

# Full stack DDD

with ASP.NET Core and Angular

Simple. Clear. Software.

# About me



Ronald Harmsen

Developer / Consultant / Trainer @ NForza

Web development >= 1997

Everything .NET >= 2004

Azure >= 2009

Others: DevOps, Software Quality, Software & Enterprise Architecture

# Domain Driven Design

# Focus on frontend

With ASP.NET Core, JavaScript Services & Angular

# Why DDD?

The screenshot shows three Microsoft Access tables stacked vertically:

- Products**: Shows two rows of data: Product ID 1 Chai and Product ID 2 Chang, both supplied by Exotic Liquids.
- Customers**: Shows two rows of data: Alfreds Futterkiste (Contact Name Maria Anders) and Ana Trujillo Emparedados y helados (Contact Name Ana Trujillo).
- Orders**: Shows three rows of data. Order 10248 (Customer Wilman Kala, Employee Buchanan, Steve) is selected. Other orders include 10249 (Customer Tradição Hipermercados, Employee Suyama, Michael) and 10250 (Customer Hanari Carnes, Employee Peacock, Margaret).

Record: 1 of 830

No Filter

Search

**Orders**

**Bill To:** Alfreds Futterkiste      **Ship To:** Alfreds Futterkiste

Obere Str. 57	Obere Str. 57		
Berlin		12209	Berlin
		Germany	Germany

**Salesperson:** Suyama, Michael      **Ship Via:**

Speedy     United     Federal

**Order ID:** 10643    **Order Date:** 25-Aug-1997    **Required Date:** 22-Sep-1997

**Products:**

	Unit Price:	Quantity:	Discount:	Extended Price:
Spegesild	\$12.00	2	25%	\$18.00
Chartreuse verte	\$18.00	21	25%	\$283.50
Rossle Sauerkraut	\$45.60	15	25%	\$513.00
*			0%	

**Print Invoice**

Subtotal:	\$814.50
Freight:	\$29.46
Total:	\$843.96

1. Information comes from the Customers table...
2. ...the Employees table...
3. ...the Orders table...
4. ...the Products table...
5. ...and the Order Details table.

MainWindow

TABLES

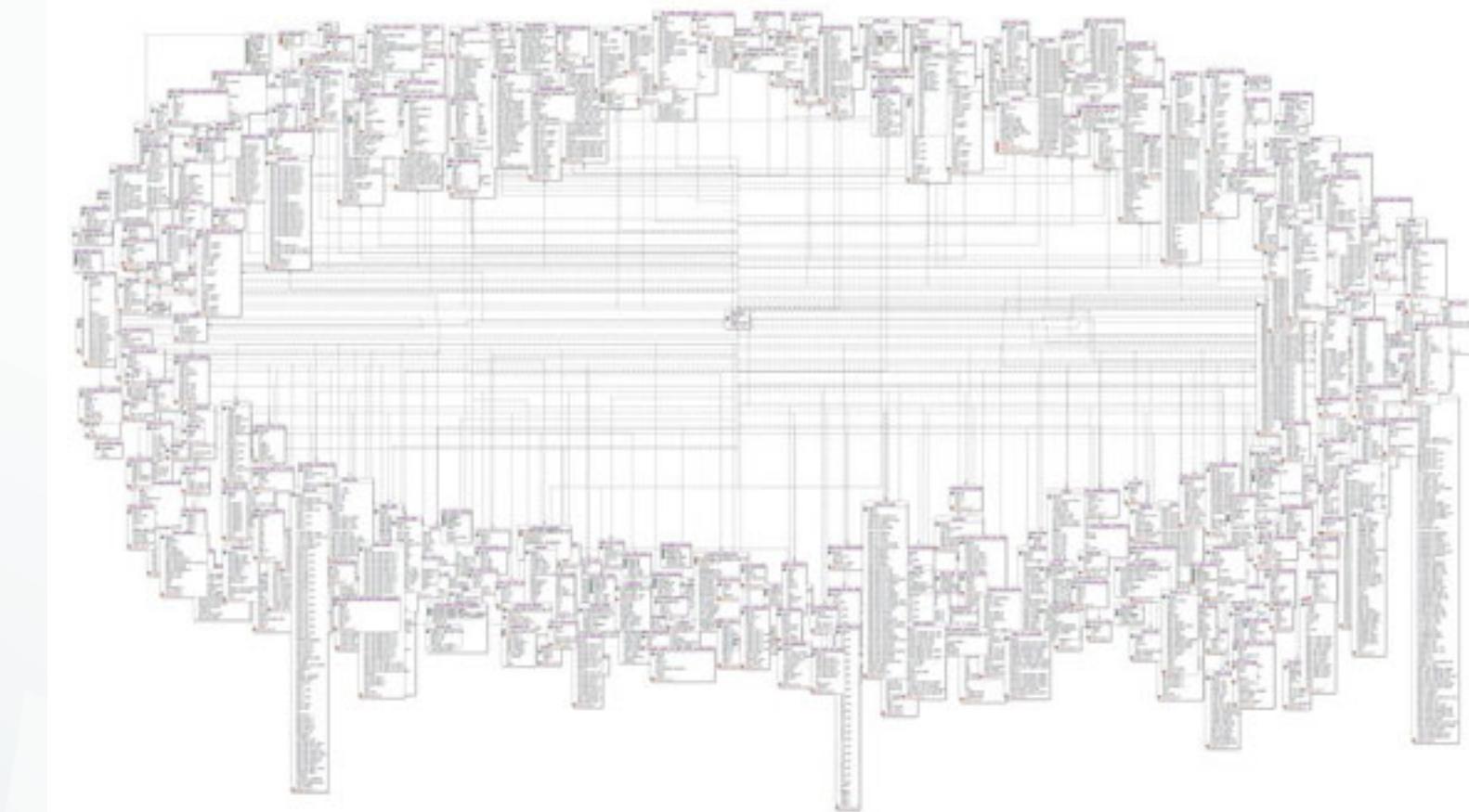
Customers Employees Orders Products Quotes

Customers

Name	Home Office_Line	Home Office_City	Home Office_State	Home Office_Zip C...	Home Office_Latitu...	Home Office_Longi...	Billing Adr...
Super Mart of the...	702 SW 8th Street	Bentonville		1 72716	36.3652654	-94.2176381	P O Box
Electronics Depot	2455 Paces Ferry R...	Atlanta		10 30339	33.8484043	-84.4323275	P O Box
K&S Music	1000 Niclett Mall	Minneapolis		23 55403	44.9740621	-93.2754314	P O Box
Tom's Club	999 Lake Drive	Issaquah		46 98027	47.548811	-122.050413	P O Box
E-Mart	3333 Beverly Rd	Hoffman Estates		13 60179	42.0774824	-88.2177256	P O Box
Walters	200 Wilmot Rd	Deerfield		13 60015	42.1568422	-87.869854	P O Box
StereoShack	400 Commerce S	Fort Worth		42 76102	32.755163	-97.3309029	P O Box
Circuit Town	2200 Kensington C...	Oak Brook		13 60523	41.843477	-87.951431	P O Box
Premier Buy	7601 Penn Avenue...	Richfield		23 55423	44.8647285	-93.3063912	P O Box

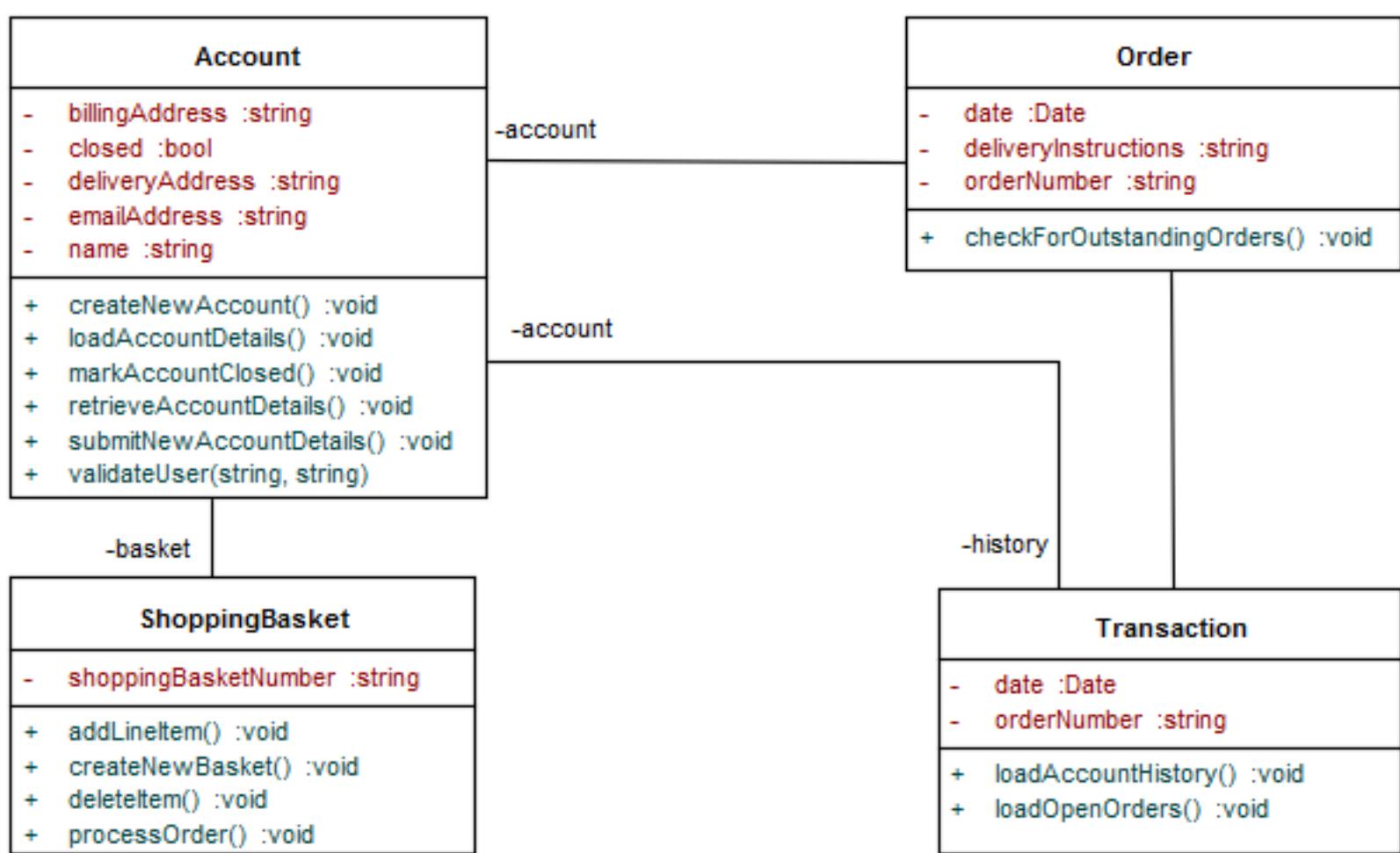
Count=20

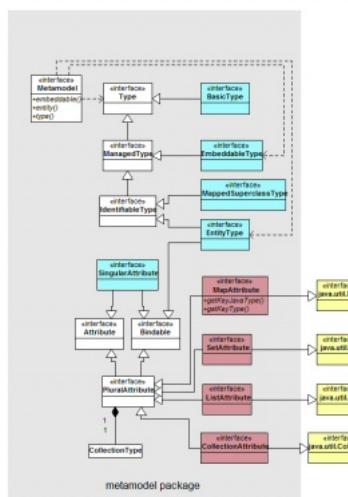
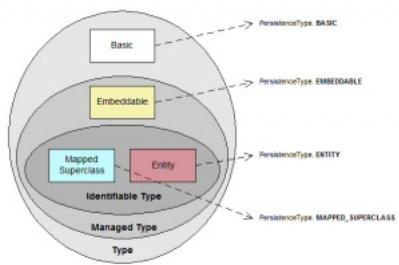
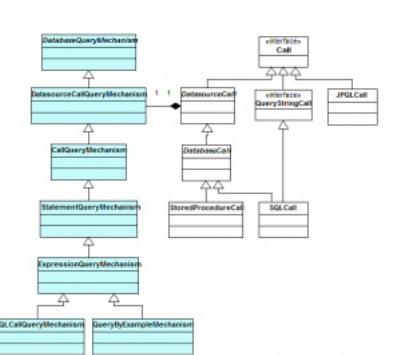
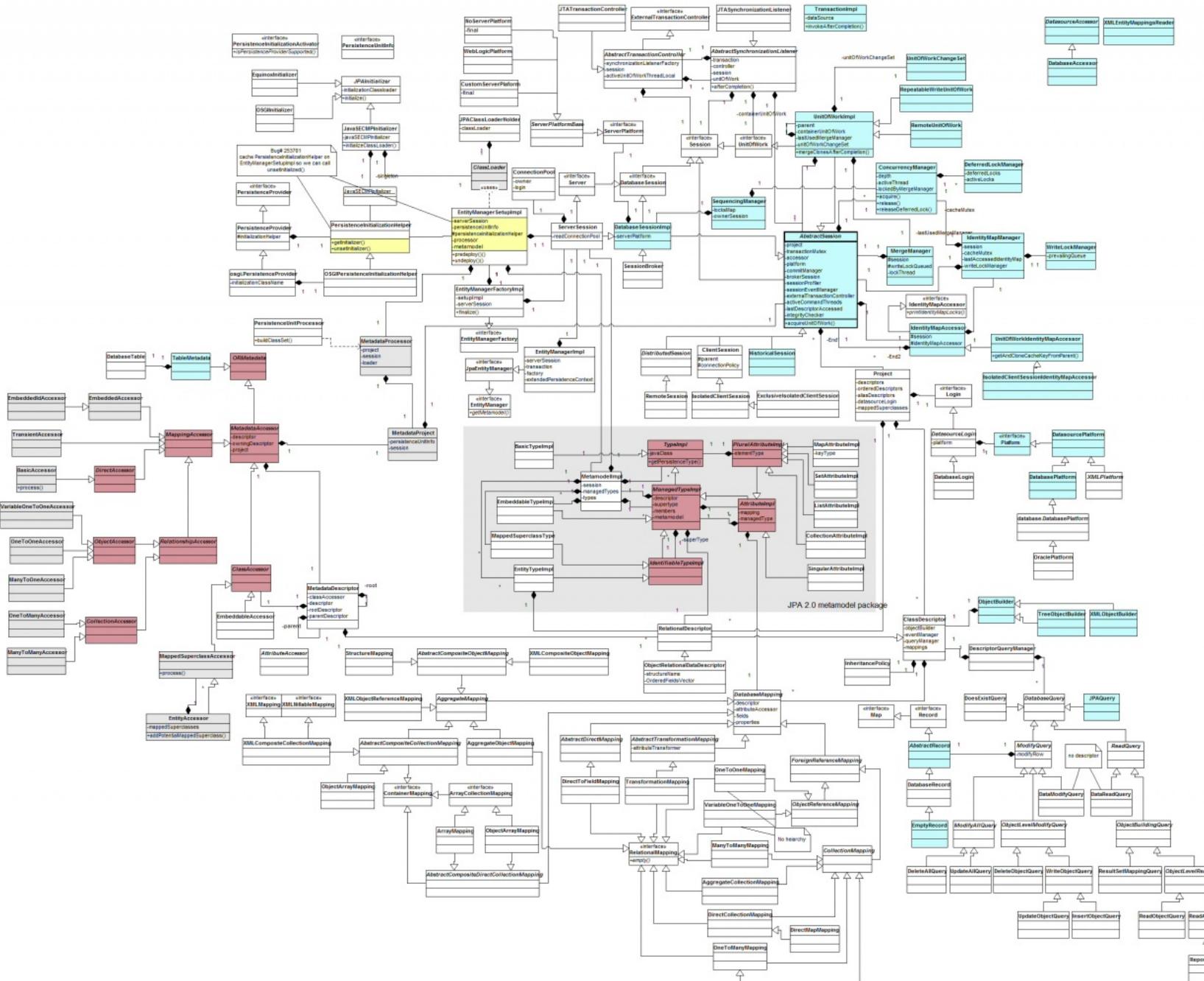
New Edit Delete Refresh Print Preview



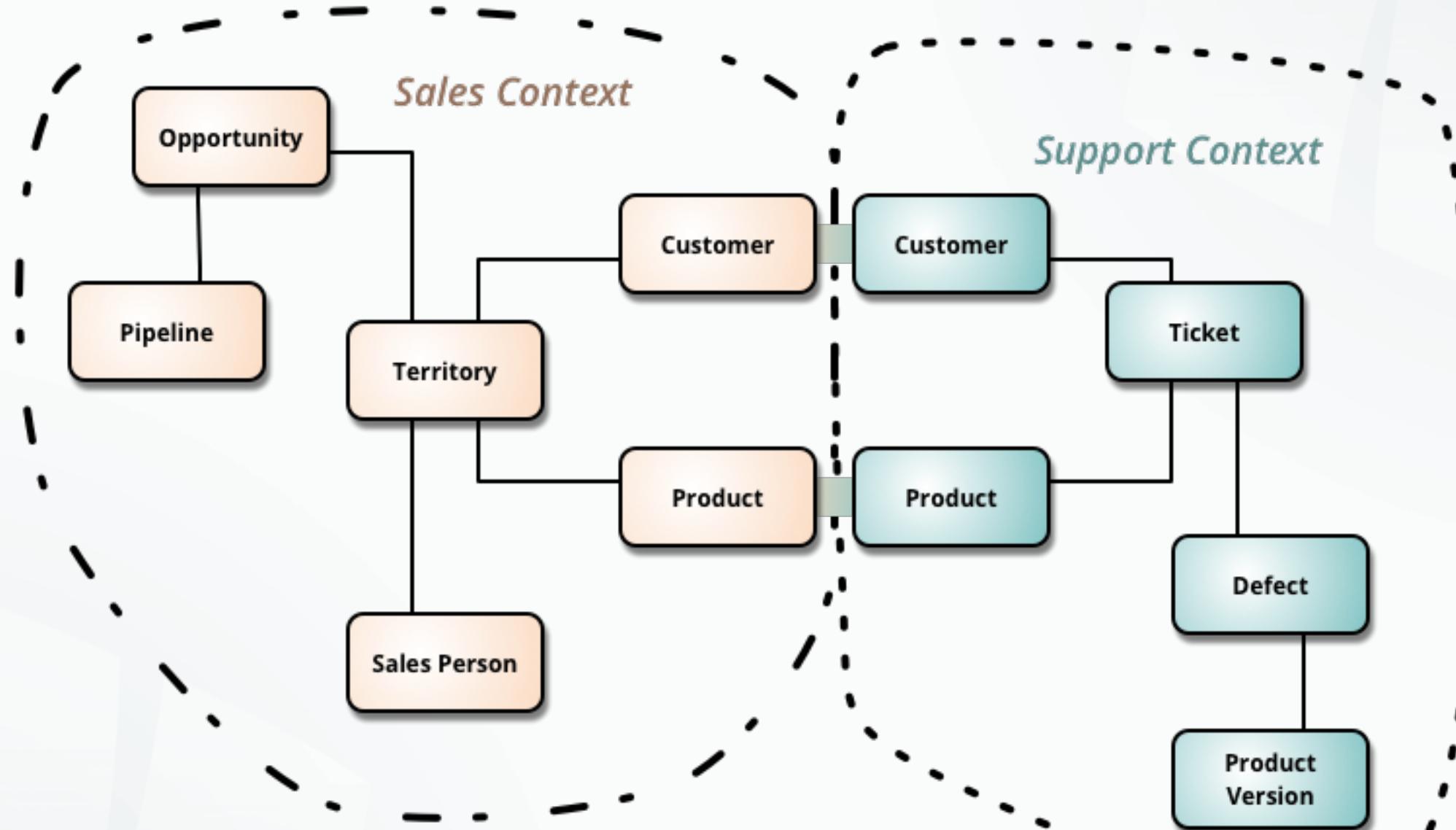
# But OO design solves this

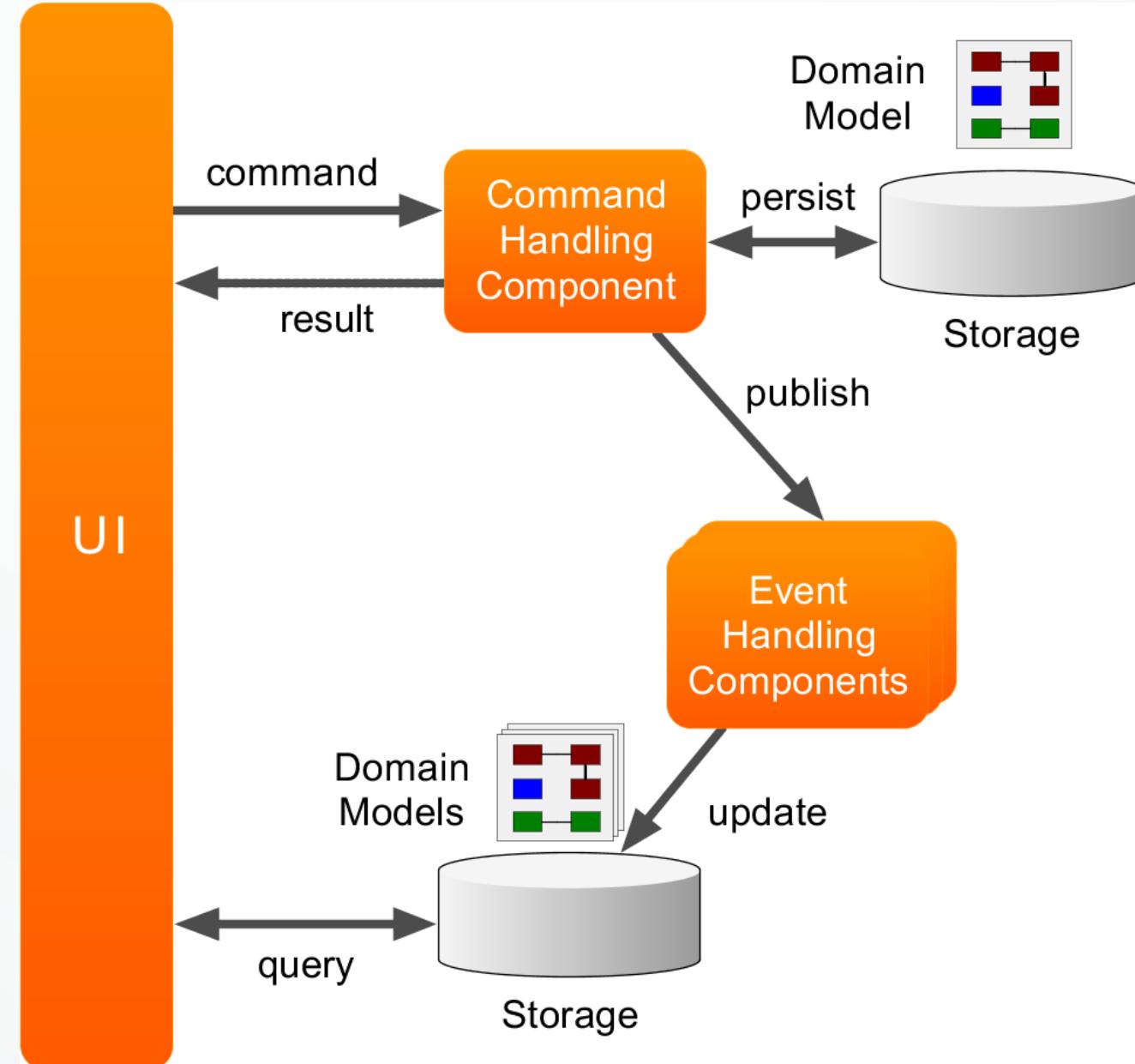
Really?

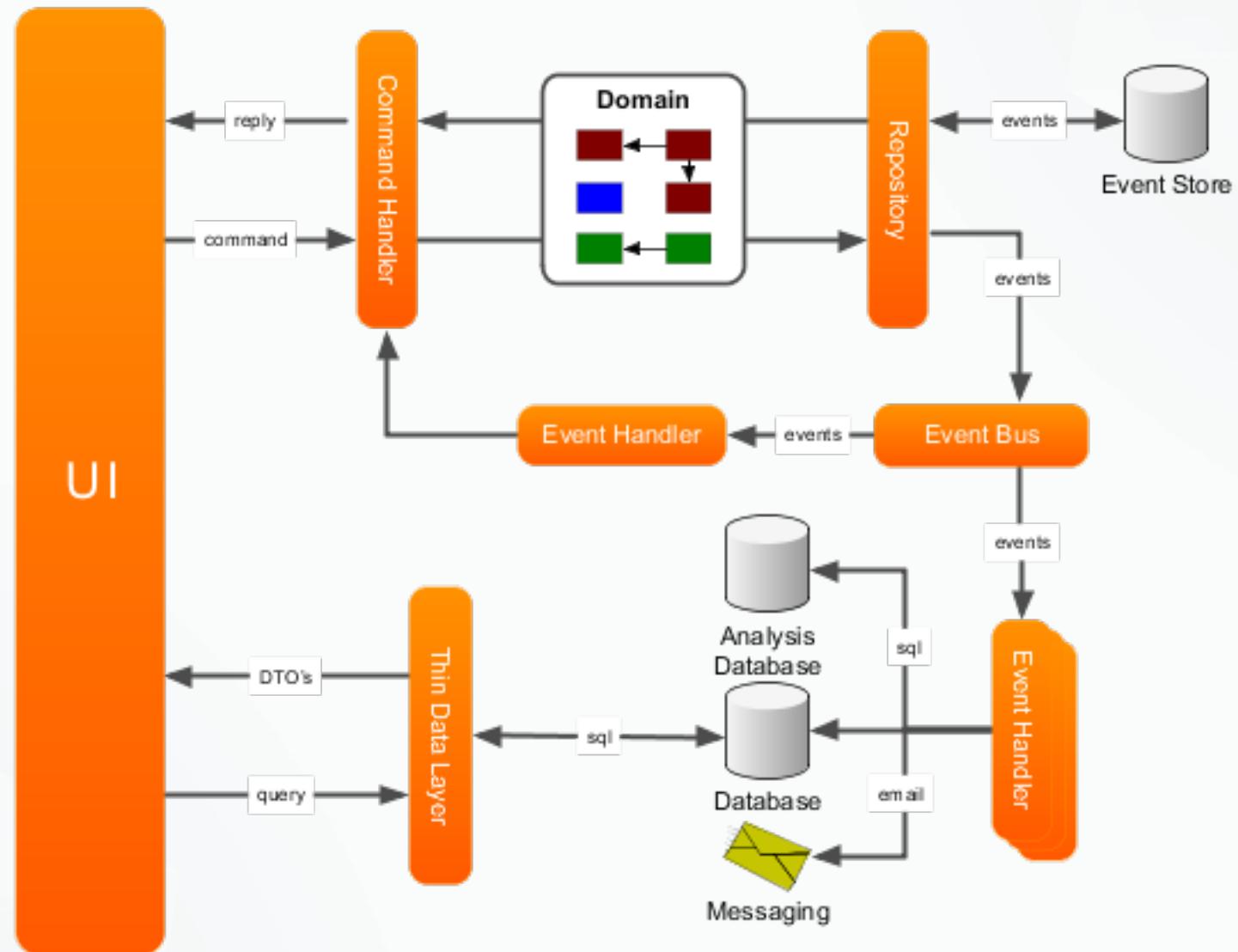




# Domain Driven Design







# Focus on frontend

Assuming your backend is there (or being build)

# Task based UI

# Task based UI

- Focus on the task at hand instead of CRUD operations on data
- Fits DDD and especially CQRS really well
- Read-models to present data
- Commands to change data

Car rental

← → X ↗ http:// ↗

## Edit Car

# 123

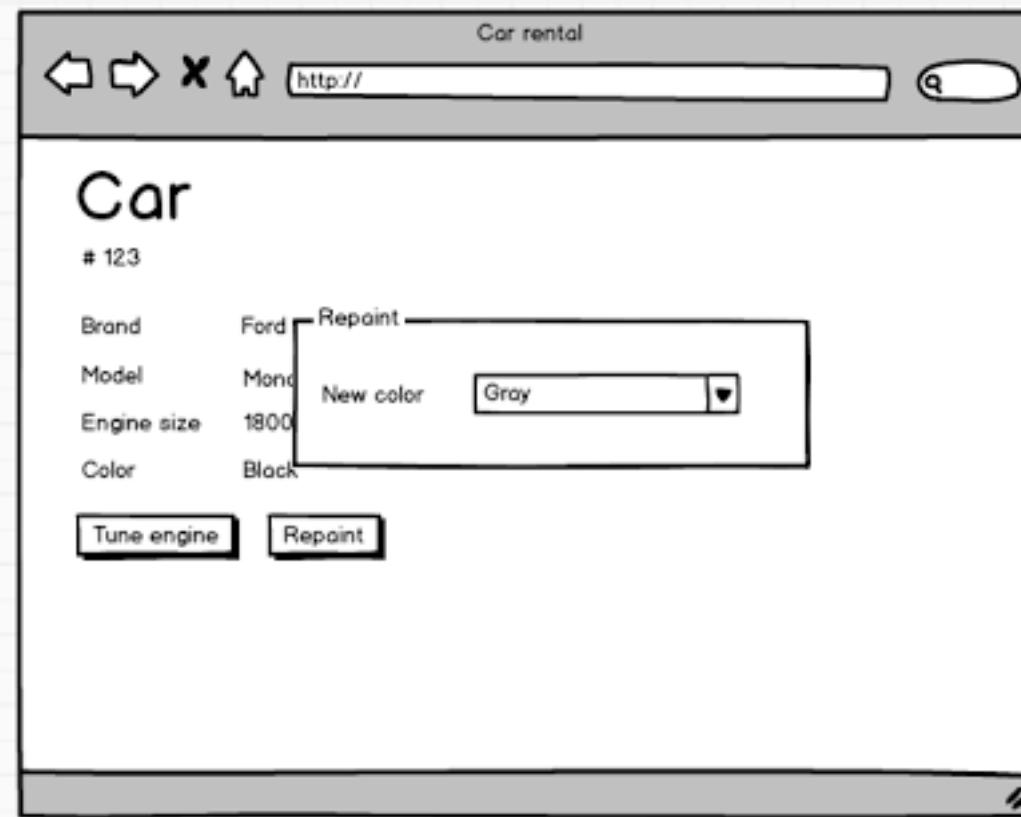
Brand Ford

Model Mondeo

Engine size 1800cc ↴

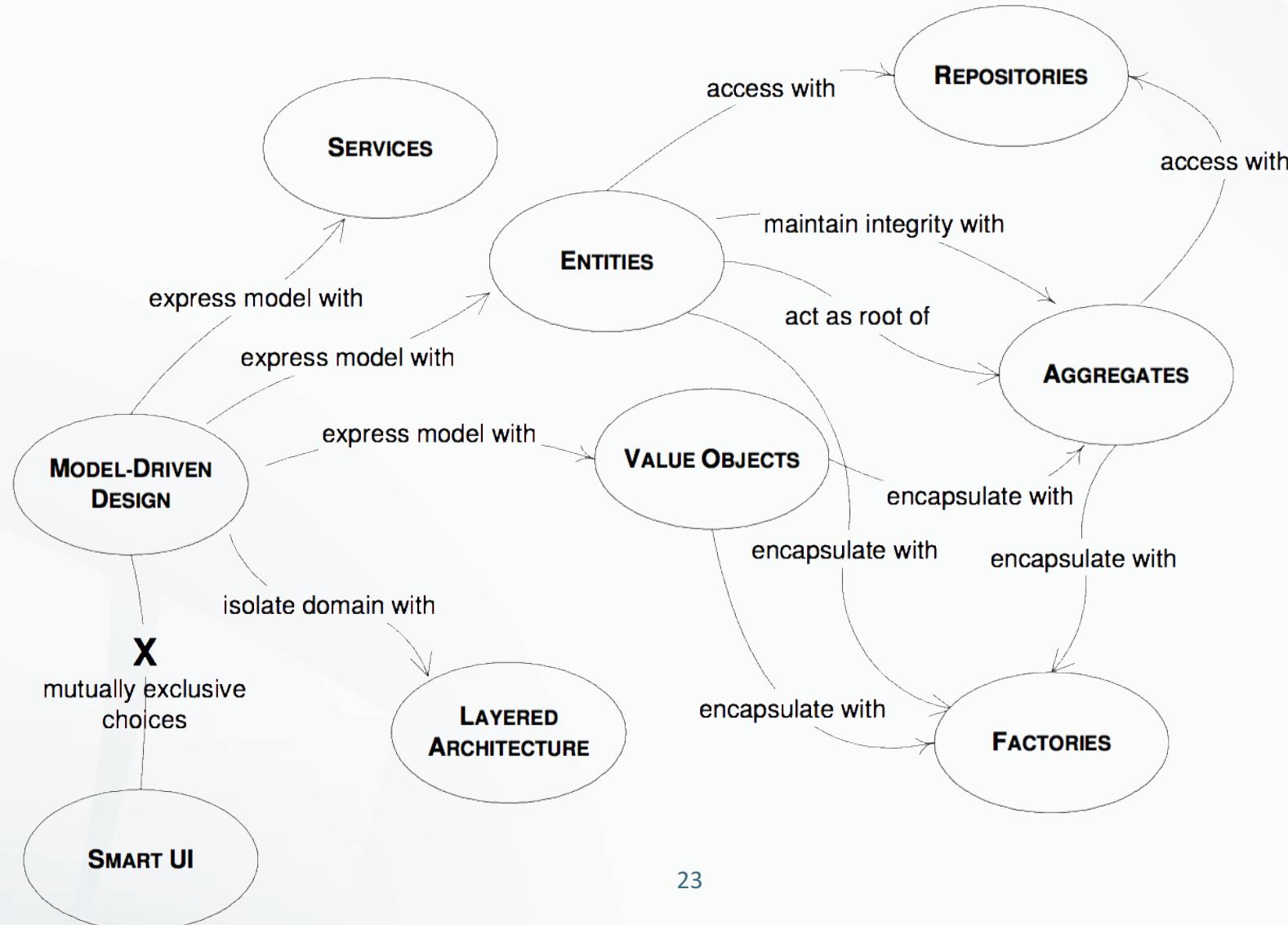
Color Black ↴

Save changes

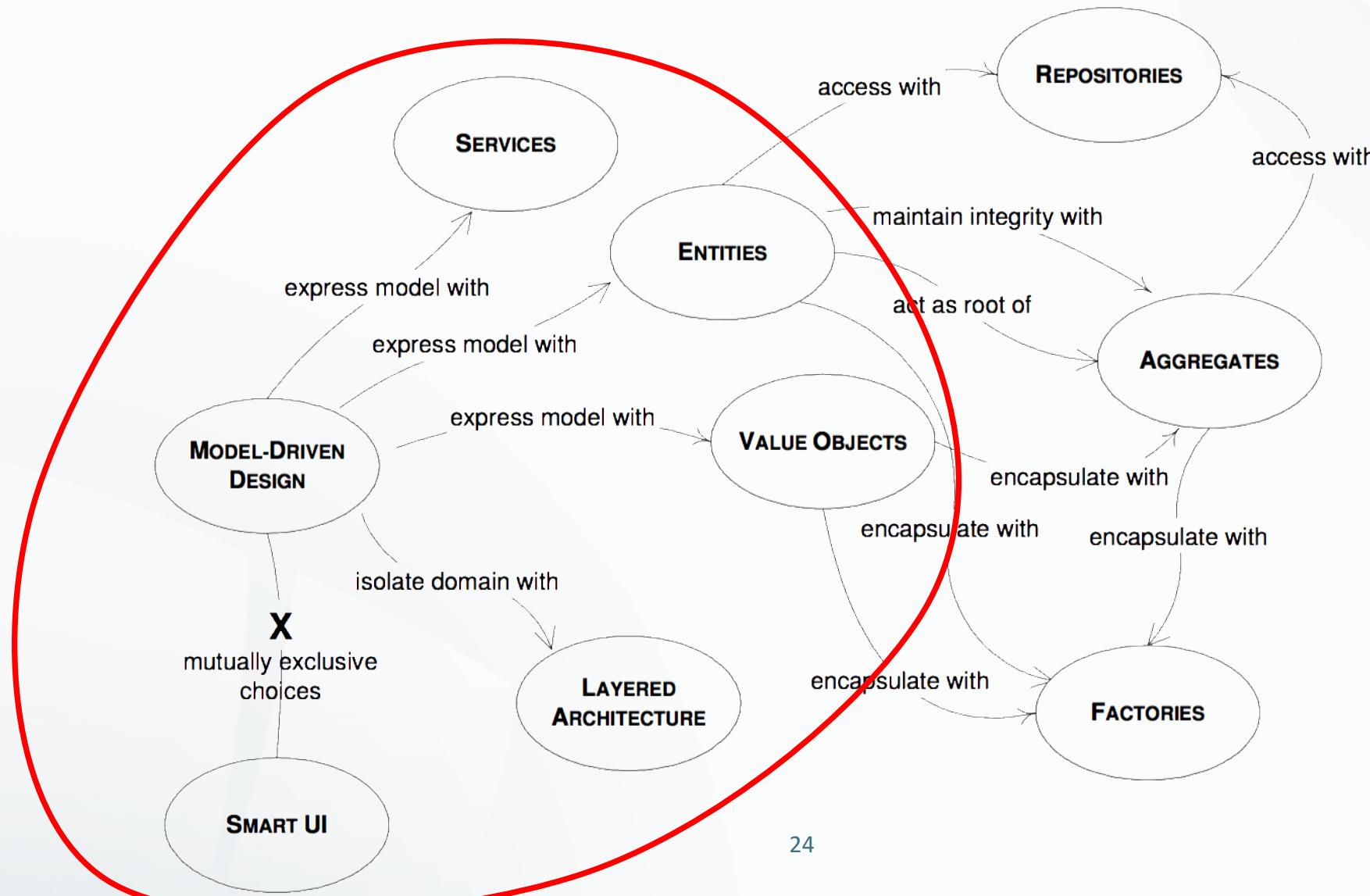


# Adding Model Driven Design

# Model-Driven Design building blocks



# Model-Driven Design building blocks



Let's build something

# Technology

- ASP.NET Core
  - With JavaScript services
  - To host the ‘frontend’-web api
- Angular
- ‘REST’ api
  - HAL - Hypertext Application Language

# ASP.NET Core JavaScript services

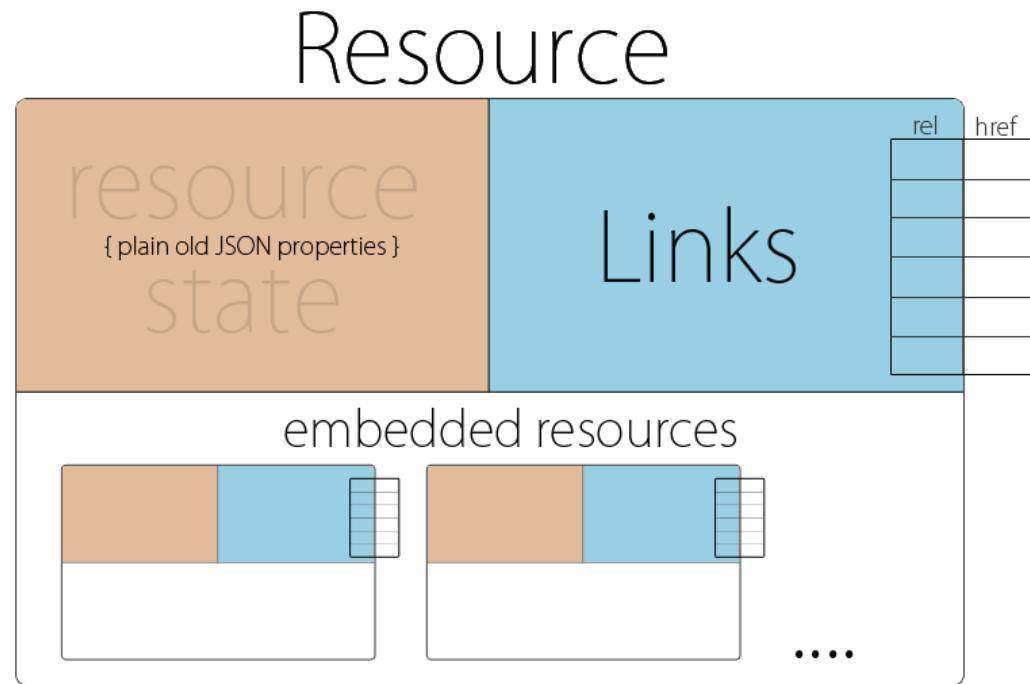
- Integrate .NET Core with NodeJS:
- Execute Javascript code @ server side
- Invoking NPM packages at runtime from .NET code
- i.e. run Webpack middleware
  - Hot module replacement

# ASP.NET Core JavaScript services

- Microsoft.AspNetCore.NodeServices
- Microsoft.AspNetCore.SpaServices
- Microsoft.AspNetCore.AngularServices
- Microsoft.AspNetCore.ReactServices



# HAL - Hypertext Application Language



[http://stateless.co/hal\\_specification.html](http://stateless.co/hal_specification.html)

# Thank you!

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