23 november 2019

CDS

newFounders

Agenda

- Core Data Services - intro
- ABAP Core Data Services
- Join & Associations
- OData
- Annotations
- UI5

What I want to make
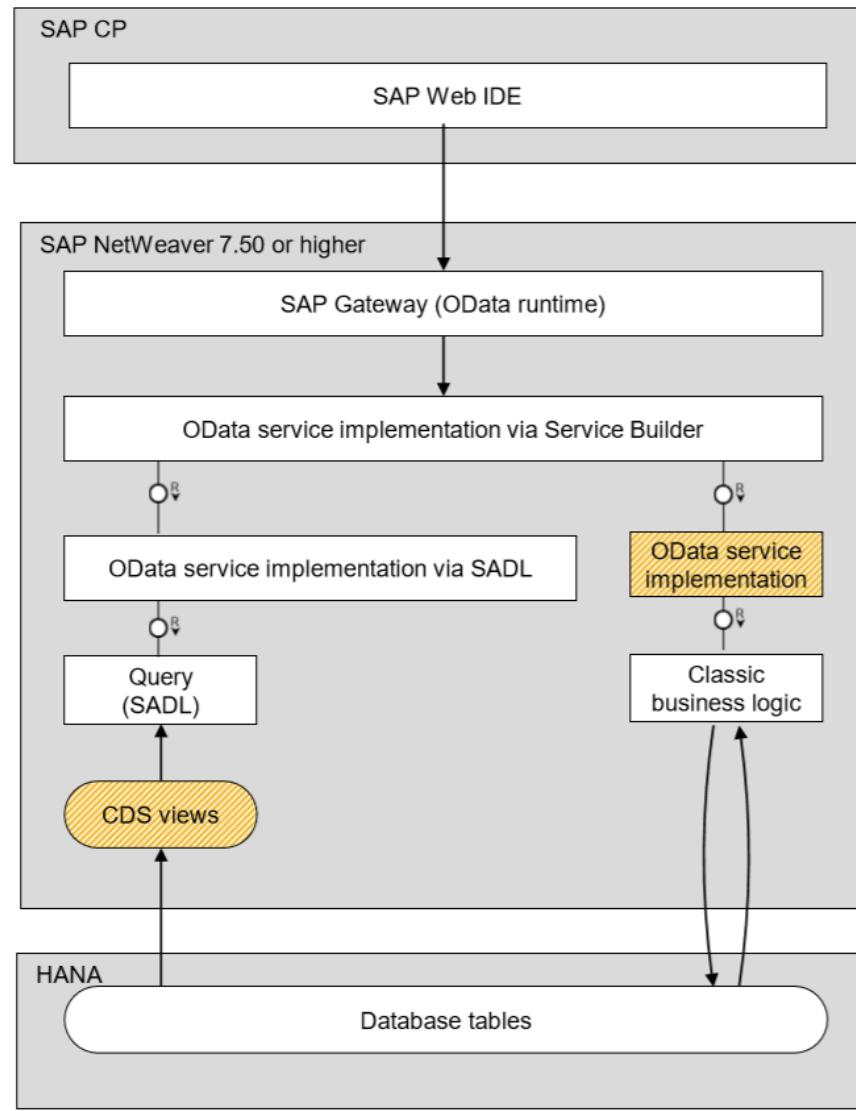
← List of breweries

… and their beer→

Core Data Services

Picture from SAP SE

CDS – One concept, two flavors

Horst Keller **SAP**

July 20, 2015   4 minute read

CDS – One Concept, Two Flavors

- *HANA CDS*
  SQL-based Data Description Language (DDL) that allows you to define database tables, views, data types by wrapping the according SQL statements and enriching them with semantical properties.

- *ABAP CDS*
  The ABAP Core Data Services (ABAP CDS) are the implementation of the general CDS concept for AS ABAP. ABAP CDS makes it possible to define semantic data models on the central database of the application server. On AS ABAP, these models can be defined independently of the database system.
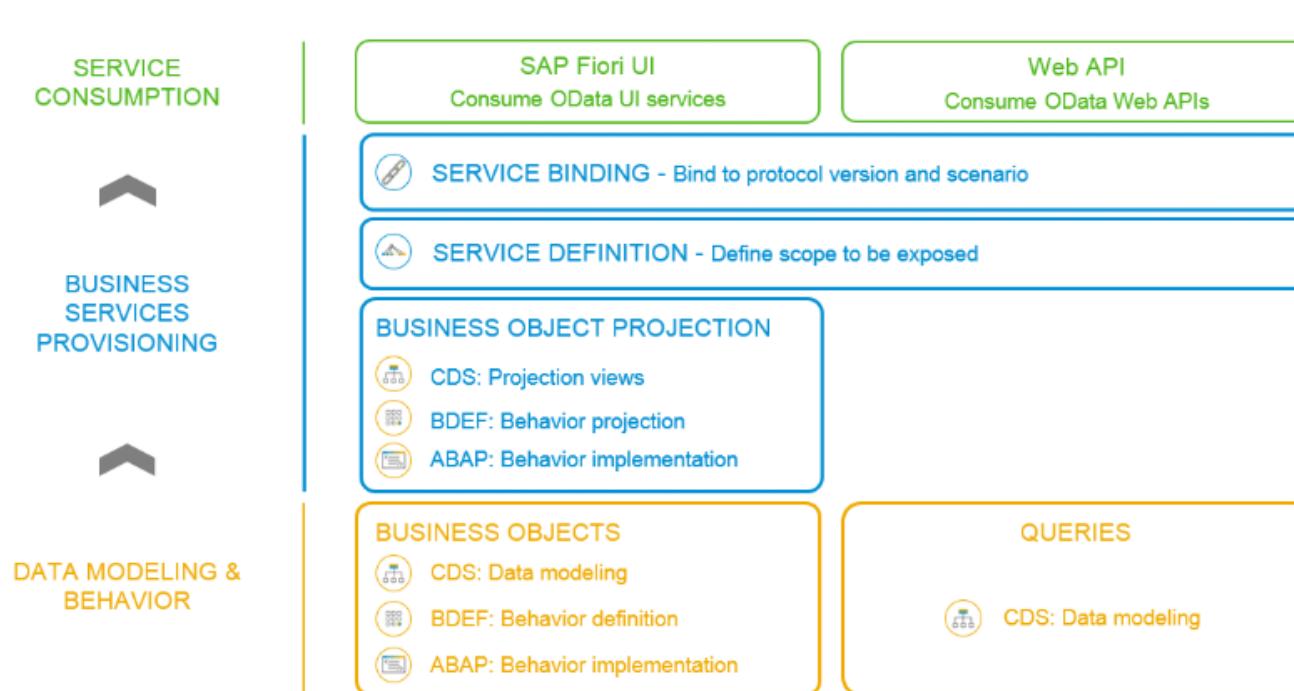
https://blogs.sap.com/2015/07/20/cds-one-model-two-flavors/

CD & S - "third" flavour

Carine Tchoutouo Djomo SAP
October 25, 2019   6 minute read

Getting Started with the ABAP RESTful Programming Model

Architecture Overview

But first …

Types of BEER

Data model

new founders
*IT Inventors*
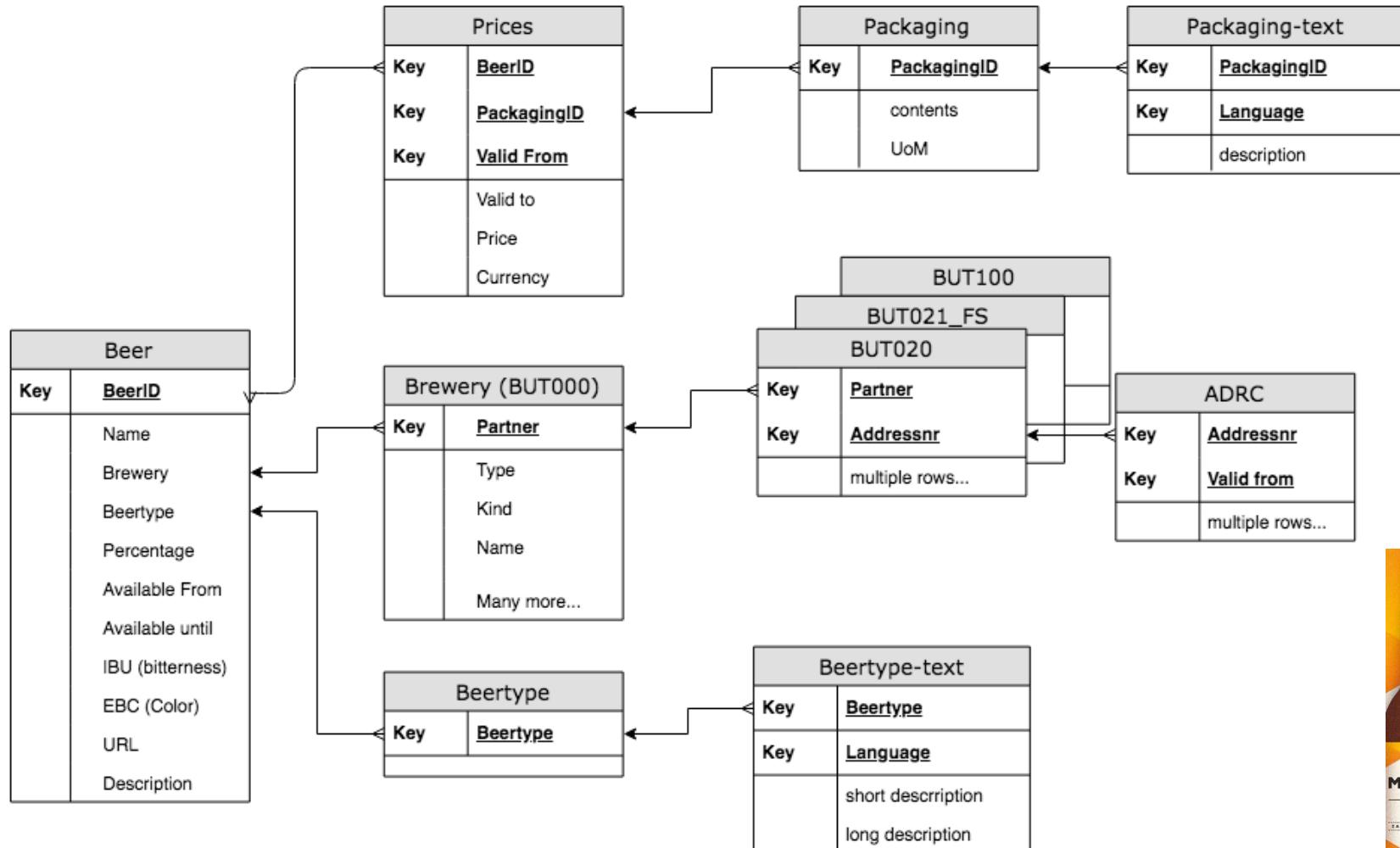
- The texttables for beertypes & packaging

```
@AbapCatalog.sqlViewName: 'ZDDLBEERTYPES'    //datadictionary viewname
@AbapCatalog.compiler.compareFilter: true    // true:  The filter conditions of associations
@AccessControl.authorizationCheck: #NOT_REQUIRED
@EndUserText.label: 'Soorten bier (incl. texttabel)'
define view ZNL1_BEERTYPES

    with parameters  @Environment.systemField: #SYSTEM_LANGUAGE
            p_langu : abap.Lang

as select from zbr_type         as beertype
    inner join zbr_typet        as beertypetext
      on  beertypetext.zbeertype = beertype.zbeertype
      and beertypetext.langu       = $parameters.p_langu
    {
    key beertype.zbeertype as beertype,
        stext as short_description,
        ltext as long_description
}
```
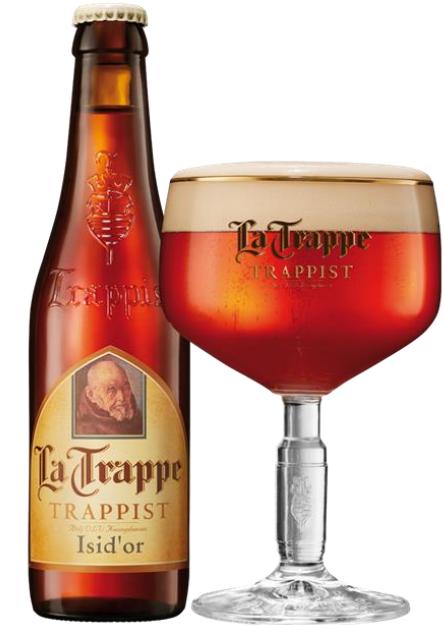
Creating the views 2

- View on breweries & beers

- Views
  - ZNL4_CURRENTBEERS
  - ZNL5_BREWERIES

→ Show in Eclipse

Associations 1

- An <u>association</u> is used to link a view (or table) to the source view (or table) in CDS View.

- In an association, the cardinality is defined. Cardinality is the relationship between the source and associated view in the form of [min .. max] (only the target cardinality is stated)

- Create association between
  - Beers and breweries
  - Breweries and beers ;-)
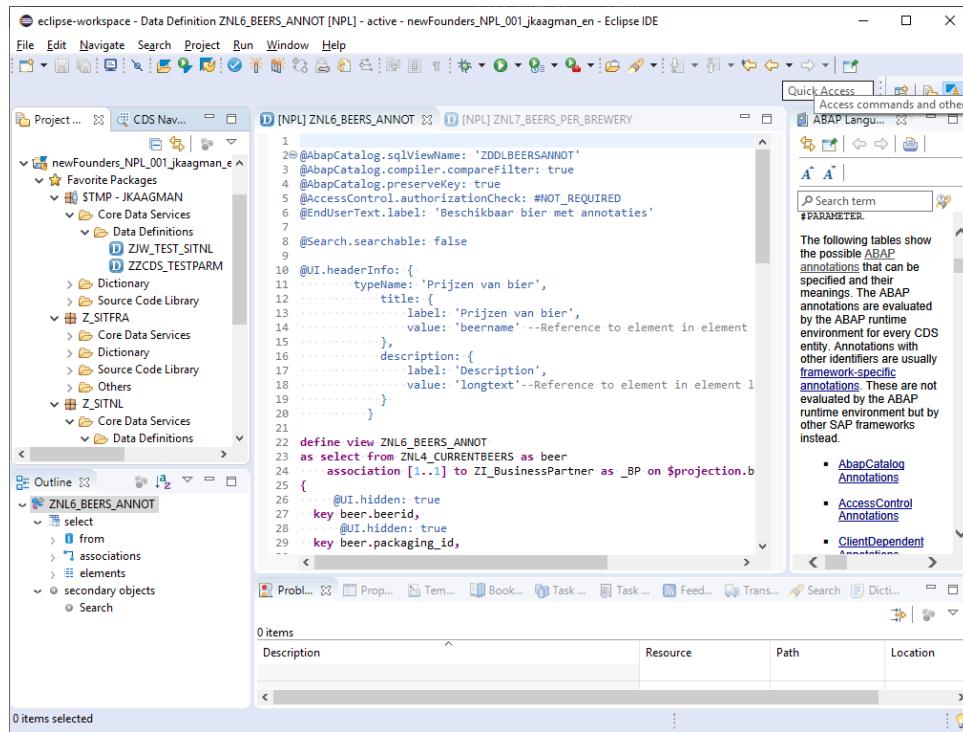
Annotations

- @Search.searchable: true

- @EndUserText.label: 'Brewery ID'

- @UI.hidden: true
  @UI.lineItem.position: 30

- @Semantics.unitOfMeasure: true
  @Semantics.quantity.unitOfMeasure: 'UoM'

Associations and annotations

- ## Show Associations in ADT
  - ### ZNL6_BEERS_ANNOT
  - ### ZNL7_BEERS_PER_BREWERY

OData

- ## Create OData service with annotation
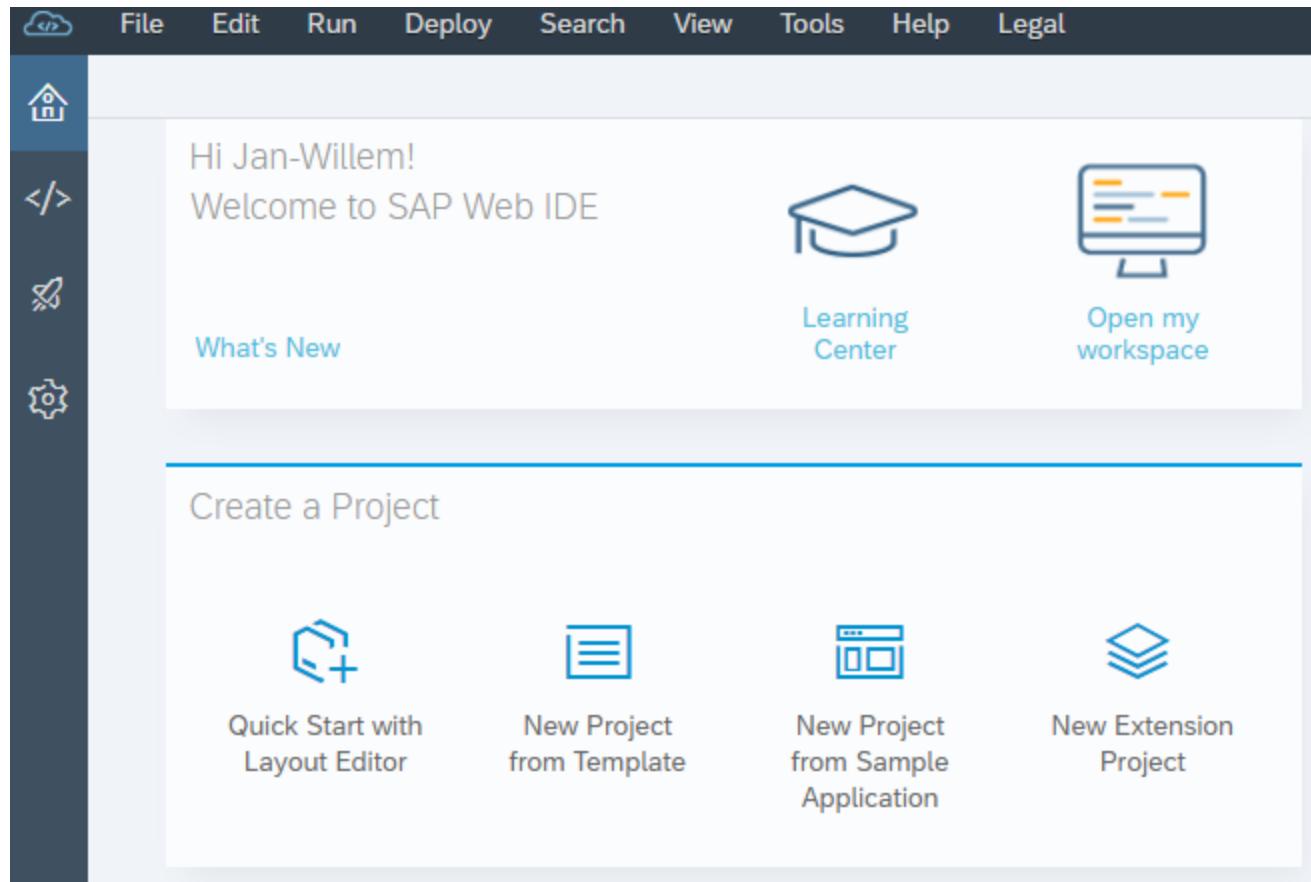
- ## Transactie /IWFND/MAINT_SERVICE
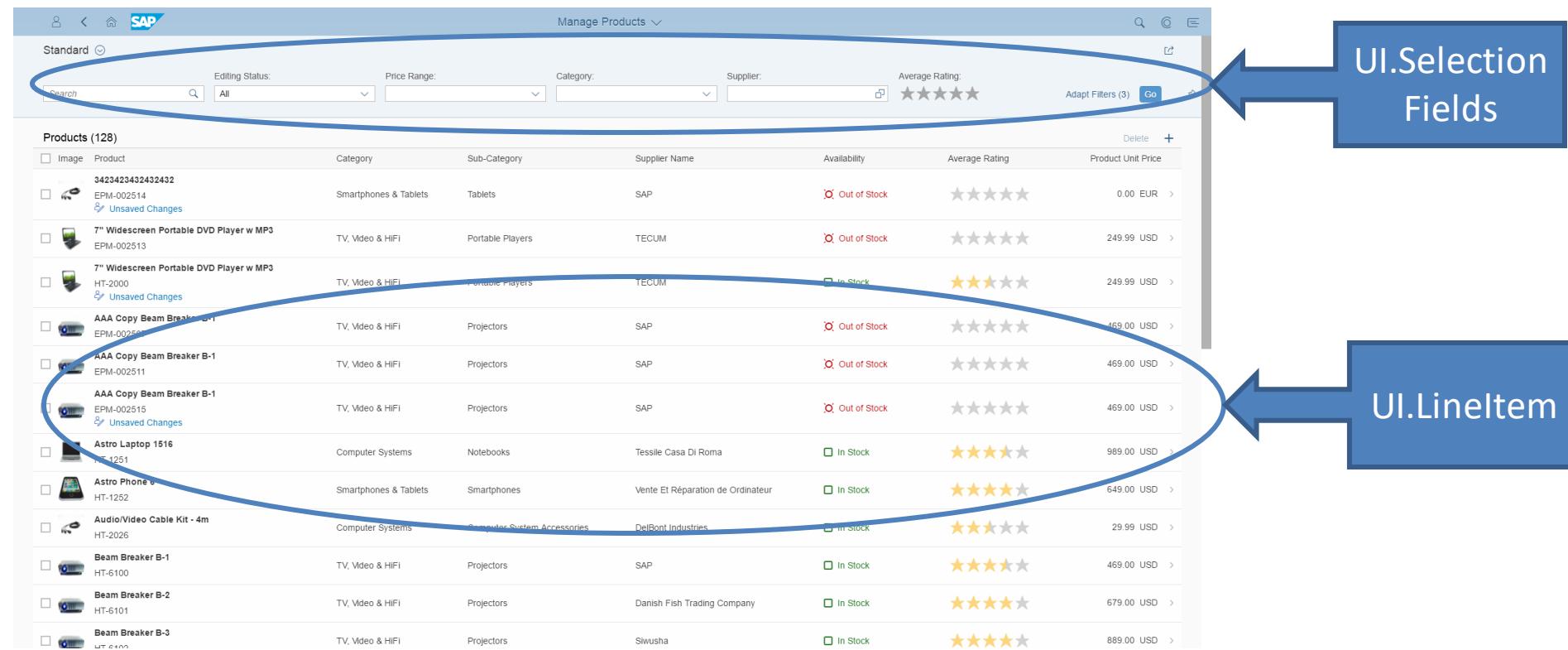
Genereer de UI5 - frontend

- ## In the WebIDE the UI5 – frontend can be generated

UI5 Frontend- Smart Table

- SAP Fiori Elements (formerly Smart Templates)
  - List report
  - Object page

UI.Selection Fields

UI.LineItem

UI5 Frontend – Object Page

Object page Layout

UI5 Frontend – Object Page

What I made

What I made

- Oops... Let's fix that in the WebIDE !
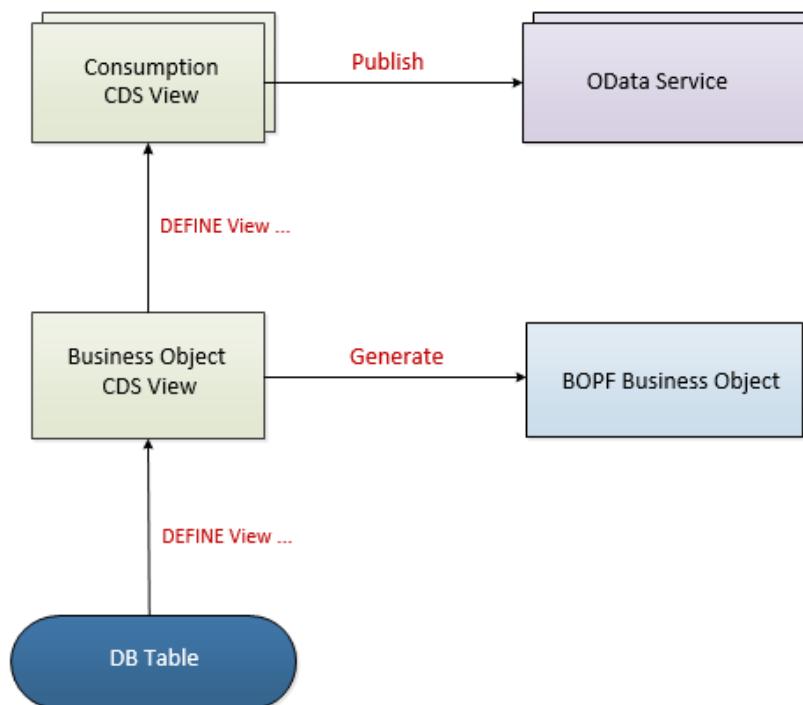
- Authorizations can be assigned directly to the CDS view by means of ACL.

- For instance PFCG-rollen:

```
define role Zvnsg_Bpb_Auth {
    grant select on
                ZVNSG_BPB_AUTH
            where
                (CityName) =
                 aspect pfcg_auth( ZAUT_CITY, ZA_CITY, actvt='03') ;
```
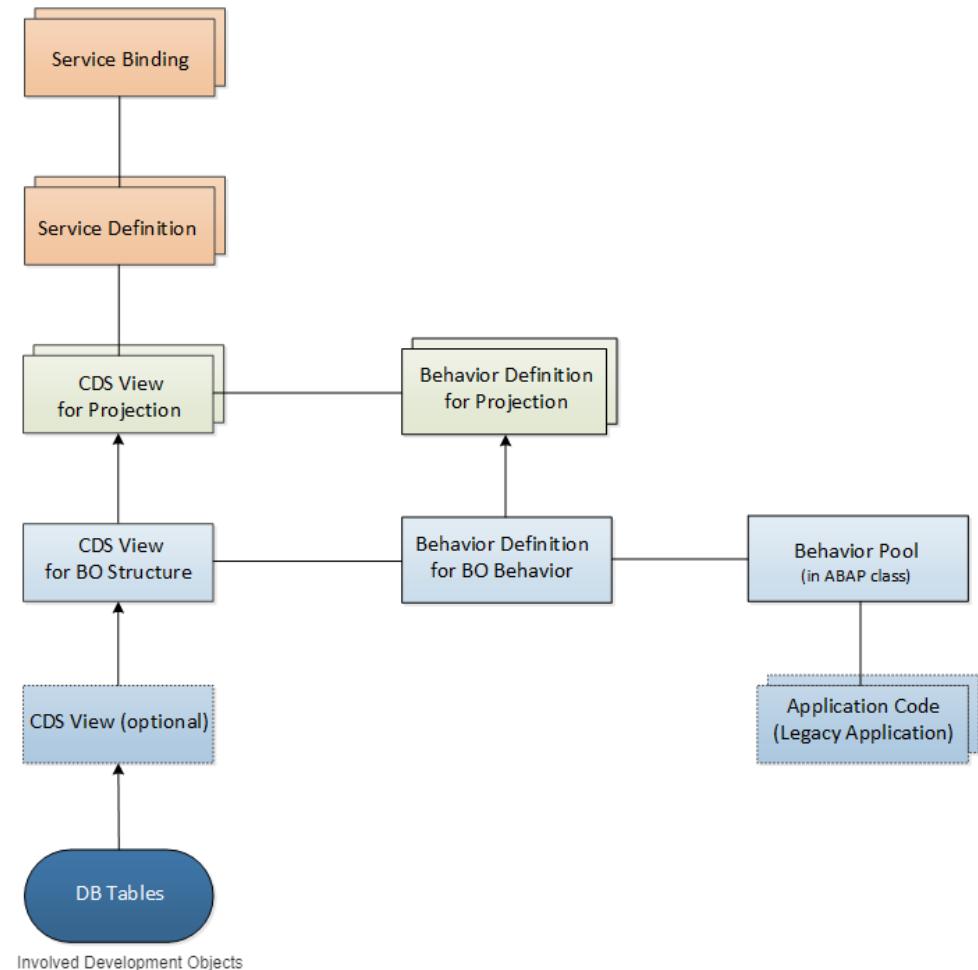
Newer releases

- ## ABAP 7.52
  - Annotation-files separated from the Data Definitions
  - Integration with the BOPF framework

Newer releases

- ## S/4HANA 1909

  - ## RESTful programming model

  - ## Behaviour definition

Involved Development Objects

Newer releases

- ## S/4HANA 1909 RESTful programming model:

Annotation and Values	Effect
@ObjectModel.writeActivePersistence: '<database_table/view>	Specifies the database table or the database view for storing BO data changes that result from transactional behavior
@ObjectModel.createEnabled: true	Allows you to create new business object instances
@ObjectModel.deleteEnabled: true	Allows you to delete business object instances
@ObjectModel.updateEnabled: true	Allows you to update existing business object instances

More information

- ABAP Restful programming model:
  https://help.sap.com/viewer/923180ddb98240829d935862025004d6/Cloud/en-US/289477a81eec4d4e84c0302fb6835035.html

- ABAP Programming Model for Fiori:
  https://help.sap.com/viewer/cc0c305d2fab47bd808adcad3ca7ee9d/1809.000/en-US/3b77569ca8ee4226bdab4fcebd6f6ea6.html

- ABAP CDS development user guide and documentation
  https://help.sap.com/viewer/f859579898c7494dbe2449bb7f278dcc/Cloud/en-US/7c078765ec6d4e6b88b71bdaf8a2bd9f.html
  https://help.sap.com/doc/abapdocu_752_index_htm/7.52/en-US/index.htm?file=abencds.htm
  https://wiki.scn.sap.com/wiki/display/ABAP/CDS+-+Core+Data+Services
  https://archive.sap.com/documents/docs/DOC-69643

- Q&A
  https://answers.sap.com/topics/abap+cds.html

- Parameters
  https://blogs.sap.com/2018/01/06/optional-parameters-in-cds-views/
  https://stackoverflow.com/questions/48259694/how-can-i-select-data-similar-to-sql-where-like-from-a-parameter-value

- Associations
  https://blogs.sap.com/2016/08/12/from-open-sql-joins-to-cds-associations/
  https://blogs.sap.com/2018/08/20/cardinality-of-association-in-cds-view/

- More info
  http://sapabapcentral.blogspot.com/p/abap-cds-data-definitions.html
  http://www.saplearners.com/category/abap-cds-views/
  https://blogs.sap.com/2017/09/09/abap-core-data-services-introduction-abap-cds-view/
  https://blogs.sap.com/2017/09/18/implementing-fuzzy-search-using-cds-sap-hana/

- Tutorials
  https://developers.sap.com/tutorials/abap-dev-adt-create-cds-view.html
  https://blogs.sap.com/2016/03/10/my-cds-view-self-study-tutorial-part-1-how-to-test-odata-service-generated-by-cds-view/
  https://www.youtube.com/playlist?list=PLQgi37f2ZGcOteTK3gUA2NXr-9-zE3JaH

More information

Technical Articles

Carine Tchoutouo Djomo SAP
October 25, 2019   6 minute read

Getting Started with the ABAP RESTful Programming Model

https://blogs.sap.com/2019/10/25/getting-started-with-the-abap-restful-programming-model/

Jocelyn Dart SAP
November 16, 2016   9 minute read

Fiori Elements – How to develop a List Report – Basic Approach

https://blogs.sap.com/2016/11/16/fiori-elements-how-to-develop-a-list-report-basic-approach/
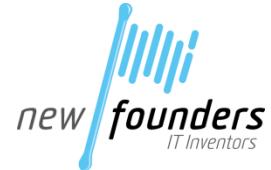
- Cheers!

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