

Solutions

2.1 A Choose the structure for the required access pattern. Complexity depends on implementation and assumptions: removing the first item from a shifting array differs from advancing a head pointer in a queue.

2.2 $\text{remaining} = \text{enqueued} - \text{dequeued} = 7 - 4 = 3$ items; no underflow occurs.

2.3 False. An ADT is not a specific memory layout. A queue does not sort by priority unless its contract defines a priority queue.

2.4 stack. stack means A last-in-first-out abstract data type.

3.1 Queue removes A then B; C remains. Stack removes B then C; A remains. An empty removal needs a defined exception or result, not invented data.