

## Domain Objects (entities + view models)

@DomainObject @DomainObjectLayout  
@ViewModel, @ViewModelLayout  
@Property, @PropertyLayout  
@Collection, @CollectionLayout  
@Action, @ActionLayout  
@Parameter, @ParameterLayout, @Parent  
@Title, @MemberOrder, @MemberGroupLayout  
@HomePage, @MinLength, @Programmatic  
@javax.inject.Inject – inject services into object  
@javax.annotation.Nullable  
@javax.validation.constraints.Digits  
  
@lombok.Data; @lombok.Builder;  
@lombok.AllArgsConstructor

## Layout

*Xxx.layout.xml* more flexible than @XxxLayout  
title(), iconName(), cssClass()

## Domain Entities (javax.jdo.annotation)

@PersistenceCapable, @DatastoreIdentity  
@Inheritance, @Discriminator; @Version  
@Queries, @Query;  
@Uniques, @Unique; @Indices, @Index  
@Persistent, @NotPersistent  
@Column, @PrimaryKey, @Join, @Element  
@XmlJavaTypeAdapter(PersistentEntityAdapter.class)  
[www.datanucleus.org/products/datanucleus/jdo/annotations.html](http://www.datanucleus.org/products/datanucleus/jdo/annotations.html)

## JAXB View Models (javax.xml.bind.annotation)

@XmlRootElement; @XmlType  
@XmlAccessorType; @XmlTransient

## Domain Services

@DomainService @DomainServiceLayout  
@Action, @MemberOrder (not props or colls)  
@PostConstruct; @PreDestroy (javax.annotation)  
@javax.enterprise.context.RequestScoped  
@javax.inject.Inject – inject services into service

## Domain Service Subscribers

AbstractSubscriber convenience superclass  
@org.axonframework.eventhandling.annotation.EventHandler  
@com.google.common.eventbus.Subscribe

## Mixins

@Mixin; 1-arg constructor of the mixee  
Mixin props or colls require @Action(semantic=SAFE)

## Methods: Actions

placeOrder(X x, Y y, Z z)  
hidePlaceOrder(); disablePlaceOrder()  
validate{0|1|2}PlaceOrder(X|Y|Z);  
validatePlaceOrder(X x, Y y, Z z)  
autoComplete{0|1|2}PlaceOrder(X,Y)  
choices{0|1|2}PlaceOrder(X,Y) (n-1 args)  
default{0}PlaceOrder()

## Methods: Properties

@lombok.Getter, @lombok.Setter;  
getName(), setName();  
hideName(); disableName(); validateName()  
autoCompleteName(), choicesName()

## Methods: Collections

@lombok.Getter, @lombok.Setter;  
getOrders(); hideOrders(); disableOrders();

## Events

@DomainObject(xxxLifecycleEvent=....)  
@DomainObjectLayout(xxxUiEvent=....)  
@Action(domainEvent=....) @Property(domainEvent=...)  
@Collection(domainEvent=...)

## RepositoryService

allMatches(Query) & QueryDefault(...), persist(), remove(),  
instantiate()

## MessageService

informUser(), warnUser(), raiseError()

## (some) other Applib Services

FactoryService, TitleService, ClockService,  
ConfigurationService, BookmarkService, EventBusService,  
BackgroundService, EmailService, MetaModelService,  
IsisJdoSupport, WrapperFactory, TransactionService,  
CommandContext, ActionInvocationContext  
QueryResultsCache, Scratchpad,

## Error & Exception Handling

RecoverableException, NonRecoverableException

## Value Types

8 primitive types + wrappers; BigDecimal, BigInteger;  
java.util.Date, java.sql.{Date|Time|Timestamp}; enums;  
JODA dates; org.apache.isis.value.\*

## Bootstrapping

AppManifest; WEB-INF/isis.properties; WEB-INF/shiro.ini