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| **Aspect** | **Technologies/Approach** | **Details** |
| **C#** | **Generics, Delegates, LINQ, Asynchronous Programming (async/await), and Reflection,generic list dictionary (name count word, swipe word, count space in word), Yield, abstraction & encapsulation, covariance- contravariance, jagged array, “throw” “throw ex”, var & Dynamic, Anonymous type, null and nullable types?** | |
| **Frontend** | Angular with MSAL Library  RxJs,Observer, promises,p-c-p relation, MCDSP | - Use MSAL for Azure AD authentication, local & session storage |
| - Manage tokens for secure API calls & state management |
| **Logging** | Serilog, Azure Application Insights | - Structured logging. |
| - Centralized monitoring with telemetry. |
| **Monitoring** | Azure Monitor, Application Insights | - Real-time insights and health checks (/health). |
| **Inter-Service Communication** | REST, gRPC (synchronous) | - REST/gRPC for low-latency sync communication. |
| Azure Service Bus, Kafka (asynchronous) | - Service Bus/Kafka for event-driven, decoupled messaging. |
| **Transaction Management** | Saga Pattern, Outbox Pattern | - Distributed transactions with Azure Service Bus or Kafka. |
| **Service Discovery** | Consul, Azure Traffic Manager | - Service registry and load balancing. |
| **API Management** | Azure API Management | - Centralized API gateway for security, throttling, and caching. |
| **Deployment** | AKS, Azure App Service, Azure Functions | - AKS for scalable containers. |
| - App Service for web apps/APIs. |
| - Functions for lightweight, event-driven tasks. |
| **Multi-Region Load Balancer** | Azure Front Door, Azure Traffic Manager | - Intelligent traffic routing across regions. |
| **Database** | Azure Cosmos DB | - Global distribution, multi-region writes, and low-latency |
|  | Azure SQL Server | - **Elastic pools**, **partitioning**, **replication**, and **sharding** for scalability. |
| **Caching** | Azure Cache for Redis | - Reduce database load. |
| **Security** | Azure AD, Identity Server, Azure Key Vault | - Authentication with Azure AD. |
| - Secrets management via Key Vault. |
| **Resilience** | Polly | - **Retry policies and circuit breakers**. |
| **Code Quality** | SonarQube | - Monitor code smells, bugs, vulnerabilities, and unit test coverage. |
| **Design Patterns** | Singleton, Factory, Repository, Unit of Work, Strategy, Adapter, bridge, composit, decorator, façade, fliyweigh Proxy, mediator, memento, interpreter, iteratory, chain of responsibility, command, state, strategy, observer, template method, visitor, GOF, cloud design pattern | |
| **Architectural Patterns** | MVC, Clean Architecture, Domain-Driven Design | - Modular and scalable system design. |
| **Event-Driven Architecture** | Event Sourcing, CQRS (with Azure Service Bus/RabbitMQ) | - Decouple read and write operations. |
| - Store state changes as events. |
| **ASP.NET Core Features** | Dependency Injection, Middleware Optimization, Configuration Management  - Optimize performance and modularity. | |
| **MVC & SQL Server** | Actionfilter, Action result, view data view bag, tempdata, routing (attributued based routing), User- Role authorization, Indexing, Joins, self join, delete duplicate row, 2nd highest salary, rownumber rank dense rank, temp table table variable, sp & function, Query , optimization steps..., sql query profiler, tuning advisor,Advanced SQL querying, indexing strategies, partitioning for large datasets.  NoSQL Databases: Azure Cosmos DB, designing partition keys, consistency models.  Data Migration: Strategies for migrating on-premise databases to Azure SQL or Cosmos DB.  Database Optimization: Analyzing query performance, identifying slow queries, and using tools like SQL Profiler. Moq, xUnit | |