Domain Driven Design

Agenda

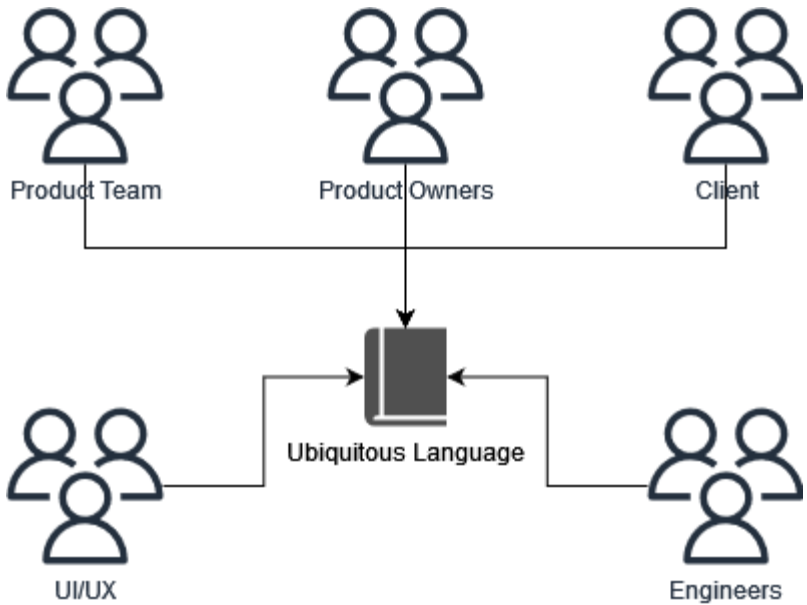
- Introduction to Domain-Driven Design
- Ubiquitous Language
- Bounded Context
- Entities, Value Objects, and Aggregates
- Events
- Strategic Design
- Implementing DDD
- Benefits of DDD
- Challenges and Considerations
- Challenges and Considerations (cont.)
- Q&A

Introduction to Domain-Driven Design

- What is DDD?
- Key concepts
  - Ubiquitous Language
  - Bounded Context
  - Entities, Value Objects, and Aggregates
  - Domain Events

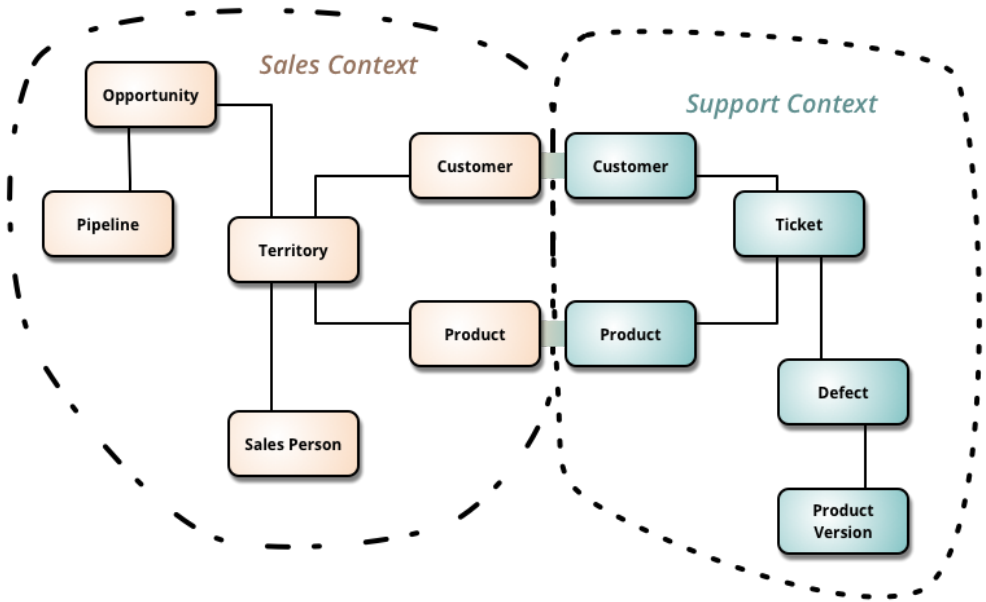
Ubiquitous Language

A common, shared language between developers and domain experts



Bounded Context

A boundary within which a particular model and set of terms apply.



Entities, Value Objects, and Aggregates

Entities

Objects that have a distinct identity

e.g. Product

Color: Red

Weight: 0.5kg

Sr #: 12345

Color: Red

Weight: 0.5kg

Sr #: 95316

Value Objects

Objects without a distinct identity; defined by their attributes

e.g. Price

Currency: PKR

Value: 30

Currency: PKR

Value: 30

Aggregates

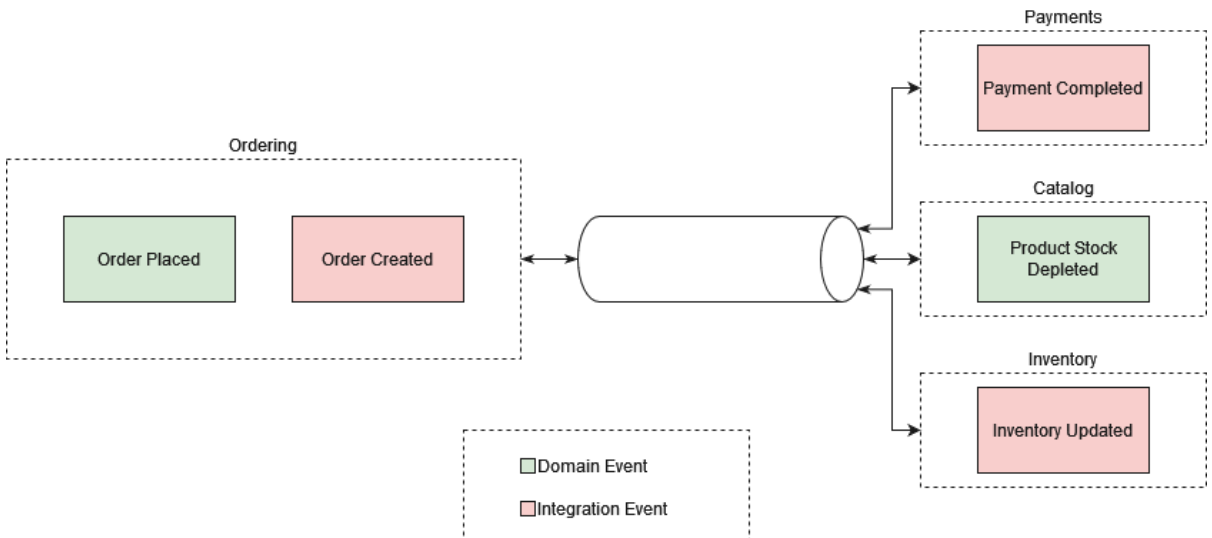
Clusters of related entities and value objects

e.g. Order

Order
+DateTime OrderDate
+Address Address
+int BuyerId
+OrderStatus OrderStatus
+string Description
+bool IsDraft
+List OrderItems
+int PaymentMethodId

Events

An event that captures a state change WITHIN/BETWEEN the bounded context(s)

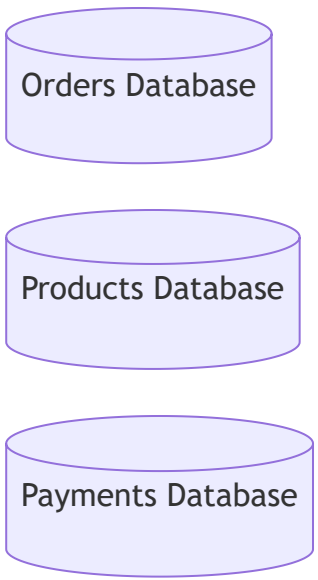


Strategic Design

The high-level design decisions that shape the architecture and organization of the software

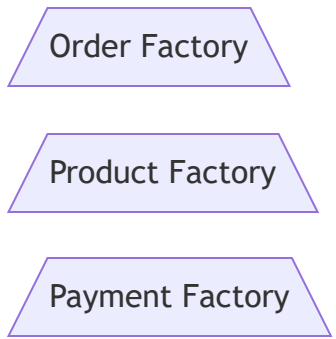
Aggregates

Repositories



Services

Factories



Implementing DDD

Identify the Core Domain

Create a Ubiquitous Language

Define Bounded Contexts

Design Entities, Value Objects, and Aggregates

Implement Domain Events

Apply Strategic Design Principles

Benefits of DDD

- Alignment with Business Needs
- Clear and Shared Understanding
- Modularization
- Maintainability
- Flexibility and Adaptability
- Enhanced Testing

Challenges and Considerations

Challenge	Consideration
Learning Curve	Trainings for DDD Concepts
Domain Expert Availability	Collaborations/Include Domain Experts in discussions
Identifying Bounded Contexts	Start with a clear understanding. Improve with strategic design
Scalability and Microservices	Message based communication between contexts/microservices
Modeling Complexity	Start simple; improve with Domain Experts’ input

Challenges and Considerations (cont.)

Challenge	Consideration
Legacy Systems	Gradual adoption using bounded contextx
Persistence and Data Access	Repositories / Event Sourcing
Cultural Change	Culture of thinking in DDD
Over-Engineering	Apply DDD principles in moderation

Q&A