Monolithic Architecture

Principles

- KISS
- YAGNI
- DRY

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all for all of the items in shopping cart
- Checkout the shopping cart and create an order
- List my old orders and order items history

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count

Layered Architecture

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all for all of the items in shopping cart
- Checkout the shopping cart and create an order
- List my old orders and order items history

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Service Oriented Architecture

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- ESB

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Microservices Architecture

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Microservices Architecture - API Gw

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

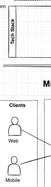
Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Microservices Architecture - API Gw - BFF

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF



Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Microservices Architecture - Service Aggregator / Registry Patterns

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF
- Service Aggregator Pattern
- Service Registry Pattern

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Microservices Architecture - Message Broker

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF
- Service Aggregator Pattern
- Service Registry Pattern
- Dependency Inversion Principles (DIP)
- Publish-Subscribe Design Pattern

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Microservices Architecture - Database Sharding Cassandra

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF
- Service Aggregator Pattern
- Service Registry Pattern
- Dependency Inversion Principles (DIP)
- Publish-Subscribe Design Pattern
- Database Sharding Pattern

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability

Microservices Architecture - CQRS, Event Sourcing, Eventual Consistency

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF
- Service Aggregator Pattern
- Service Registry Pattern
- Dependency Inversion Principles (DIP)
- Publish-Subscribe Design Pattern
- Database Sharding Pattern
- Polygot Persistence
- Materialized View Pattern
- CQRS Design Pattern
- Event Sourcing Pattern
- Eventual Consistency Principle

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability
- high scalability
- high availability
- accept eventual consistency

Event-Driven Microservices Architecture

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF
- Service Aggregator Pattern
- Service Registry Pattern
- Dependency Inversion Principles (DIP)
- Publish-Subscribe Design Pattern
- Database Sharding Pattern
- Polygot Persistence
- Materialized View Pattern
- CQRS Design Pattern
- Event Sourcing Pattern
- Eventual Consistency Principle
- Event-Driven Microservices Architecture
- Event Hub - Event Backbone Pattern
- Reactive Design

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability
- High availability
- High availability
- Accept eventual consistency
- Real-time processing
- Stream-processing
- Big Data from Data Lakes
- Decrease latency
- Increase speed of application

Microservices Distributed Caching

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF
- Service Aggregator Pattern
- Service Registry Pattern
- Dependency Inversion Principles (DIP)
- Publish-Subscribe Design Pattern
- Database Sharding Pattern
- Polygot Persistence
- Materialized View Pattern
- CQRS Design Pattern
- Event Sourcing Pattern
- Eventual Consistency Principle
- Event-Driven Microservices Architecture
- Event Hub - Event Backbone Pattern
- Reactive Design
- Distributed Caching

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability
- High scalability
- High availability
- Accept eventual consistency
- Real-time processing
- Stream-processing
- Big Data from Data Lakes
- Decrease latency
- Increase speed of application

Event-Driven Microservices Architecture with Containers and Orchestrators

Principles

- KISS
- YAGNI
- DRY
- SoC
- SOLID
- Database per Microservices
- Gateway Routing pattern
- Gateway Aggregation pattern
- Gateway Offloading pattern
- API Gateway Pattern
- Backends for Frontends pattern BFF
- Service Aggregator Pattern
- Service Registry Pattern
- Dependency Inversion Principles (DIP)
- Publish-Subscribe Design Pattern
- Database Sharding Pattern
- Polygot Persistence
- Materialized View Pattern
- CQRS Design Pattern
- Event Sourcing Pattern
- Eventual Consistency Principle
- Event-Driven Microservices Architecture
- Event Hub - Event Backbone Pattern
- Reactive Design
- Distributed Caching
- Containerization
- Orchestration

Functional Requirements

- List products
- Filter products as per brand and categories
- Put products into the shopping cart
- Apply coupon for discounts and see the total cost all

Non-Functional Requirements

- Scalability
- Increase Concurrent user request count
- Maintainability
- High scalability
- High availability
- Accept eventual consistency
- Real-time processing
- Stream-processing
- Big Data from Data Lakes
- Decrease latency
- Increase speed of application
- Containerize microservices
- Orhestrate microservices