

REFLECTION QUESTION

Reflection: Why stack cannot handle queues of clients?

A **stack** cannot effectively handle a queue of clients because it operates on the **Last-In, First-Out (LIFO)** principle, while a client queue requires a **First-In, First-Out (FIFO)** principle.

LIFO vs. FIFO

- **Stack (LIFO):** The last element (client) to enter the structure is the first one to be processed (e.g., an undo history in software). If used for clients, the most recently arrived client would always be served first, leaving earlier clients waiting indefinitely, which is unacceptable for fairness.
- **Queue (FIFO):** The first element (client) to enter the structure is the first one to be processed (e.g., a line at a bank or a printer job spool). This principle ensures that clients are served in the order they arrived, which is the definition of a fair client service system.