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Designing Billing State Machines for Subscription Platforms

Systems Design Brief • Youssef Ibrahim • 2025

Problem space

Billing systems must keep user entitlements, webhook events, retries, reconciliation logic, and financial state transitions aligned under partial failure.

Design themes

Idempotency, defensive handlers, observable transitions, centralized business rules, and auditable payout flows.

Takeaway

A subscription system is not just payments plumbing. It is product state management under trust-sensitive constraints.