Introduction to OpenUI5
Mobile Web App Development

SAP InnoJam - TechFire

SAP

What is OpenUI5 all about?

UI development toolkit for HTML5
Open Source Technologies

Built with Leading Web Technologies…

HTML5	CSS3
jQuery	LESS
OData	D3.js
OpenAJAX	ARIA

…and became Open Source @ 11/12/2013

https://sap.github.io/openui5/

Difference between SAPUI5 & OpenUI5: no charts in OpenUI5, SAP Web IDE uses SAPUI5

UI development toolkit for HTML5
Responsive Web Design

Examples of SAPUI5 apps
SAP Fiori

Model-View-Controller Concept

Model
Manages data and change subscriptions

View
Provides output representation of application

Controller
Handles user interaction

updates

manipulates
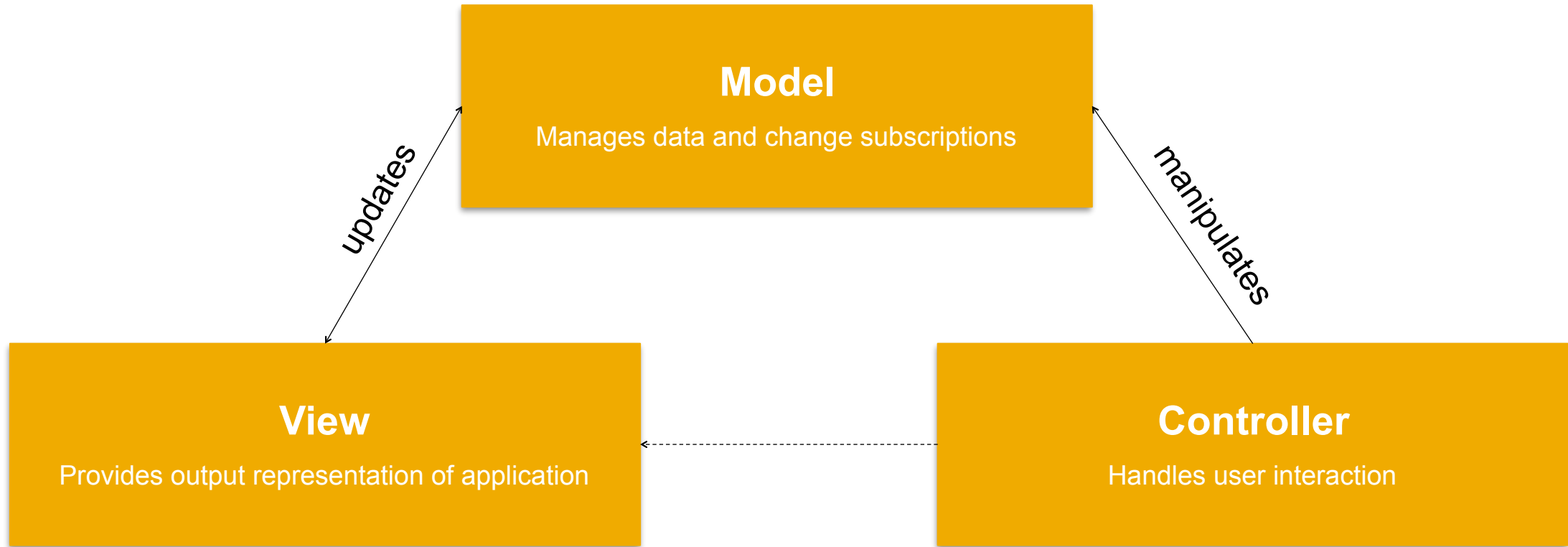
Model, View, Controller in detail

XML-based View

Collection of UI controls, positioned using layouts and containers

Automatic re-rendering whenever a property (1:1) or aggregation (1:N) changes

JavaScript-based Controller

Used for handling UI events and for setting up the view

Data Model

Supported data sources: JSON, XML, OData, Resource Bundles (translations)

Loads, holds, and updates all application data

Data is attached (bound) to controls through data bindings.

Routing 101

Routing is a mechanism for in-app navigation for supporting…

… browser history handling

… bookmarks/ deep links
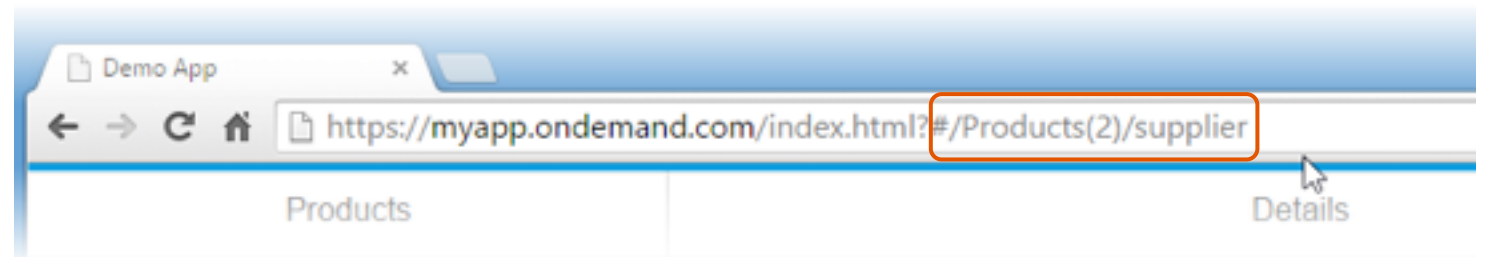
How routing works:

Your web app component will define routes, such as

product	→	**#/product**
product/{id}	→	**#/product/5** or **#/product/3**
product/{id}/detail/:detailId:	→	**#/product/5/detail/3** or **#/product/5/detail**

When a route matches, the shown view is switched out and an event is thrown.

How to start

Prepare Local Development Environment

Text editor / IDE of your choice

```html
<!DOCTYPE html>
<html>
<head>
        <meta http-equiv="X-UA-Compatible" content="IE=edge"/>
        <meta charset="UTF-8">
        <title>Hello World App</title>
        <script src="https://sapui5.hana.ondemand.com/resources/sap-ui-core.js"
                    id="sap-ui-bootstrap"
                    data-sap-ui-theme="sap_bluecrystal"
                    data-sap-ui-libs="sap.m">
        </script>
        <script type="text/javascript">
                    sap.ui.getCore().attachInit(function () {
                              // your coding here
                    });
        </script>
</head>
<body class="sapUiBody" id="content">
</body>
</html>
```

Use a http server!!!

(serving sapui5 app, pictures/JSON files)

`python –m SimpleHTTPServer`

→ `http://localhost:8000`

(or use node.js http-server port 8080)

If you work with Eclipse, use tomcat

Brackets Editor has a built in http-server

Accessing remote resources (Cross origin)

`"C:\Program Files (x86)\Google\Chrome\Application\chrome.exe"` `--disable-web-security`

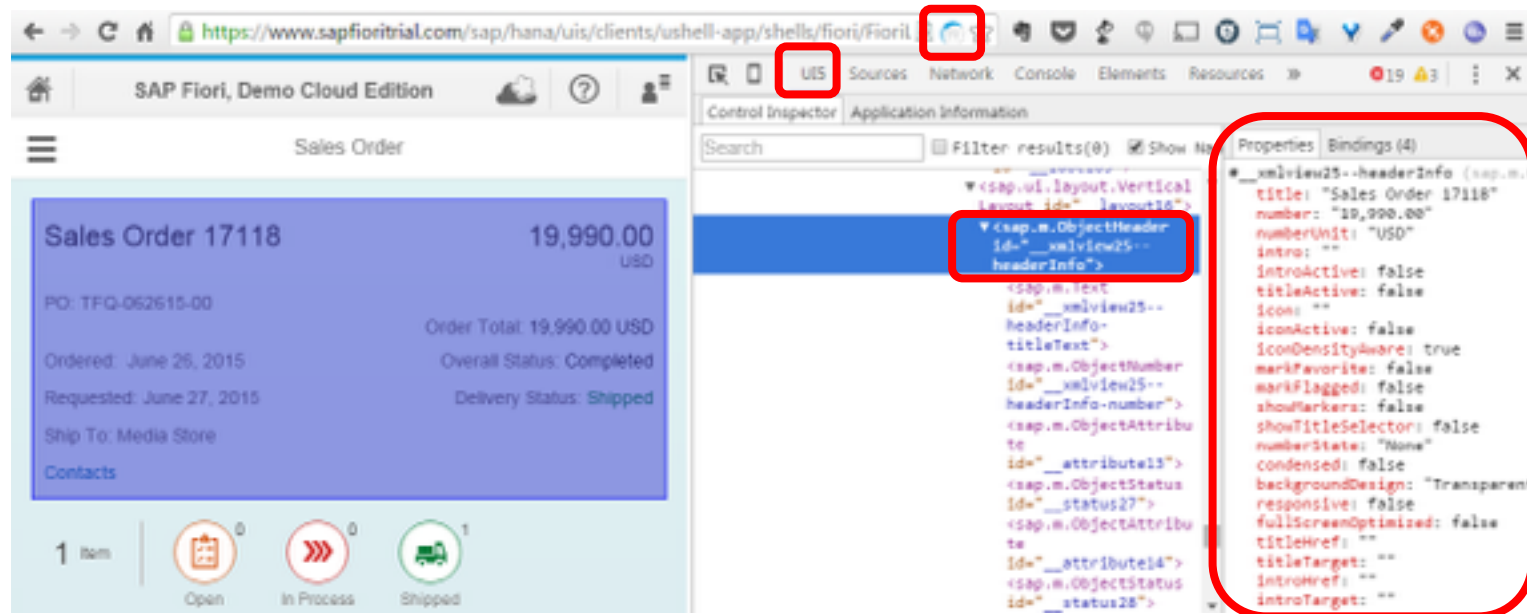*If you work with Eclipse, than use a proxy servlet*

Example

Tips for SAP InnoJam

Development tips 1

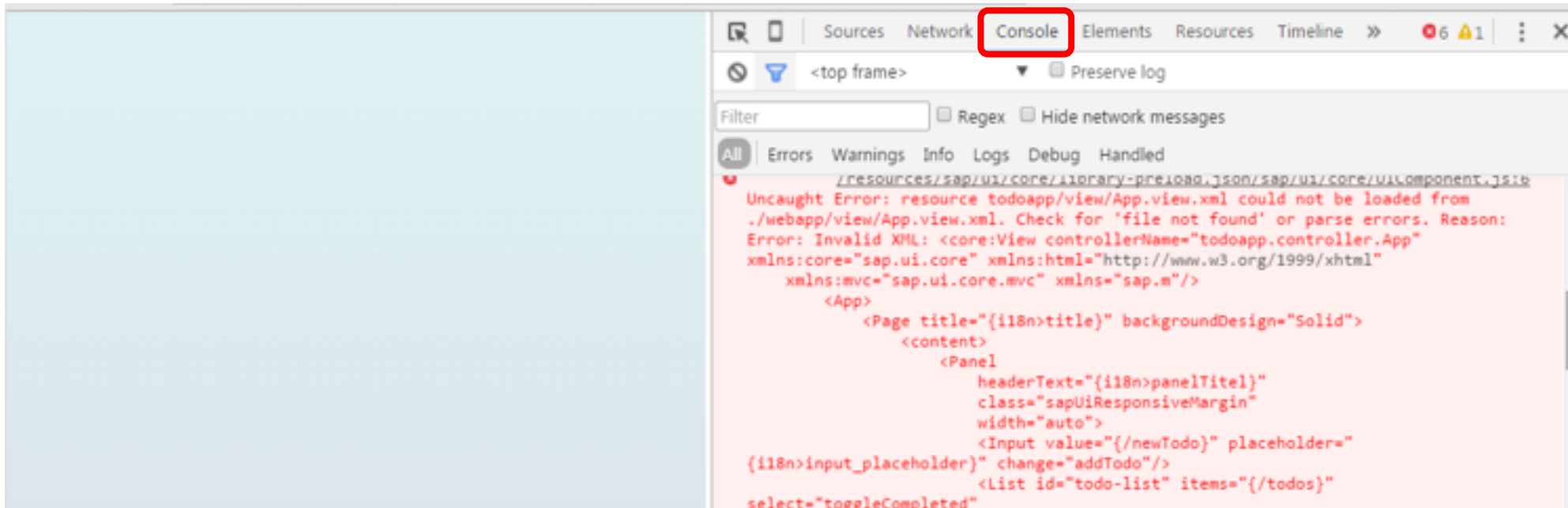## Use the SAPUI5 Chrome Inspector
Debug your apps, inspect other apps

https://github.com/SAP/ui5-inspector
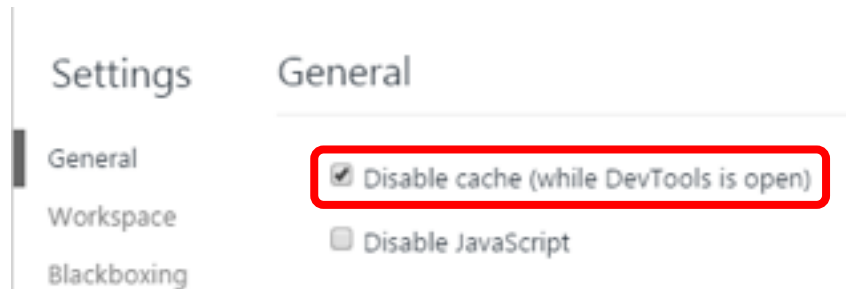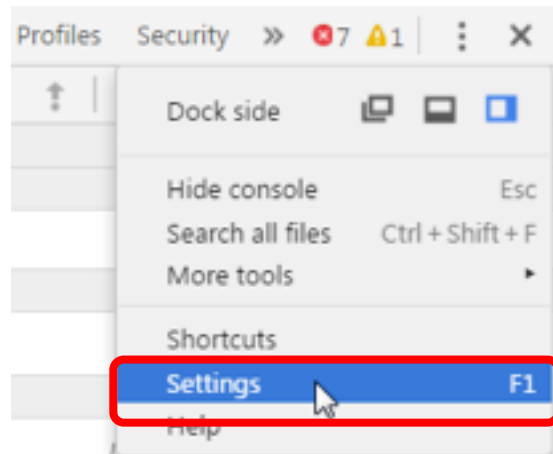
Development tips 2

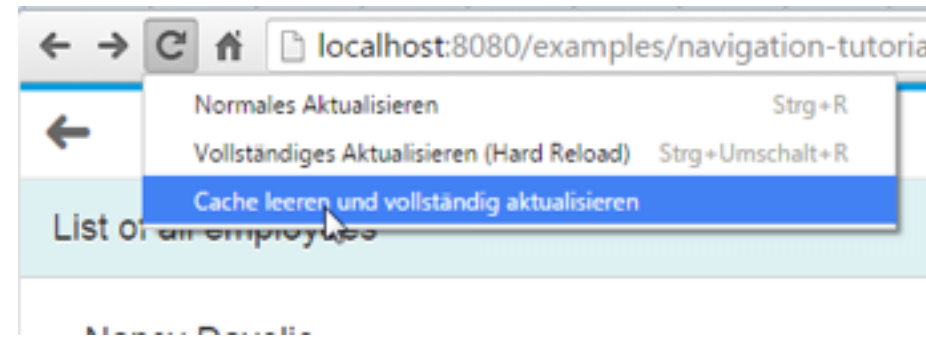**Bluescreen?**

Look into your console!

Development tips 3

Caching problems?
Chrome – open DevTools, disable cache

Chrome – open DevTools,
long click on refresh, select clear cache

Development tips 4

Namespaces (SAPUI5)

index.html

```html
<script id="sap-ui-bootstrap"
    src="https://sapui5.hana.ondemand.com/resources/sap-ui-core.js"
    type="text/javascript"
    data-sap-ui-libs="sap.m"
    data-sap-ui-theme="sap_bluecrystal"
    data-sap-ui-bindingSyntax="complex"
    data-sap-ui-compatVersion="edge"
    data-sap-ui-preload="async"
    data-sap-ui-resourceroots='{"todoapp": "./webapp"}'>
</script>
```

```html
<script>
    sap.ui.getCore().attachInit(function() {
        new sap.m.Shell({
            app: new sap.ui.core.ComponentContainer({
                height : "100%",
                name : "todoapp"
            })
        }).placeAt("content");
    });
</script>
```

webapp/Component.js

```javascript
sap.ui.define([
    "sap/ui/core/UIComponent",
    "sap/ui/Device",
    "todoapp/model/models",
    "sap/ui/model/json/JSONModel"
], function(UIComponent, Device, models, JSONModel) {
    "use strict";

    return UIComponent.extend("todoapp.Component", {
```

webapp/view/App.view.xml

```xml
<core:View controllerName="todoapp.controller.App"
    xmlns:core="sap.ui.core" xmlns:html="http://www.w3.org/1999/xhtml"
    xmlns:mvc="sap.ui.core.mvc" xmlns="sap.m">
```

webapp/controller/App.controller.js

```javascript
sap.ui.define([
    "sap/ui/core/mvc/Controller"
], function(Controller) {
    "use strict";

    return Controller.extend("todoapp.controller.App", {
```

Development tips 4

Start with a local JSON Model!

If there is time – or your backend peers work in parallel,
you could implement a real backend (REST/OData)

Don't waste too much time on a login screen!

Focus on a **functional app prototype** – something you can pitch and show

Charts are hard

If you use charts, start with the **ChartContainer** example, NOT VizFrame

Use XML views

All of the Explored examples are XML views, easier copy-paste-adapt

Explored app tip

Be aware of the XML namespaces!

Don't forget to declare the layout when you use a layout control!

❝❝ Useful links 1/2

HANA Cloud Platform - Free Developer Version
https://account.hanatrial.ondemand.com

OpenUI5 Documentation
https://openui5.hana.ondemand.com/

OpenUI5 Tutorials in the Documentation:
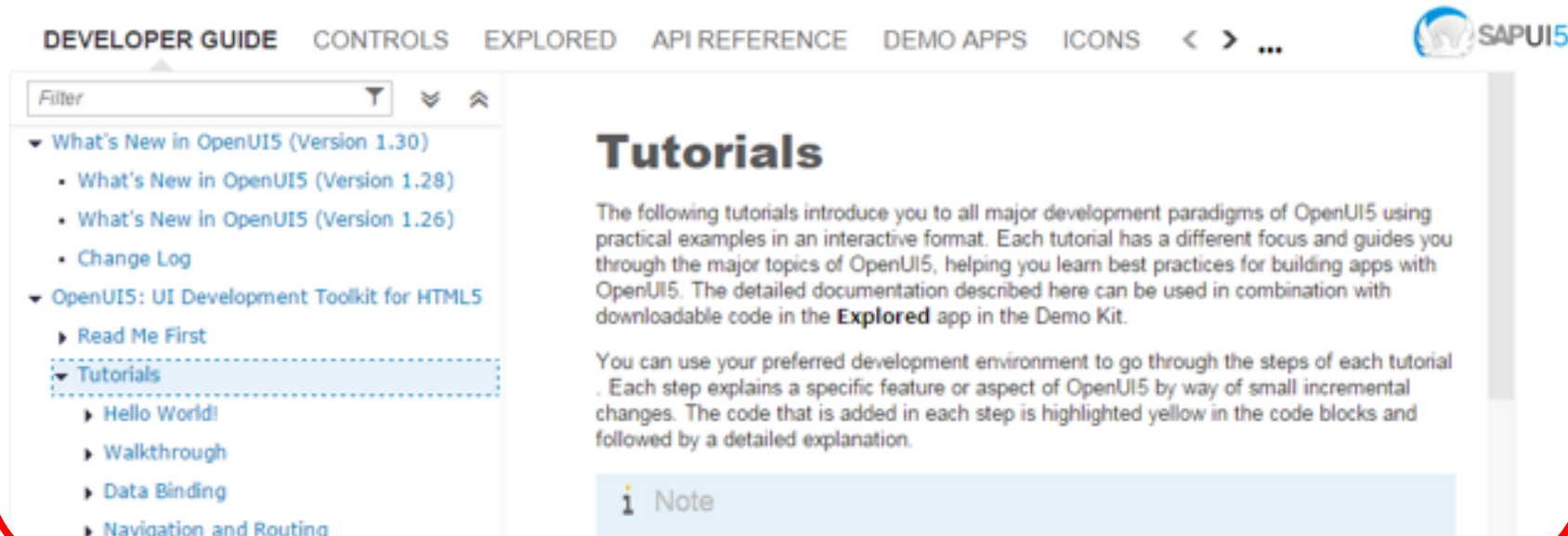
Useful links 2/2

OpenUI5 Overview
http://openui5.org/

OpenUI5 Explored – Controls overview
https://openui5.hana.ondemand.com/explored.html

Free MOOC by SAP: Build your Own SAP Fiori App in the Cloud
https://open.sap.com/courses/fiux1

SAPUI5 Space in SAP Community Network (SCN)
http://scn.sap.com/community/developer-center/front-end

Fiori Guidelines
http://experience.sap.com/fiori-guidelines

SAP WEB IDE Guides: http://scn.sap.com/docs/DOC-55465

❝❞ Examples repositories

Denise Nepraunig: fuzzy-octo-batman
Small self contained examples: MVC, JSON, CRUD, OData
https://github.com/denisenepraunig/fuzzy-octo-batman

SAP: OpenUI5 todo app (JSON) with localStorage
https://github.com/SAP/openui5-sample-app

Denise Nepraunig: todo app with OData and HANA XS backend
https://github.com/denisenepraunig/sapui5-hanaxs-examples/tree/master/todoapp

Denise Nepraunig: chuck_norris_jokes
OpenUI5 app with backend via HCP destination service
https://github.com/denisenepraunig/sapui5-hcp-examples/tree/master/chuck_norris_jokes

Thank you

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