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DATA STRUCTURES AND ALGORITHMS – EXERCISE No4 - REFLECTIONS

Stack

Reflection:

A stack preserves the most recent activity because of its **LIFO (Last In, First Out)** rule. The most recently added item is at the top and is therefore the first to be removed. This matches many real-world undo/back behaviors. When you undo, you want to reverse the most recent change first. In programming, stacks also naturally model function-call behavior. The last function called is the first to finish and return, so the runtime uses a stack for call frames.

Queue

Reflection:

FIFO (First In, First Out) is tied to fairness because it serves people in the exact order they arrived, which is an impartial, predictable rule. In contexts like voting lines or service counters, FIFO prevents cutting and reduces disputes. If everyone follows arrival order, nobody is unfairly prioritized. For critical services (banking, government offices, restaurants), FIFO gives transparency. People can see their position and expect to be served in turn.