

CGE371 – How to Efficiently Develop for SAP Fiori with SAP Fiori Elements

PUBLIC

Speakers 2018



SAP TechEd Las Vegas

October 2–5, 2018

Stefan Engelhardt

Alex Avizov

Tzanko Stefanov

SAP TechEd Barcelona

October 23–25, 2018

Stefan Engelhardt

Lidor Tal

Tzanko Stefanov

SAP TechEd Bangalore

November 28–30, 2018

Palla Golla Dwarakesh

Raghav Komati

Take the session survey.

We want to hear from you!

Be sure to complete the session evaluation
on the SAP TechEd mobile app.



Download the app from
iPhone App Store or Google Play.



Disclaimer

The information in this presentation is confidential and proprietary to SAP and may not be disclosed without the permission of SAP. Except for your obligation to protect confidential information, this presentation is not subject to your license agreement or any other service or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or any related document, or to develop or release any functionality mentioned therein.

This presentation, or any related document and SAP's strategy and possible future developments, products and or platforms directions and functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information in this presentation is not a commitment, promise or legal obligation to deliver any material, code or functionality. This presentation is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. This presentation is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in this presentation, except if such damages were caused by SAP's intentional or gross negligence.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

Agenda

What is SAP Fiori Elements?

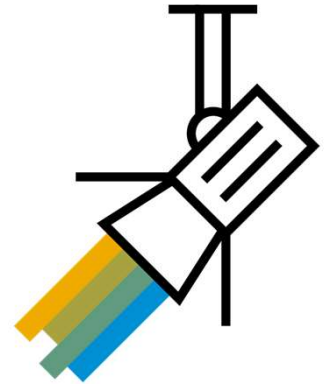
What are OData and OData annotations?

How does SAP Fiori Elements work?

Demo and explanation of the Overview Page

SAP Web IDE Intro

Exercise



Agenda

What is SAP Fiori Elements?

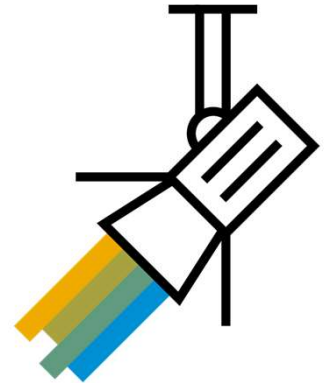
What are OData and OData annotations?

How does SAP Fiori Elements work?

Demo and explanation of the Overview Page

SAP Web IDE Intro

Exercise



What is SAP Fiori Elements?

Framework to quickly build user interfaces with SAPUI5

Works with OData and OData annotations, independent of the backend technology

Offers several templates:

- List Report
- Object Page
- Overview Page
- Analytical List Page

Great for standard apps

Comparison to traditional SAPUI5 development

	Traditional SAPUI5	SAP Fiori elements
UI / Views	Full flexibility	Predefined templates, limited flexibility.
Controller logic	Full flexibility but expensive	Offers generically CRUD and draft pattern. Limited extensibility.
Design guidelines	App developer has to take care	Incorporated
UX consistency	App developer has to take care	Incorporated
Cost of development	Rather expensive (depends on required functionality)	Cheap (depends on extensions)
Knowledge needed	JavaScript / SAPUI5	For basic app: Odata annotations, for extensions: JavaScript / SAPUI5

Agenda

What is SAP Fiori Elements?

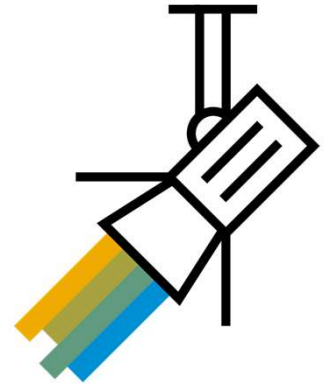
What are OData and OData annotations?

How does SAP Fiori Elements work?

Demo and explanation of the Overview Page

SAP Web IDE Intro

Exercise



What is OData?

OData (Open Data Protocol) is a standard for building and consuming RESTful APIs

Offers a machine-readable description of the data model of the API

Updatable OData services support Create, Update and Delete operation for some or all exposed entities


Allows querying the service with URL parameters

- Example: GET `serviceRoot/People?$filter=FirstName eq 'Scott'`

What are OData annotations?

Example: Form

HT-1010 Notebook Professional 15



Category: Computer Systems
Sub-Category: Notebooks
Supplier: TECUM (100000005)

PRODUCT INFORMATION REVIEWS

Technical Data

Product Height:
3.000 CM

Product Width:
30.000 CM

Product Depth:
18.000 CM

```
<Annotations Target="SEPMRA_PROD_MAN.SEPMRA_C_PD_ProductType">
  <Annotation Term="com.sap.vocabularies.UI.v1.FieldGroup" Qualifier="TechData">
    <Record>
      <PropertyValue Property="Label" String="Technical Data" />
      <PropertyValue Property="Data">
        <Collection>
          <Record Type="com.sap.vocabularies.UI.v1.DataField">
            <PropertyValue Property="Value" Path="Height" />
          </Record>
          <Record Type="com.sap.vocabularies.UI.v1.DataField">
            <PropertyValue Property="Value" Path="Width" />
          </Record>
          <Record Type="com.sap.vocabularies.UI.v1.DataField">
            <PropertyValue Property="Value" Path="Depth" />
          </Record>
        </Collection>
      </PropertyValue>
    </Record>
  </Annotation>
</Annotations>
```

Vocabulary-based Annotations

What are OData annotations?

Example: Annotations in Core Data Services (CDS)

```
define view SEPMRA_C_PD_Product as select from ... as Product
  association [0..1] to SEPMRA_C_PD_Supplier as _Supplier on ...
  @UI.hidden: true
  key Product.ActiveProduct,
  @UI.fieldGroup: {qualifier: 'TechData', groupLabel: 'Technical Data'}
    Product.Height,
  @UI.fieldGroup: {qualifier: 'TechData'}
    Product.Width,
  @UI.fieldGroup: {qualifier: 'TechData'}
    Product.Depth,
  @Semantics.amount.currencyCode: 'Currency'
    Product.Price,
  @Semantics.currencyCode: true
    Product.Currency,
  ...
```

View definition

Definition of an association

Definition of a **FieldGroup** annotation

Definition of a **Currency** annotation

Core Data Services

Agenda

What is SAP Fiori Elements?

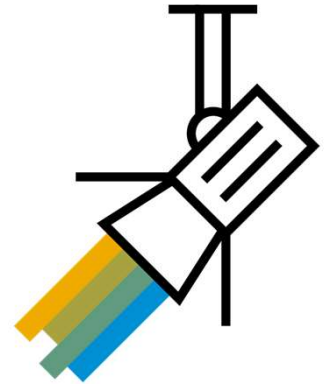
What are OData and OData annotations?

How does SAP Fiori Elements work?

Demo and explanation of the Overview Page

SAP Web IDE Intro

Exercise



How does SAP Fiori elements work?

```
<Schema Namespace="ZUX165_CUSTOMER_INVOICE_SRV" ...>
<EntityType Name="ZUX165_CustInvoiceType" sap:label="Customer Invoice">
  <Key><PropertyRef Name="CustomerInvoice"/></Key>
  <Property Name="CustomerInvoice" Type="Edm.String" Nullable="false" .../>
  <Property Name="Customer" Type="Edm.String" ... sap:label="Customer"/>
  <Property Name="CreatedAt" Type="Edm.DateTimeOffset"
    sap:label="Created At"/>
  <NavigationProperty Name="to_Customer" ... />
</EntityType>
<EntityType Name="ZUX165_SalesOrderType" ...>
  <Key><PropertyRef Name="ID"/></Key>
  <Property Name="NetAmountInTransactionCurrency"
    Type="Edm.Decimal" ...
    sap:unit="TransactionCurrency"/>
</EntityType>
```

OData Services

```
<Schema Namespace="UX165CustomerInvoice.ZUX165_CUSTOMER_INVOICE_SRV" ...>
<Annotations Target="ZUX165_CUSTOMER_INVOICE_SRV.ZUX165_CustInvoiceType">
  <Annotation Term="UI.Identification">
    <Collection>
      <Record Type="UI.DataField">
        <PropertyValue Property="Value" Path="Customer" />
      </Record>
      <Record Type="UI.DataField">
        <PropertyValue Property="Value" Path="CreatedAt" />
      </Record>
    </Collection>
  </Annotation>
</Annotations>
```

OData Annotations

```
dataServices: {
  dataServiceVersion:"2.0",
  schema: [ {
    $path: "/dataServices/schema/0",
    association: [...],
    entityContainer: [...],
    entityType: [ {...}, ...
    {
      $path: "/dataServices/schema/0/entityType/9",
      com.sap.vocabularies.Common.v1.Label: {
        String:"Customer Invoice"
      }
      com.sap.vocabularies.UI.v1.HeaderInfo: {...},
      com.sap.vocabularies.UI.v1.Identification: [ {
        EdmType: "Edm.String",
        RecordType: "com.sap.vocabularies.UI.v1.DataField",
        Value: { Path: "Customer" },
      }, {
        EdmType: "Edm.DateTimeOffset",
        RecordType: "com.sap.vocabularies.UI.v1.DataField",
        Value: { Path: "CreatedAt" }
      } ],
      name:"ZUX165_CustInvoiceType",
      namespace:" ZUX165_CUSTOMER_INVOICE_SRV ",
      navigationProperty: [...],
      property: [...],
    }
  ]
}
```

UI5 OData MetaModel

How does SAP Fiori elements work?

```
{
  $path: "/dataServices/schema/0/entityType/9",
  com.sap.vocabularies.Common.v1.Label: {
    String:"Customer Invoice"
  }
  com.sap.vocabularies.UI.v1.Identification: [ {
    EdmType: "Edm.String",
    RecordType: "com.sap.vocabularies.UI.v1.DataField",
    Value: { Path: "Customer" },
  }, {
    EdmType: "Edm.DateTimeOffset",
    RecordType: "com.sap.vocabularies.UI.v1.DataField",
    Value: { Path:"CreatedAt" }
  } ],
  name:"ZUX165_CustInvoiceType",
}
```

UI5 OData MetaModel



```
<sfo:SmartForm id="..." editable="{ui}/editable">
  <template:with path="facet>Target" helper="...resolvePath" var="target">
    <sfo:Group id="..." binding="{parts: [{path: 'facet>Target'},
      {path: 'entitySet'}]}, formatter: '...' ">
      <template:repeat list="{target}" var="dataField">
        <sfo:GroupElement id="...">
          <sfi:SmartField id="..." change=".EventHandlers.onChange"
            value="{path: 'dataField>Value', formatter: 'AH.format'}" />
        </sfo:GroupElement>
      </template:repeat>
    </sfo:Group>
  </template:with>
</sfo:SmartForm>
```

UI5 XML View Template

```
<sfo:SmartForm id="..." editable="{ui}/editable">
  <sfo:Group id="..." binding="{}">
    <sfo:GroupElement id="...">
      <sfi:SmartField id="..."
        change=".EventHandlers.onChange"
        value="{path: 'Customer',
          type: 'sap.ui.model.odata.type.String',
          constraints:{'maxLength':'10'}}"/>
    </sfo:GroupElement>
    <sfo:GroupElement id="...">
      <sfi:SmartField id="..."
        change=".EventHandlers.onChange"
        value="{path: 'CreatedAt',
          type: 'sap.ui.model.odata.type.DateTime'}"/>
    </sfo:GroupElement>
  </sfo:Group>
</sfo:SmartForm>
```

UI5 XML View

Agenda

What is SAP Fiori Elements?

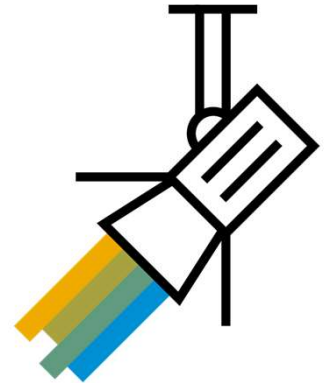
What are OData and OData annotations?

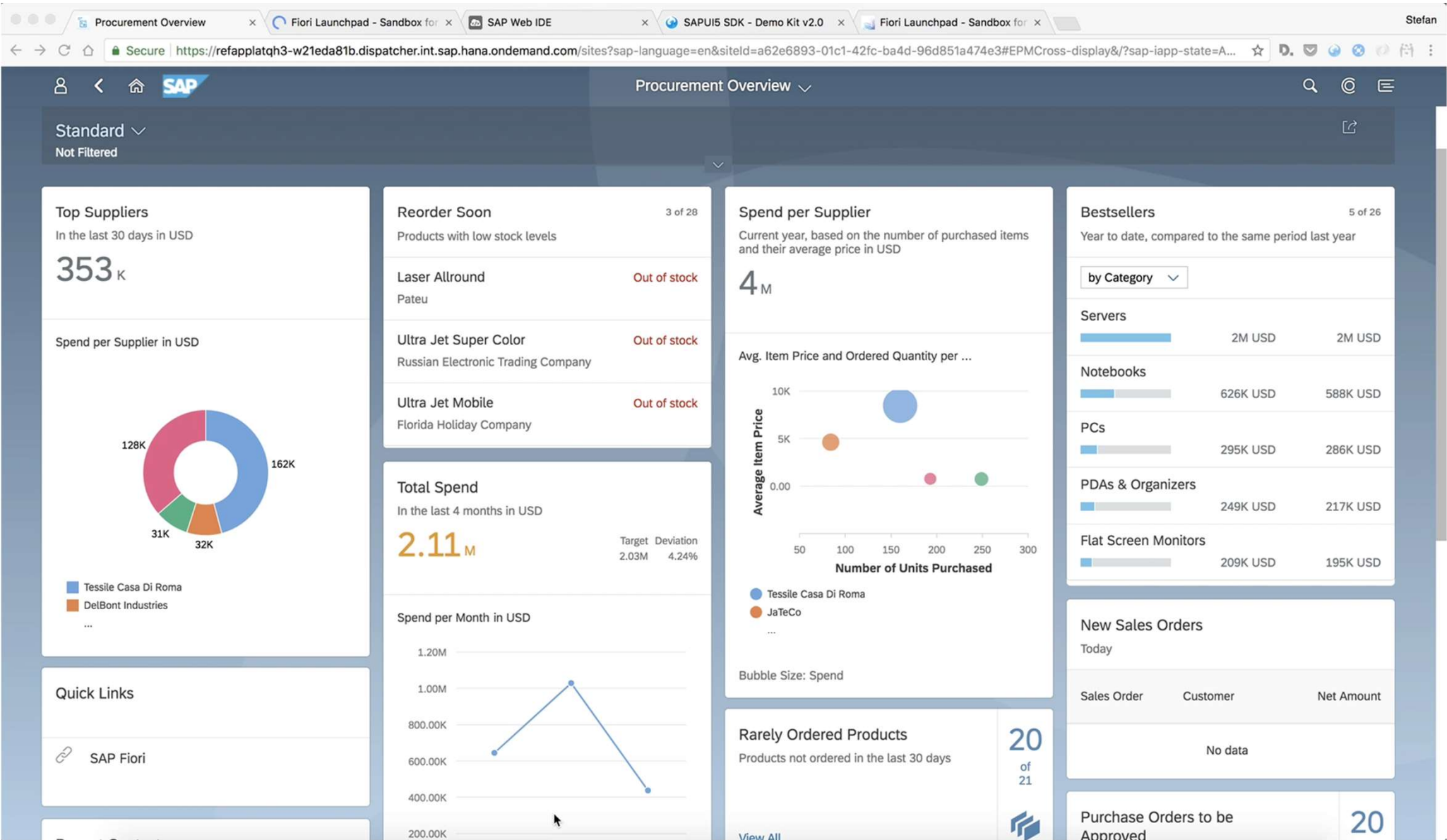
How does SAP Fiori Elements work?

Demo and explanation of the Overview Page

SAP Web IDE Intro

Exercise





Agenda

What is SAP Fiori Elements?

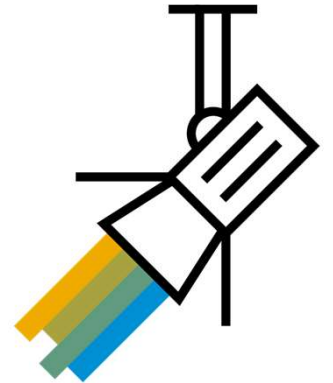
What are OData and OData annotations?

How does SAP Fiori Elements work?

Demo and explanation of the Overview Page

SAP Web IDE Intro

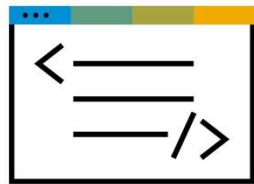
Exercise



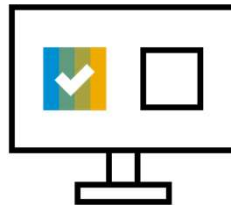
Product Description



SAP Web IDE is a powerful, extensible, web-based integrated development tool that simplifies end-to-end SAP Fiori, SAPUI5, and full-stack SAP business application development



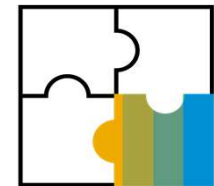
Develop



Test

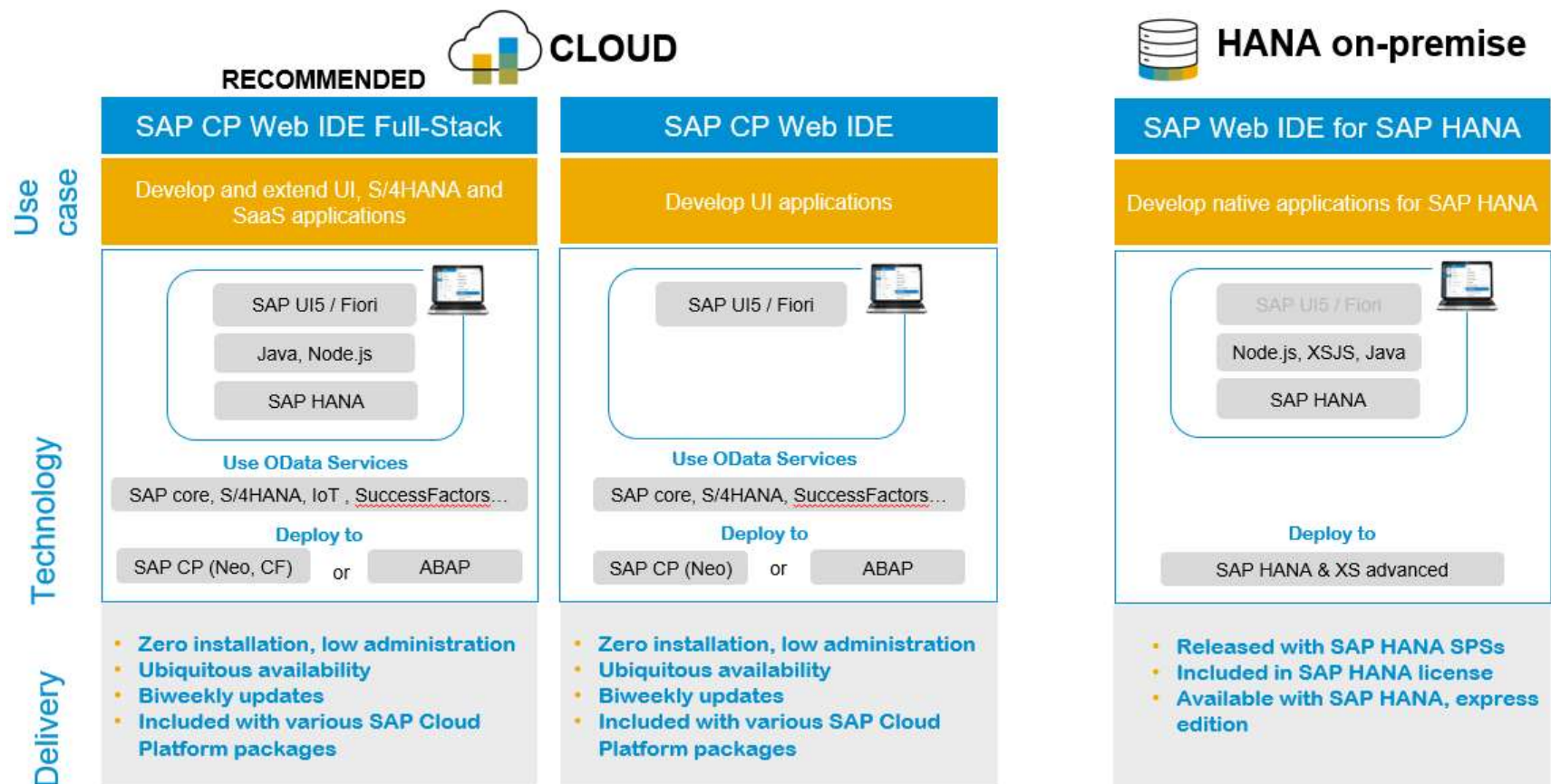


Build and deploy



Extend apps

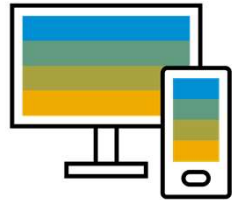
Delivery Options



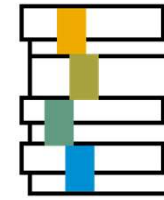
[Additional information on migration to full-stack version](#)

SAP Web IDE

Key Use Cases



Build & extend SAP
Fiori / UI applications



Develop and extend
SaaS and S/4HANA



SAP Leonardo (IoT)
applications



Develop mobile
applications

Agenda

What is SAP Fiori Elements?

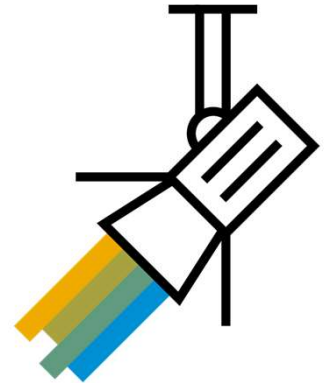
What are OData and OData annotations?

How does SAP Fiori Elements work?

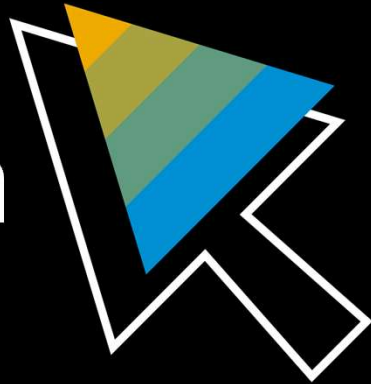
Demo and explanation of the Overview Page

SAP Web IDE Intro

Exercise



Hands-on



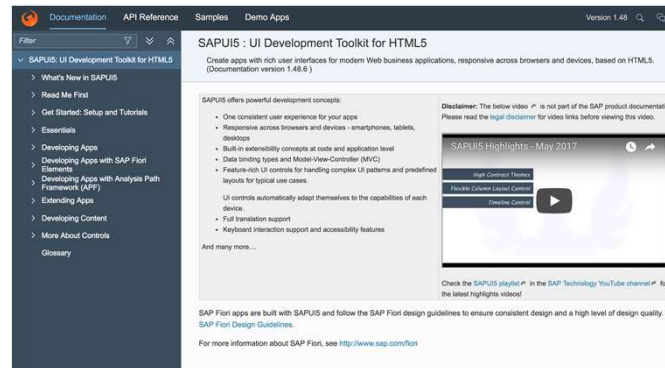
All materials for the hands on are available at: <https://bit.ly/2LEhyyw>

The Full Stack WebIDE can be found at: <https://webidecp-i9c538c385.dispatcher.int.sap.hana.ondemand.com/> .

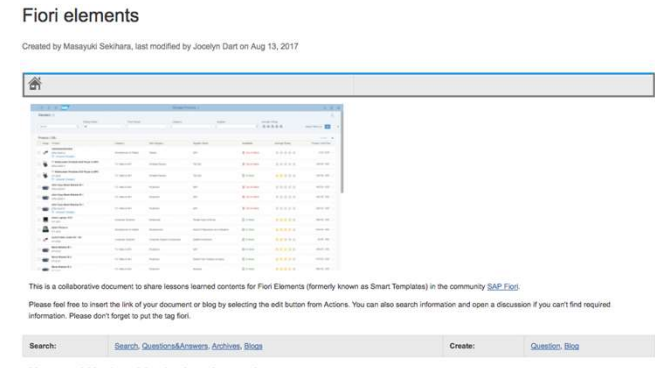
SAP Fiori elements: essential enablement information



Design Guidelines



Developer Documentation

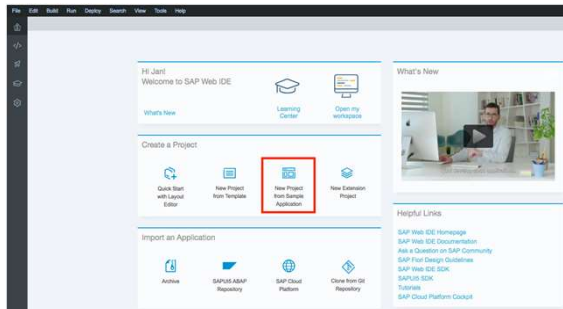


SAP Fiori elements on SCN

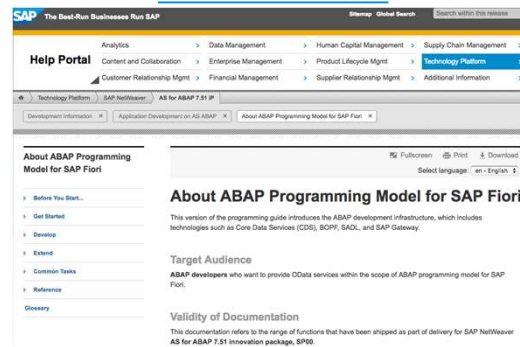
Fiori elements developer documentation



Sample SAP Fiori apps in SAP Web IDE



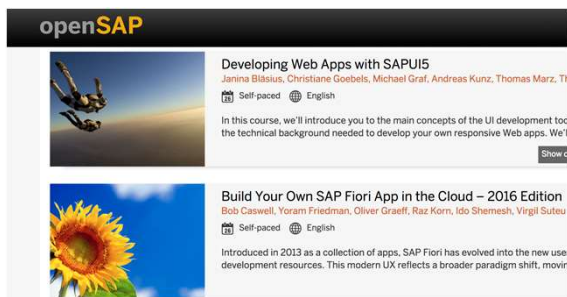
[Development of OData services with annotations on ABAP](#)



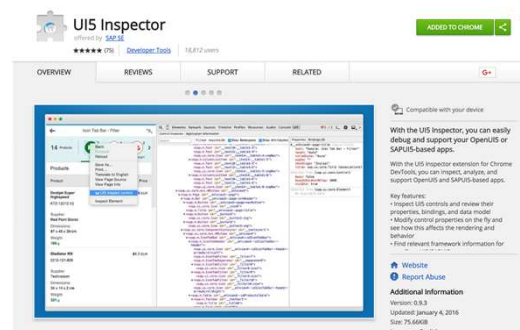
[All Things Fiori](#)



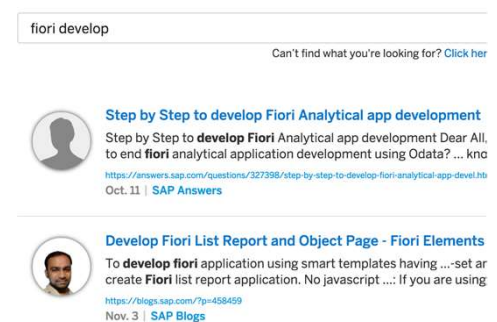
[Free courses on openSAP](#)



[UI5 Inspector for Chrome](#)




[SAP Developer Community](#)







Annotations: Reference Adding semantics to data

- Based on **SAP metadata extensions**, introduced in OData4SAP (based on **OData v2**)
 - Description of SAP extensions: <http://scn.sap.com/docs/DOC-44986>
(SAP Annotations for OData Version 2.0)
- Based on **vocabularies**, introduced in **OData v4**
 - Vocabularies:
<http://docs.oasis-open.org/odata/odata/...>
SEGW (SAP Gateway Service Builder) Extras –
Vocabulary Repository
 - Can be expressed in two ways
 - Embedded in OData service
 - Defined in separate annotation documents

**SAP Common** vocabulary in SAP
Community Network at:
<http://scn.sap.com/docs/DOC-72113>

**SAP UI** vocabulary in SAP Community
Network at:
<http://scn.sap.com/docs/DOC-74531>

**SAP Communication** vocabulary in
SAP Community Network at:
<http://scn.sap.com/docs/DOC-74532>



SAP Web IDE further information

Key links

- Homepage [SAP Web IDE Home Page](#)
- SAP Cloud Platform [SAP Web IDE Page on SCP](#)
- Learning Journey [SAP Web IDE Learning Journey](#)
- YouTube [SAP Web IDE YouTube Channel](#)
- SAP Road Maps <http://www.sap.com/roadmaps>

Contact us

- Technical Q&A (SAP Community) <https://www.sap.com/community>
- Product ideas [SAP Continuous Influence](#)
- Contact the SAP Web IDE Team sapwebide@sap.com
- Newsletter [SAP Web IDE Newsletter Registration](#)

Miscellaneous

- SAP Store [SAP Web IDE on SAP Store](#)



SAP TechEd online / SAP Community

Access replays of:

- Keynotes
- SAP TechEd live interviews
- Selected lecture sessions

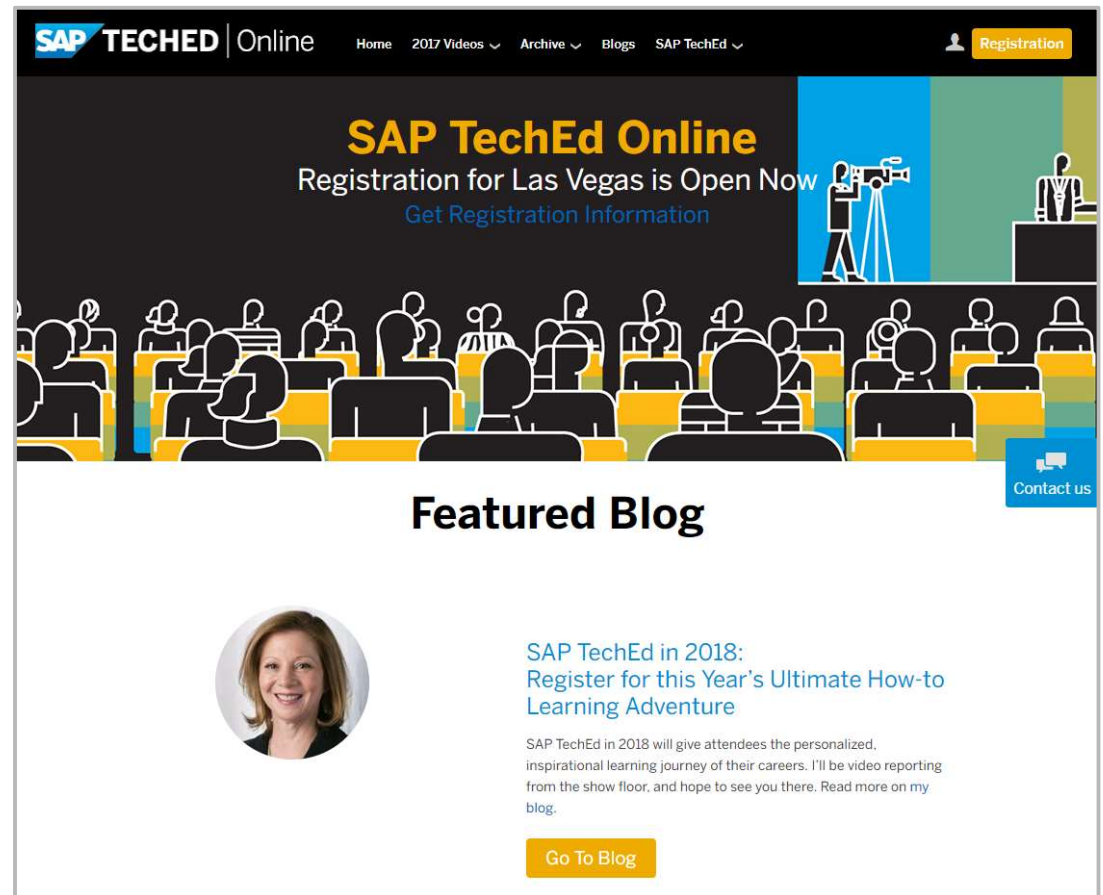
<http://sapteched.com/online>

Continue your **SAP TechEd** discussion after the event within **SAP Community**:

- Read and reply to blog posts
- Ask your questions
- Join conversations

sap.com/community

See all [SAP TechEd blog posts](#)



Further information



Related SAP TechEd content journeys

CGE2 – How to Design and Develop SAP Fiori Apps

CNA7 – How to Rapidly Build Cloud Applications

Related SAP TechEd sessions

CGE360 – SAP Fiori Elements – Analytical List Page

CGE639 – Develop and Troubleshoot SAP Fiori Elements with Next-Generation Tools

CGE205 – What's New with SAP Fiori Elements

CGE877 - SAP Web IDE: Roadmap and Q&A

CGE600 - Get Your SAP Fiori App Done Right The First Time - with SAP Web IDE quality tools! (Codejam)

CGE719 - Development efficiency and tools integration using Web IDE (Code Review)

OPP611 - Automated testing in the cloud - easy with SAP Web IDE (Codejam)

CNA704 - Easily enrich SAP Web IDE with the functionality you need (Code Review)

CGE367 - Build Your SAP Fiori App from Back End to User Interface (Hands-On 2h)

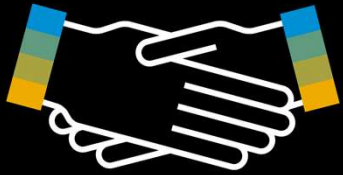
Public SAP Web sites

SAP Community: www.sap.com/community

SAP products: www.sap.com/products

SAP training and certification opportunities

www.sap.com/education



Thanks for attending this session.



Feedback

Please complete your session evaluation for **CGE371**.

Contact for further topic inquiries

Tzanko Stefanov
CPO, SAP Fiori Element
tzanko.Stefanov@sap.com