

## Case Study-40 Database Technology

### Performance Bottlenecks & Slow Queries



#### The Problem:

Growing workloads or poor database design often cause:

- ✗ Slow query execution
- ✗ High CPU/IO usage
- ✗ Blocking & deadlocks
- ✗ Customer-facing latency issues

When the database slows down, the entire business slows down.



#### The Solution:

Modern database tuning and architecture eliminate bottlenecks:

- ✓ Index optimization & query refactoring
- ✓ Partitioning & sharding for large datasets
- ✓ Caching layers (Redis, Memcached)
- ✓ Moving to columnar or distributed engines when needed
- ✓ Real-time performance monitoring

Outcome: Faster transactions, higher throughput, and smooth user experience.