

Software Engineering
UE23CS341A
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Architecture Selection:

I chose layered architecture for the Self-Service Coffee Kiosk System.

Architectural Choice:

The layered architecture is divided into 3 layers:

1. Presentation Layer: This consists of the Touchscreen UI component.
2. Business Layer: This consists of the Order Manager, Payment Service and Printer Controller components.
3. Data Layer: This consists of the Menu Database component.

Two Reasons:

1. Simple, low complexity system: The Self-Service Coffee Kiosk System is a stand-alone system that must run locally. It doesn't require a central server to communicate with other systems (client-server architecture) or a distributed deployment (microservices architecture).
2. Separation of Concerns: Layered architecture makes it easier to separate UI, data storage and the business aspect. This helps with ease in design and maintenance.

Security Advantage:

Having multiple layers prevents direct user interaction with Payment Service and Menu Database. This reduces the attack surface and allows strict security controls to be exercised.

Performance Benefit:

Due to the lack of communication with a central server (which requires network access), menu querying and order processing is faster. This allows for faster UI responsiveness and fast receipt printing.