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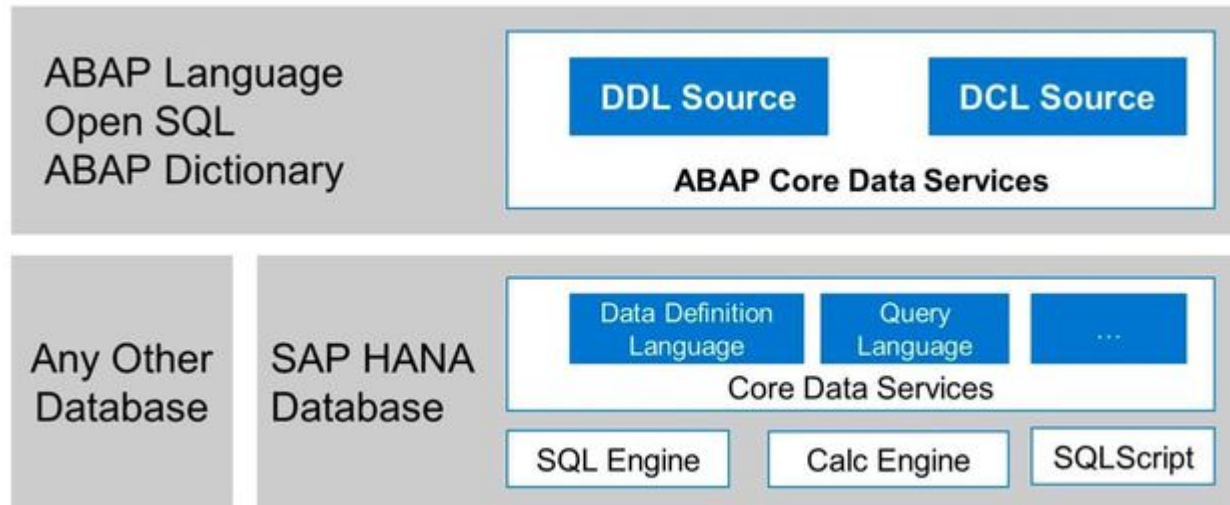
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Using the Core Data Services (CDS) View in Fiori Elements

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Using the Core Data Services (CDS) View in Fiori Elements





The Core Data Services (CDS) View

Note: The purpose of this lesson is to let you have basic understand of CDS. For detailed knowledge of CDS, please Check here (<https://www.123techguru.com/category/sap-s-4-hana/s-4-hanacdsviews/>).

Using the Core Data Services (CDS) View in Fiori Elements: The ABAP Core Data Services (ABAP CDS) are the platform-independent implementation of the general CDS concept for AS ABAP. The ABAP CDS make it possible to define semantic data models on the standard AS ABAP database. Unlike the SAP HANA-specific variant HANA CDS, the ABAP CDS (<https://developers.sap.com/tutorials/abap-dev-adt-create-cds-view.html>) are independent of the database system. The entities of the models defined in ABAP CDS provide enhanced access functions compared with existing database tables and views defined in ABAP Dictionary, making it possible to optimize Open SQL-based applications. This is particularly clear when an AS ABAP uses a SAP HANA database, since its in-memory characteristics can be implemented in an optimum manner.



■ SQLView Name

■ Data source

■ Projection list

```

1 @AbapCatalog.sqlViewName: 'ZSAPUX403DVAR'
2 @AbapCatalog.compiler.compareFilter: true
3 @AccessControl.authorizationCheck: #CHECK
4 @EndUserText.label: 'List Report with Variant Man
5 @OData: {
6   publish: true
7 }
8 define view ZSAP UX403D VAR
9 as select from SEPM I SalesOrder {
10
11   @UI.lineItem.position: 10
12   key SalesOrder as SalesOrderID,
13   @UI.lineItem.position: 20
14   _Customer.BusinessPartner as CustomerID,
15   @UI.lineItem.position: 30
16   _Customer.CompanyName as CustomerName,
17   @UI.lineItem.position: 40
18   GrossAmountInTransacCurrency,
19   @UI.lineItem.position: 50
20   _OverallStatus.SalesOrderOverallStatus
21 }
22 }
```

A basic CDS defines a view, the definition of CDS use SQL like syntax.

SQL View Name: For compatibility with ABAP dictionary, each CDS must have a name in Old ABAP dictionary format(Max length:16).

Data source: A cds view select data from one or several database table or cds views. If data come from more than one data source, SQL JOIN syntax can be used to select data from multiply data sources.

Projection List: The most important part of a CDS view is the projection list. In projection list, complex expression can be used to create calculated field.

Note: The process of creating a CDS view is described in Create a List Report using CDS with Annotation
[\[https://www.123techguru.com/courses/create-a-list-report-using-cds-with-annotation/#learn\]](https://www.123techguru.com/courses/create-a-list-report-using-cds-with-annotation/#learn).

Annotations for CDS Views:



```

1 @AbapCatalog.sqlViewName: 'ZSAPUX403DVAR'
2 @AbapCatalog.compiler.compareFilter: true
3 @AccessControl.authorizationCheck: #CHECK
4 @EndUserText.label: 'List Report with Variant Man
5 @odata: {
6     publish: true
7 }
8
9 define view ZSAP_UX403D_VAR
10 as select from SEPM I SalesOrder {
11     @UI.lineItem.position: 10
12     key SalesOrder as SalesOrderID,
13     @UI.lineItem.position: 20
14     Customer.BusinessPartner as CustomerID,
15     @UI.lineItem.position: 30
16     Customer.CompanyName as CustomerName,
17     @UI.lineItem.position: 40
18     GrossAmountInTransacCurrency,
19     @UI.lineItem.position: 50
20     OverallStatus.SalesOrderOverallStatus
21 }
22
23 1

```

- CDS view define the logic of reading data, with semantic information extract from ABAP DDIC
- CDS Annotation add additional information for a data field or the view itself
- CDS core annotation contain most common information use by all clients
- CDS domain-specific annotation contain information for special usage
- How to write annotation for a CDS view depends on the usage of the CDS view

Annotations for CDS Views

CDS annotations are extra information to describe the data, it let the consumer of CDS view know how to use data from the CDS view.

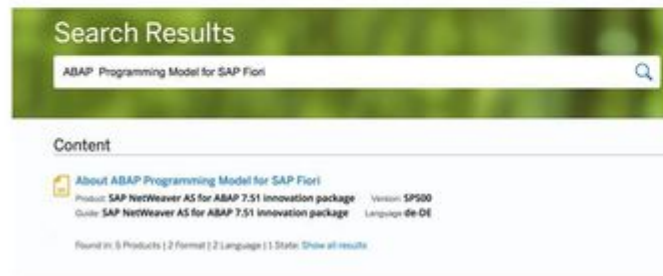
Domain	Usage
UI Annotations	Most important domain for Fiori Elements. Nearly one-to-one relationship between CDS annotation and OData annotation term
Consumption Annotations	Control visibility of a data field or the whole entity Useful when defining value help for a field
Object Model Annotations	Provide definitions of structural as well as transactional related aspects of the business data model
Semantics Annotations	Enrichment of semantic information for data field

Domain Specific Annotation Related to Fiori Elements



Annotations are grouped according to usage, this figure shows most relevant groups of association for Fiori Elements.

1. Go to <http://help.sap.com>
2. Search "ABAP Programming Model for SAP Fiori" and press Enter
3. Choose the correct result according your Kernel version
4. Click "Reference" on left bottom of the screen



CDS Annotation Reference

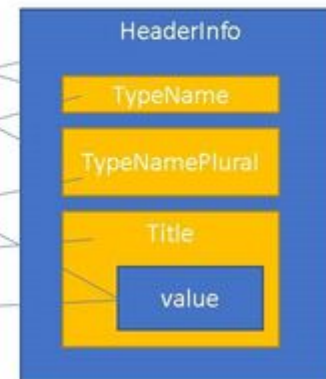
To have full knowledge of CDS annotations, you can access CDS annotation document by searching ABAP Programming Model for AP Fiori on sap help portal.

Object Style

```
@UI.headerInfo.typeName: 'Sales Order'
@UI.headerInfo.typeNamePlural: 'Sales Orders'
@UI.headerInfo.title.value: 'SalesOrderID'
```

JSON Style

```
@UI.headerInfo: {
  typeName: 'Sales Order',
  typeNamePlural: 'Sales Orders',
  title: {
    value: 'SalesOrderID'
  }
}
```



Annotation Syntax: Structure Type



If an annotation term represents a structure, two options are available for writing the annotation.

The object style accesses properties of an annotation like attributes of a class, using `.` to access sub-level properties.

The JSON style accesses properties like a JSON object, with key features of this syntax are:

- `{}` represent a structure
- Use `:` to separate property name and its value
- Use `,` to separate properties

Both syntaxes have the same meaning and can be used as a combination, such as `@UI.headerInfo.title: { value: 'SalesOrderID' }`

```

@UI.lineItem: [
  {
    qualifier: 'qualifier1',
    position: 10,
    label: 'label1'
  },
  {
    qualifier: 'qualifier2',
    position: 20,
    label: 'label2'
  }
]

```

UI.lineItem			
qualifier	position	label
qualifier1	10	label1
qualifier2	20	label2

Annotation Syntax: Array Type

If an annotation term represents an array, the only option is to use a JSON array. Key features of this syntax are:

- `{}` represent a structure
- `[]` represent an array
- Use `:` to separate property name and its value
- Use `,` to separate properties
- In most cases, each line should have a property called "qualifier" to identify it.



```

@UI.lineItem: [(
  position: 10 ,
  label: 'label1',
  importance: #HIGH
)]

```

```

@UI.lineItem.position: 10
@UI.lineItem.label: 'Label1'
@UI.lineItem.importance: #HIGH

```

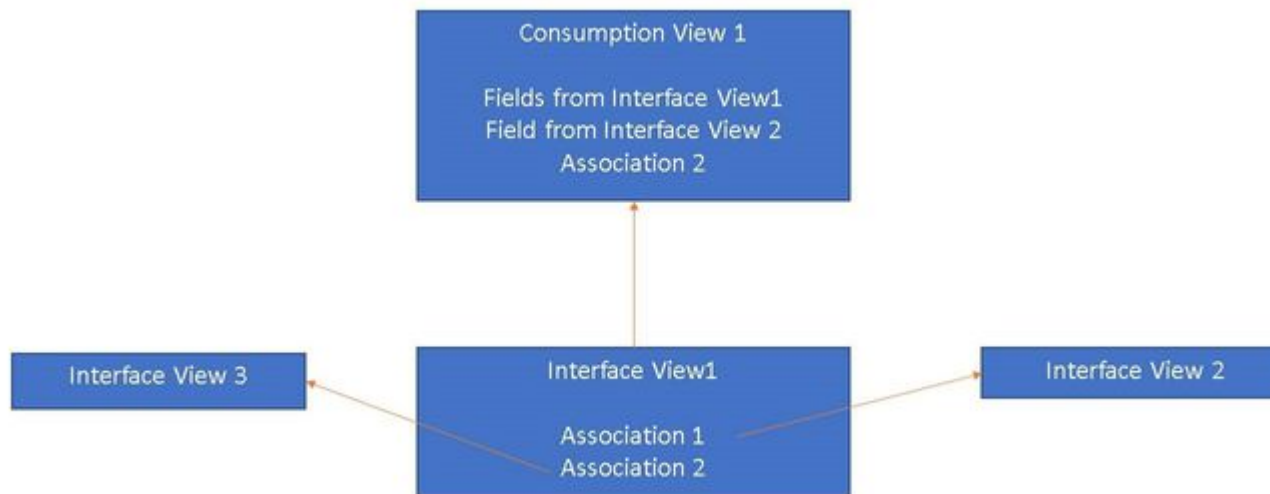
UI.lineItem			
position	label	importance
10	label1	#HIGH

Annotation Syntax: Single Line Array Type

In some cases, a term is self is an array type, but most of its usage only have single line of record.

In this situation, you can use object style to simplify the input.

CDS Associations:



CDS Associations



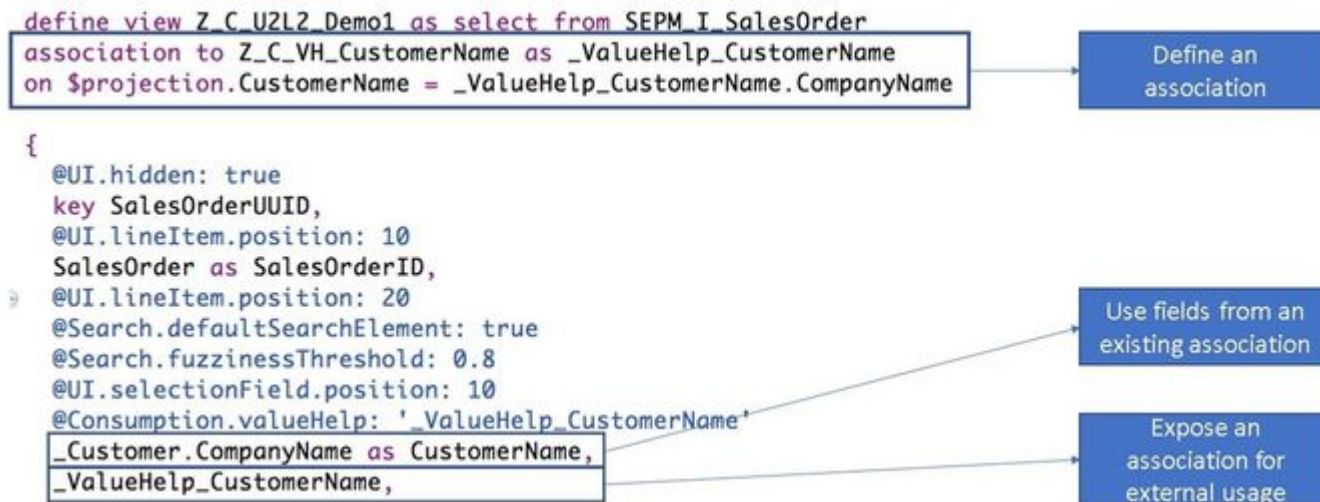
A CDS view can define some associations. Association is a declare of relationship of views which can be consumed by itself or by the consumer of this CDS view.

Usually you need to define some reusable CDS views, which defines associations as a represent of business entity. Then you can write a consumption CDS view , which uses interface view as its data source, to consume the data and associations.

In this diagram:

Interface View 1 have two associations connect to Interface View 3 and Interface View 2 When consumption view 1 access data of interface view 1, it can:

- Access fields of Interface View 1
- Access fields of Interface View 2 through association 1 of interface view 1
- Expose Association 2 of Interface View 1 again, to let consumer of this view have the ability to access field of Interface View 3



Syntax of Association

The figure, Syntax of association, shows the 3 main areas of an association.

These are:



Define an association:

The define of association is quite like SQL JOIN syntax. A easy way to reference fields in current project list is \$projection.






Use fields from an existing association:

You can access fields from associated CDS view by connect association name and fields name with a period '. The association can be defined either in current CDS view or the data source view.

Expose an association for external usage:

To expose an association for consumer of this view, write the name of association in the projection list. Since we can not distinguish association and fields, usually we use '_' as first char for association name.

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