demonstrates limited application of data structures to given domains.	**9–12**
Needs Improvement (Below Expectation)	Incorrect or missing application logic; lacks connection between code and real-world problem.	**≤8**