ESPRESSO TUTORIALS

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Practical Guide to SAP® OpenUI5

- Fundamental OpenUI5 concepts
- How to define controls for an application
- SAP Fiori applications and design principles
- Real world examples of how to create applications using UI5

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Preface

This book progresses step by step, starting with the introduction and basics of ERP and SAP through to a complete overview of UI5. Each chapter contains detailed information on the relevant topics.

The main purpose of publishing this book about Open UI5 is to succinctly transfer knowledge about UI5 technology. SAP UI5 is a client UI technology which utilizes JavaScript, HMTL5 and CSS. UI5 can run in browsers and will be the future technology for many applications.

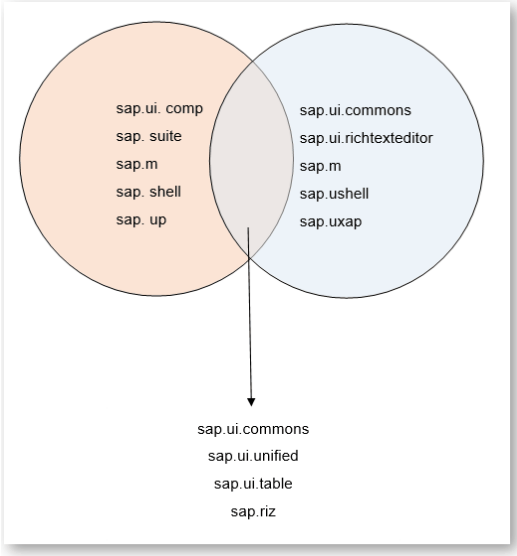
UI5 technology will help the transition from traditional systems to handheld and mobile devices.

2 OpenUI5—Getting started

The purpose of this chapter is to show OpenUI5 and the installation of the UI development toolkit library, along with the setup of the development environment. The UI toolkit holds a variety of rich user interfaces and elements for modern web-based applications

OpenUI5 uses a 3-digit version identifier (e.g. 1.12.3). The first digit “1” is the major version number. The second digit “12” is the minor version number and the third digit “3” is the patch version number. The latest release is 1.32.11 and provides new functionality for the debugger: UI5 Inspector (covered in later chapters), improved controls and better functionality.

2.1 Libraries in OpenUI5



SAPUI5 provides a set of JavaScript and CSS libraries which can be combined and used in an application to increase the functionality. The library combinations have certain guidelines and can be seen in the below figure.

Refer to Figure 2.1 to see the possible correct combinations.

Figure 2.1: UI5 libraries

Libraries listed in the middle area can be combined with libraries listed on the left (e.g. sap.m + sap.ui.table) or with libraries on the right side

(e.g. sap.ui.commons + sap.ushell). However, libraries listed on the left side cannot be combined with libraries listed on the right side.

SAPUI5 consists of the latest JS (JavaScript) application programming interfaces (APIs) and can only run on browsers supporting HTML5. Libraries such as sap.ui.core, sap.ui.layout and sap.ui.unified are basic libraries that support all platforms. Commonly used libraries are sap.m for mobile devices and sap.commons for web applications.

Figure 2.2 and Figure 2.3 show the differences when using different libraries.

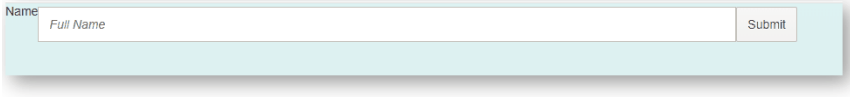


Figure 2.2 : UI5 sample using sap.m library

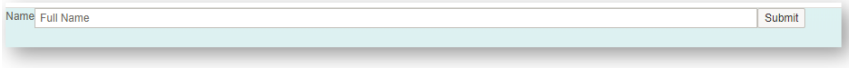


Figure 2.3: UI5 sample using sap.commons library

2.2 OpenUI5 development environment

OpenUI5 is a client-side UI technology that runs on a browser using JavaScript, HTML and CSS. Server-side, on the other hand, is responsible for deploying applications, holding UI5 libraries and connecting with databases. *SAP NetWeaver Application Server,* for example, holds UI libraries and makes the libraries available for the client side when receiving a request.

Application development using OpenUI5 is initiated by setting up a development environment in the front-end PC and a UI5 library installed in the backend. Depending on your requirements, you can implement any one of the following:

- SAP Web IDE is a well-formulated environment used mainly for developing complex applications. It provides support and functionality on Fiori and mobile hybrid applications, and has a wide range of plugins and templates.

- Eclipse tools enable you to develop simple applications. Eclipse IDE provides setup wizards and plugins for support, which make navigation and implementation of code faster.
- The SAP HANA Studio Developer Edition is available if you are looking to develop for SAP HANA.
- OpenUI5 runtime kit can be installed via *http://openui5.org/download.html#stableRelease*. Unzip the contents and deploy it on a server such as an Apache HTTPD server (*www.apache.org*) or refer to the online version of OpenUI5 by typing *https://sapui5.hana.ondemand.com/resources/sap-ui-core.js* in the header section of the main HTML file.

Content delivery network (CDN)

If you wish to load resources externally, use a content delivery network (CDN). CDN is defined as a system of distributed networks maintained at multiple data centers. Its primary purpose is to provide content to users depending on their geographic location.

2.3 Eclipse installation

An easier way of developing UI5 is by using Eclipse IDE (*http://www.eclipse.org/downloads/*) in addition to the SAP development toolkit (*https://tools.hana.ondemand.com/*) and Apache Server. Before Installing Eclipse, we need to install the latest Java JDK version. Eclipse Luna and Kepler are the versions currently supported for SAP tools, with Luna being the well-revised version.

For Eclipse installation, follow the steps below:

- Download Eclipse IDE for java developers—Luna version. Extract all the files from the zip folder and run the eclipse.exe file. A window pops up, asking you to provide your workspace folder path. Workspace is where all your programs, servers and metadata are stored.

- After Eclipse, we need to install the SAPUI5 toolkit. On the Eclipse main window (menu bar) click on HELP followed by INSTALL NEW SOFTWARE, as can be seen in Figure 2.4. This opens a pop-up window where you create a repository for storing SAPUI5 toolkit contents and provide appropriate Name and Location (provide URL *https://tools.hana.ondemand.com/luna/* in the location field).

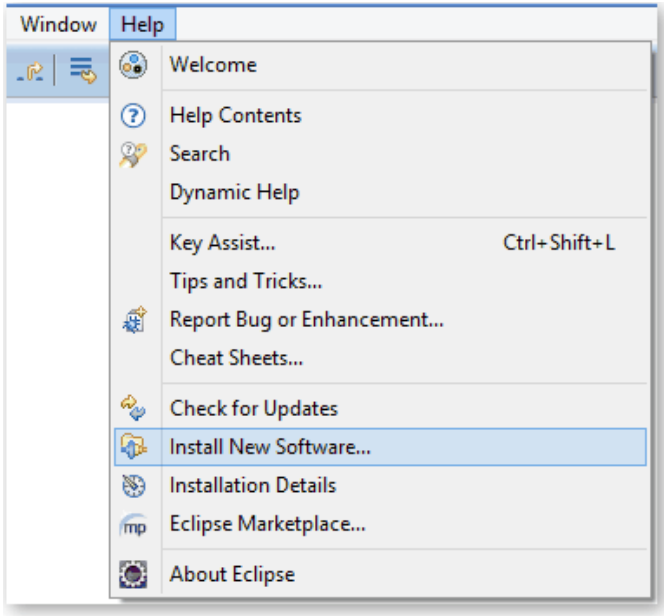


Figure 2.4: Install new software

- A list of items appears that are available under that URL. To develop SAPUI5 applications we only require ABAP Development Tools and the UI5 development toolkit for HTML5. If you wish to use UI5 with HANA, you can select SAP HANA tools and the HANA cloud platform. Click on Next and accept the terms. This initiates installation—ignore all the warnings you get.

- Figure 2.5 shows how available software can be selected.

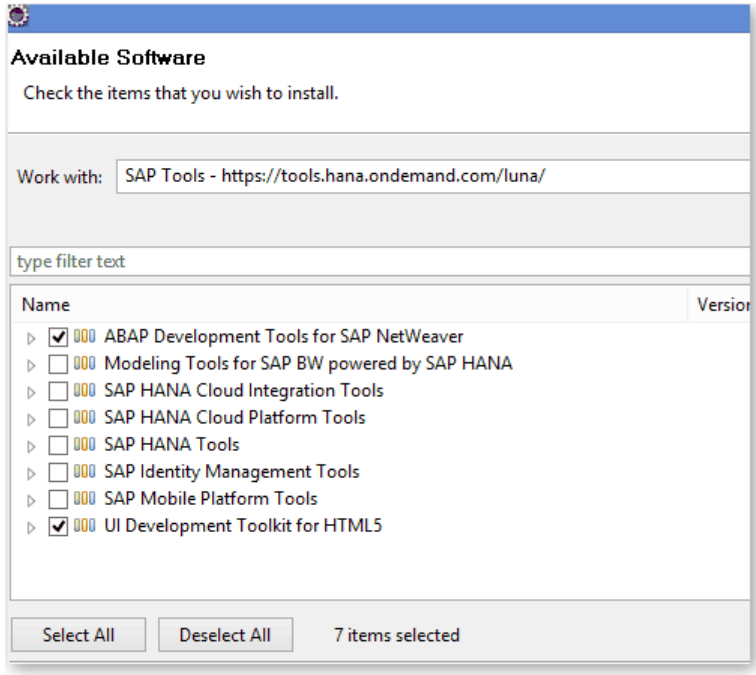


Figure 2.5: Select available software

- Now we will use the Eclipse wizard to create the application. On the Eclipse main window (menu bar) select FILE • NEW • OTHER. Scroll down and look for SAPUI5 APPLICATION DEVELOPMENT; underneath that, select **Application Project** and click on NEXT (See Figure 2.6). Provide any Project Name and select a Library you would like to use (it is recommended to start your program name with a Z if you wish to upload in the ABAP server). If you prefer to have a view, check CREATE AN INITIAL VIEW.

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