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Scenario: Rebuild Facebook with Limited CPU/Storage

Describe your approach, trade-offs, and design decisions for rebuilding Facebook under severe resource constraints.

Purpose: Test prioritization, constraints, and efficiency.

Summary

Identify core engagement flows (e.g., posting text). Use offline batch processing for feeds. Cache content aggressively. Disable media uploads and real-time notifications.

Feature Prioritization

- Only implement critical flows: user registration, text posts, basic feed
- Exclude media sharing, stories, live video, and search

Storage Constraints

- Use compression and columnar storage
- Apply TTL (time-to-live) for old content
- Use sparse indices and flat key-value storage

CPU Constraints

- Avoid synchronous processing; batch and schedule background jobs
- Use precomputed feeds and summaries

Ranking & Feed

- Use simplified heuristic ranking instead of ML models
- Limit interactions to top N users

Monitoring & Logging

- Minimal or disabled logging to save storage

Metrics for Success

- Track user engagement on core features
- Monitor system resource usage (CPU, storage, network)
- Measure latency and error rates for critical flows