



Use ABAP Cloud for developer extensibility – RAP630

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Add partner
logo and alt text

Agenda – RAP630



INTRODUCTION

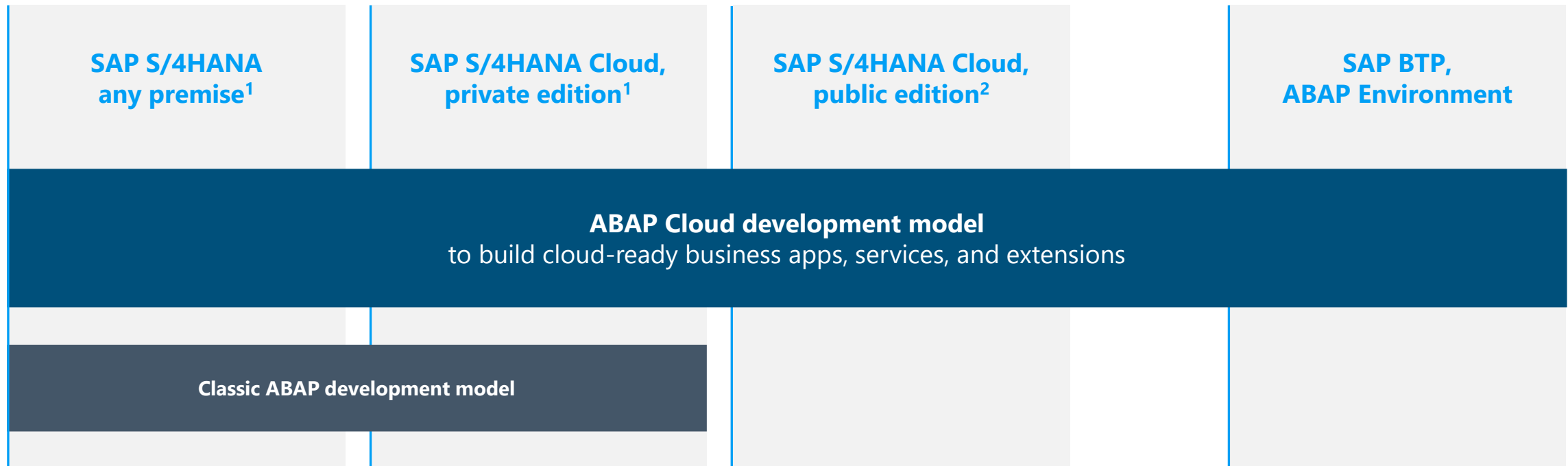
TODAY'S SCENARIO – [OVERVIEW](#)

TODAY'S SCENARIO – [EXERCISES](#)

WRAP UP

INTRODUCTION

ABAP Cloud – One development model for SAP S/4HANA and SAP BTP

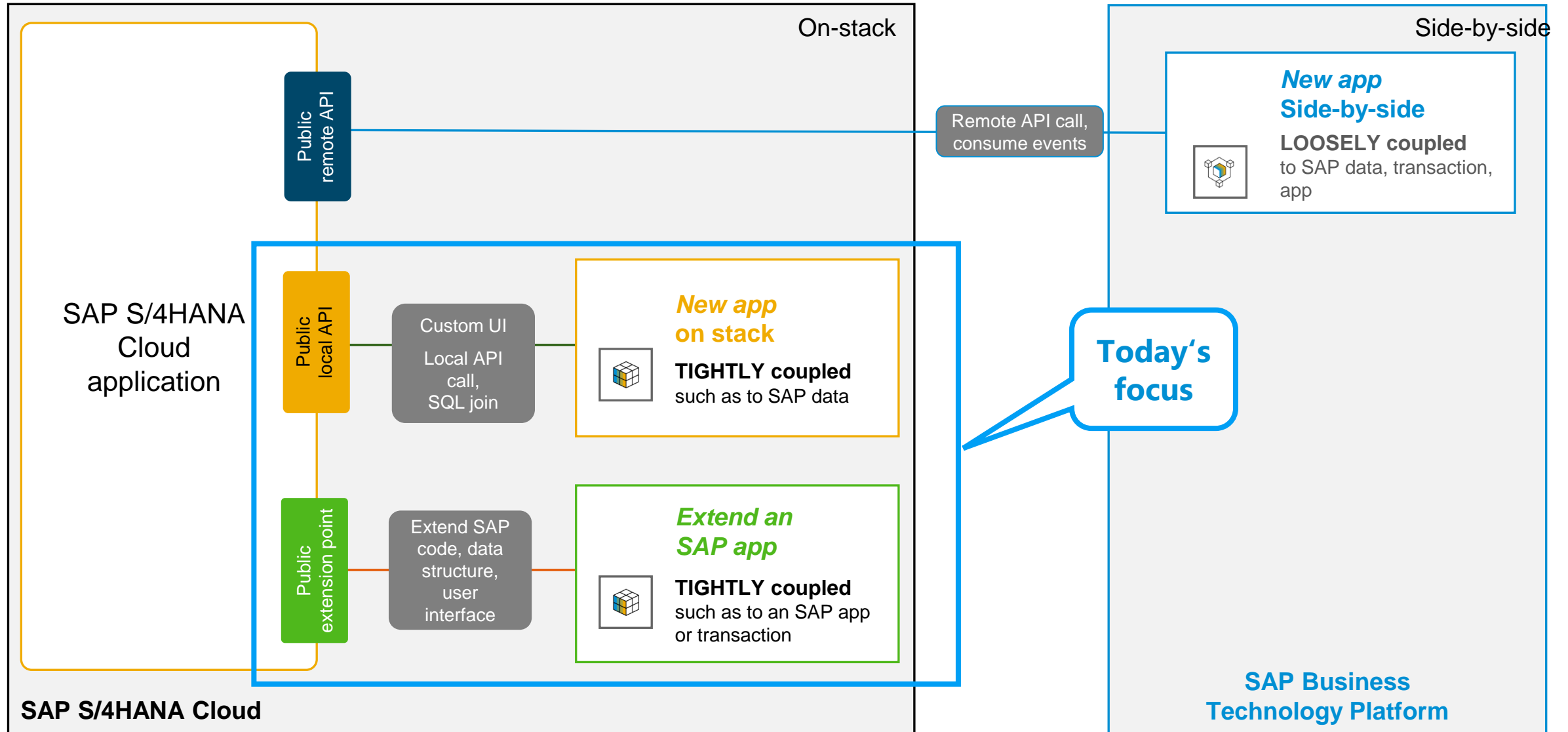


¹ SAP S/4HANA any premise or SAP S/4HANA Cloud, private edition release ≥ 2022

² SAP S/4HANA Cloud, public edition release ≥ 2208, 3-system landscape required

TODAY'S SCENARIO – EXERCISES

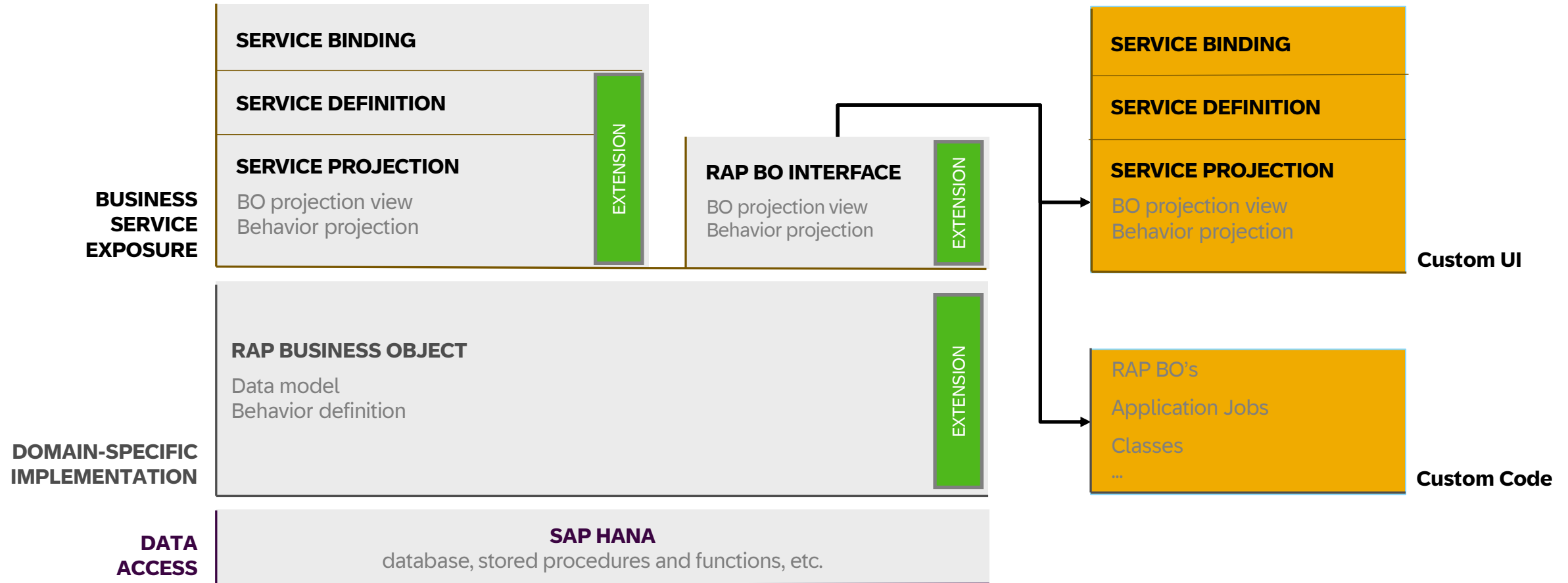
SAP S/4HANA Cloud extensibility patterns



Extensibility options in RAP

Extensions

New app on stack



Getting started

Exercise 0

Use ABAP Cloud for developer extensibility

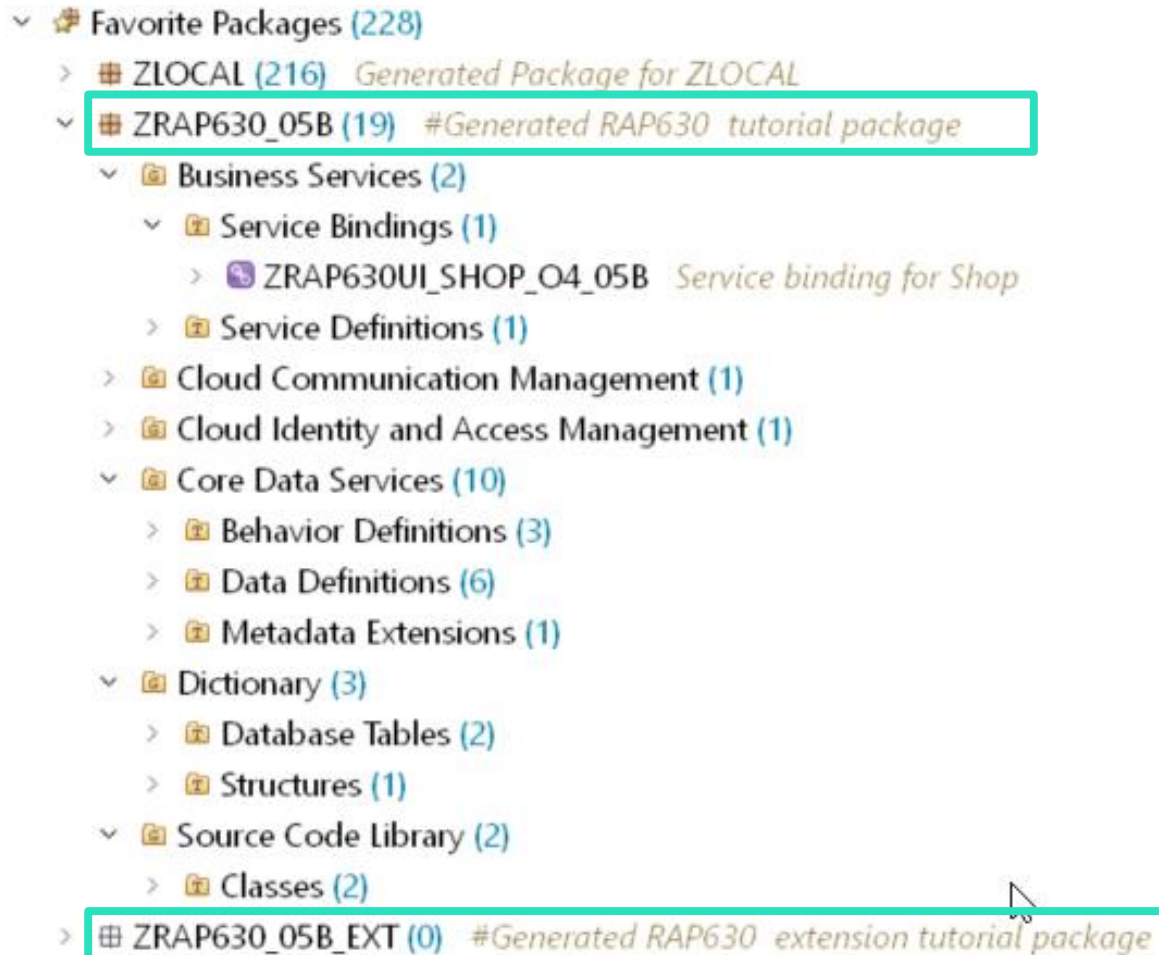
The screenshot shows the SAP IDE interface. In the 'Project Explorer' on the left, the object 'ZDMO_GEN_RAP630_SINGLE' is selected and highlighted with a red box. A right-click context menu is open over this object. The 'Run As' option is also highlighted with a red box, and its sub-menu is displayed, showing four options: '1 ABAP Application (Console)' (F9), '2 ABAP Test Cockpit' (Ctrl+Shift+F2), '3 ABAP Test Cockpit With...' (Ctrl+Shift+F2), and '4 ABAP Unit Test' (Ctrl+Shift+F10). A callout box points to the '1 ABAP Application (Console)' option with the text 'Run as console application F9'. Below the context menu, the 'ABAP Console' output window is visible, displaying the output of the 'RAP630 exercise generator'.

Run as console application F9

```
RAP630 exercise generator
-----
Use transport TECK900021
Info: Suffix "05B" will be used.
The following packages got created for you and will include everything you need:
- "ZRAP630_05B"      and
- "ZRAP630_05B_EXT"

In the "Project Explorer" right click on "Favorite Packages" and click on "Add Package...".
Select both (!) packages "ZRAP630_05B" and ZRAP630_05B_EXT and click OK.
The generation process has been started asynchronously in the backend
and it will take some minutes to complete.
```

Use ABAP Cloud for developer extensibility



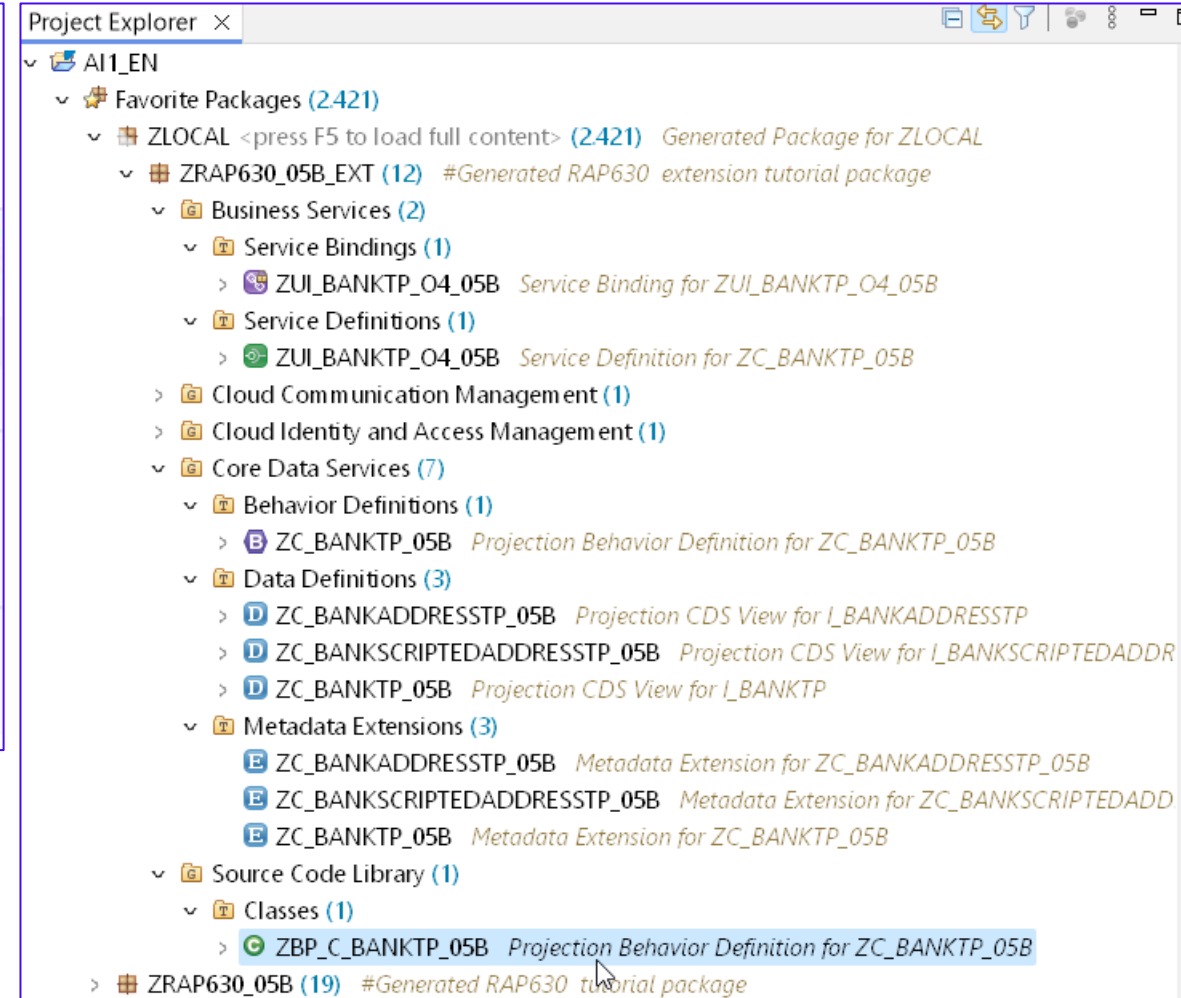
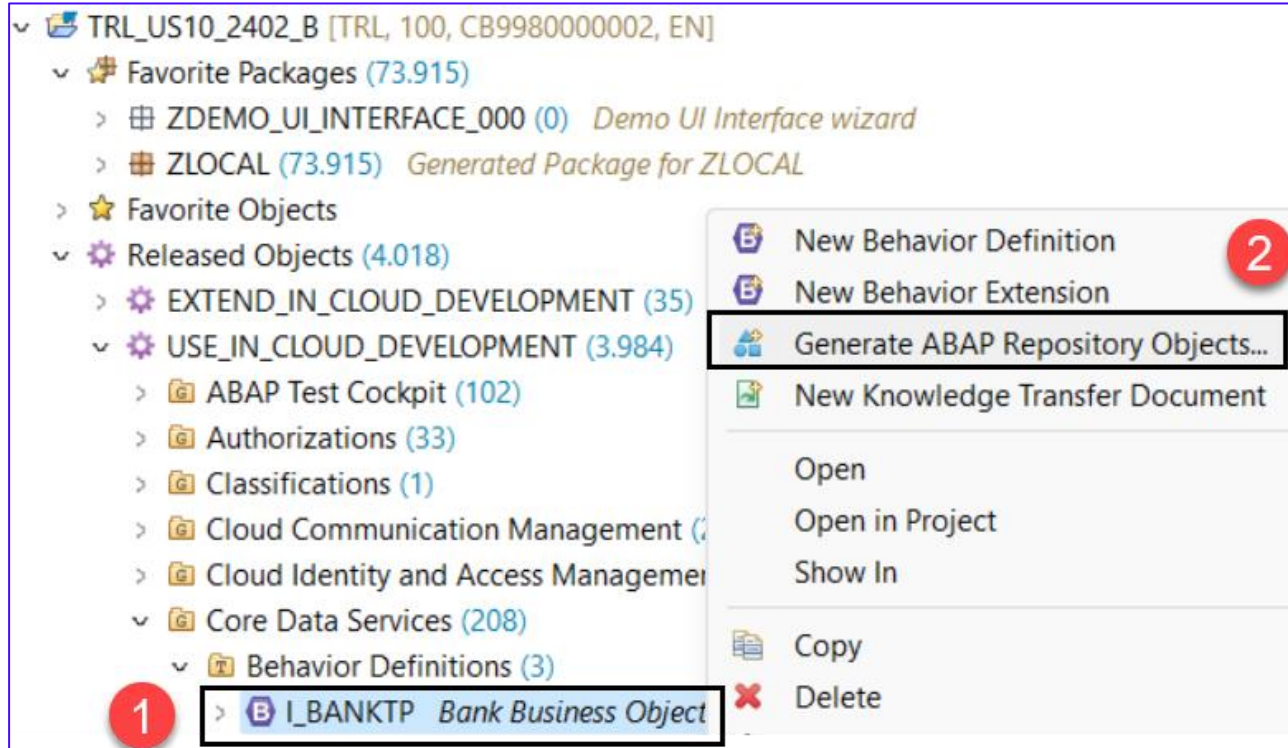
Two packages have been generated:

- ZRAP630_###
Base BO
- ZRAP630_###_EXT
Extension objects

New app on stack

Exercise 1

Exercise 1.1: Generate a UI on top of a released Business Object Interface



Exercise 1.2: Use a released RAP BO in a custom application (optional)

Run as →
ABAP Application
(Console)

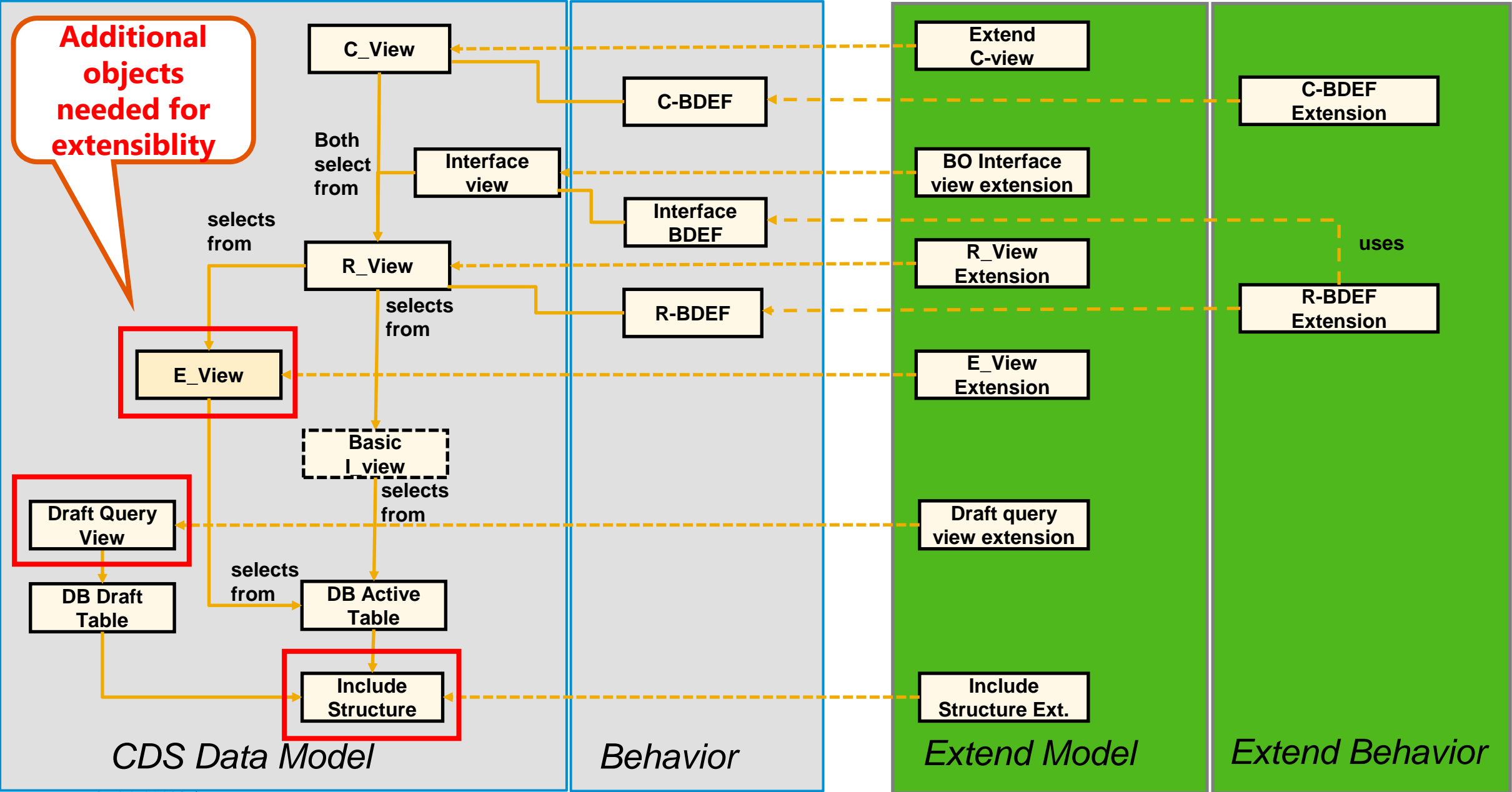
> AI1_DSAG_AI_Workshp [AI1, 100, CB9980000000, EN]
> AI2_EN [AI2, 100, CB9980000000, EN]
> DSAG_01 [S4H, 100, DEVELOPER050, EN]
> DSAG_02 [S4H, 100, DEVELOPER050, EN]
v DSAG_03 [S4H, 100, DEVELOPER050, EN]
 > Local Objects (\$TMP) (10)
 v Favorite Packages (88)
 v ZLOCAL (88) Cloud-Ready Local Custom Development
 > ZRAP110_AF1 (26) #Generated RAP110 tutorial
 > ZRAP630_05A (19) #Generated RAP630 tutorial
 > ZRAP630_05A_EXT (0) #Generated RAP630 extension
 v ZRAP630_AFI <press F5 to load full content> (1)
 v Source Code Library <press F5 to load full content>
 v Classes <press F5 to load full content>
 > ZCL_TEST_ABAP_CLOUD_AFI solution R
 > ZRAP630_SOL (20) #Generated RAP630 tutorial
 > ZRAP630_SOL_EXT (10) #Generated RAP630 extension
 > ZRAP640_SOL (12) ABAP Package
 > ZRAP630_05A (19) #Generated RAP630 tutorial package
 > ZRAP630_05A_EXT (0) #Generated RAP630 extension
 > ZRAP630_AFI (1) Test Andre
 > Favorite Objects (2)
 > System Library
 > PM1_EN [PM1, 100, CB9980000000, EN]
 > PMD_ABAP_PM_Dev [PMD, 100, CB9980000000, EN]
 > PMD_EN_alt [PMD, 100, CB0000000019, EN]
 > PMT_EN [PMT, 100, CB9980000000, EN]
 > S4H_100_developer021_en [S4H, 100, DEVELOPER021, EN]
 > S4H_Freiburg [S4H, 100, S4H_EXT, EN]
 > S4H_Halle [S4H, 100, FISCHERAND, EN]
 > S4H_Halle_2 [S4H, 100, DEVELOPER047, EN]
 > S4H_Sandbox [S4H, 100, FISCHERAND, EN]
 > Y05_EN [Y05, 100, CB99800000312, EN]

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```

Extend an existing RAP business object

































Exercise 2

Extensible RAP business object extension in detail





















Solution packages

ZRAP630_SOL and ZRAP630_SOL_EXT

- ▼  ZRAP630_SOL (19) #Generated RAP630 tutorial package
 - ▼  Business Services (2)
 - ▼  Service Bindings (1)
 - >  ZRAP630UI_SHOP_O4_SOL Service binding for Shop
 - ▼  Service Definitions (1)
 - >  ZRAP630UI_SHOP_SOL Service definition for Shop
 - >  Cloud Communication Management (1)
 - >  Cloud Identity and Access Management (1)
 - ▼  Core Data Services (10)
 - ▼  Behavior Definitions (3)
 - >  ZRAP630C_SHOPTP_SOL Behavior for ZRAP630C_ShopTP_SOL
 - >  ZRAP630I_SHOPTP_SOL Behavior for ZRAP630I_ShopTP_SOL
 - >  ZRAP630R_SHOPTP_SOL Behavior for ZRAP630R_ShopTP_SOL
 - ▼  Data Definitions (6)
 - >  ZRAP630C_SHOPTP_SOL Projection View for Shop
 - >  ZRAP630E_SHOP_SOL Extension include view for Shop
 - >  ZRAP630I_SHOPTP_SOL Interface Projection View for Shop
 - >  ZRAP630I_VH_PRODUCT_SOL Value help for products
 - >  ZRAP630R_SHOPTP_SOL CDS View for Shop
 - >  ZRAP630R_SHOP_D_SOL Draft query view for Shop
 - ▼  Metadata Extensions (1)
 - >  ZRAP630C_SHOPTP_SOL MDE for Shop
 - ▼  Dictionary (3)
 - ▼  Database Tables (2)
 - >  ZRAP630SH00D_SOL Draft table for entity ZRAP630R_ShopTP_SOL
 - >  ZRAP630_ASHOPSOL Table for entity ZRAP630R_ShopTP_SOL
 - ▼  Structures (1)
 - >  ZRAP630SSHOP_SOL Extension include for Shop
 - ▼  Source Code Library (2)
 - ▼  Classes (2)
 - >  ZRAP630BP_R_SHOPTP_SOL Behavior implementation
 - >  ZRAP630_CL_VH_PRODUCT_SOL Value help for products

Two packages contain the solution


- ZRAP630_SOL
Base BO
- ZRAP630_SOL_EXT
Extension objects






- ▼  ZRAP630_SOL_EXT (10) Solution for RAP630 / DT 182v
 - ▼  Core Data Services (8)
 - ▼  Behavior Definitions (2)
 - >  ZRAP630C_EXT_SHOPTP_EXT Behavior extension for projection bdef
 - >  ZRAP630R_EXT_SHOPTP_SOL Extension for ZRAP630R_ShopTP_SOL
 - ▼  Data Definitions (6)
 - >  ZRAP630C_EXT_SHOP_SOL Extension for C-CDS view
 - >  ZRAP630E_EXT_SHOP_SOL Extension for Extension Include View
 - >  ZRAP630I_EXT_SHOP_SOL Extension for I-CDS view
 - >  ZRAP630R_EXT_SHOP_D_SOL Extension for R-CDS Draft view
 - >  ZRAP630R_EXT_SHOP_SOL Extension for R-CDS view
 - >  ZRAP630_A_FEEDBACK_SOL Pass feedback as a parameter
 - ▼  Dictionary (1)
 - ▼  Structures (1)
 - >  ZRAP630EXTSSHOP_SOL Extend Extension Include Structure
 - ▼  Source Code Library (1)
 - ▼  Classes (1)
 - >  ZBP_ZRAP630R_SHOP_X_FBK_SOL Behavior Implementation for ZRAP630R_EXT_

Exercise 3



Extended Onlineshop App – Behavior extension




Add e.g. side effects


Standard 

Search  Editing Status: All  OrderID:  OrderedItem:  CurrencyCode: 

Go Adapt Filters (1)

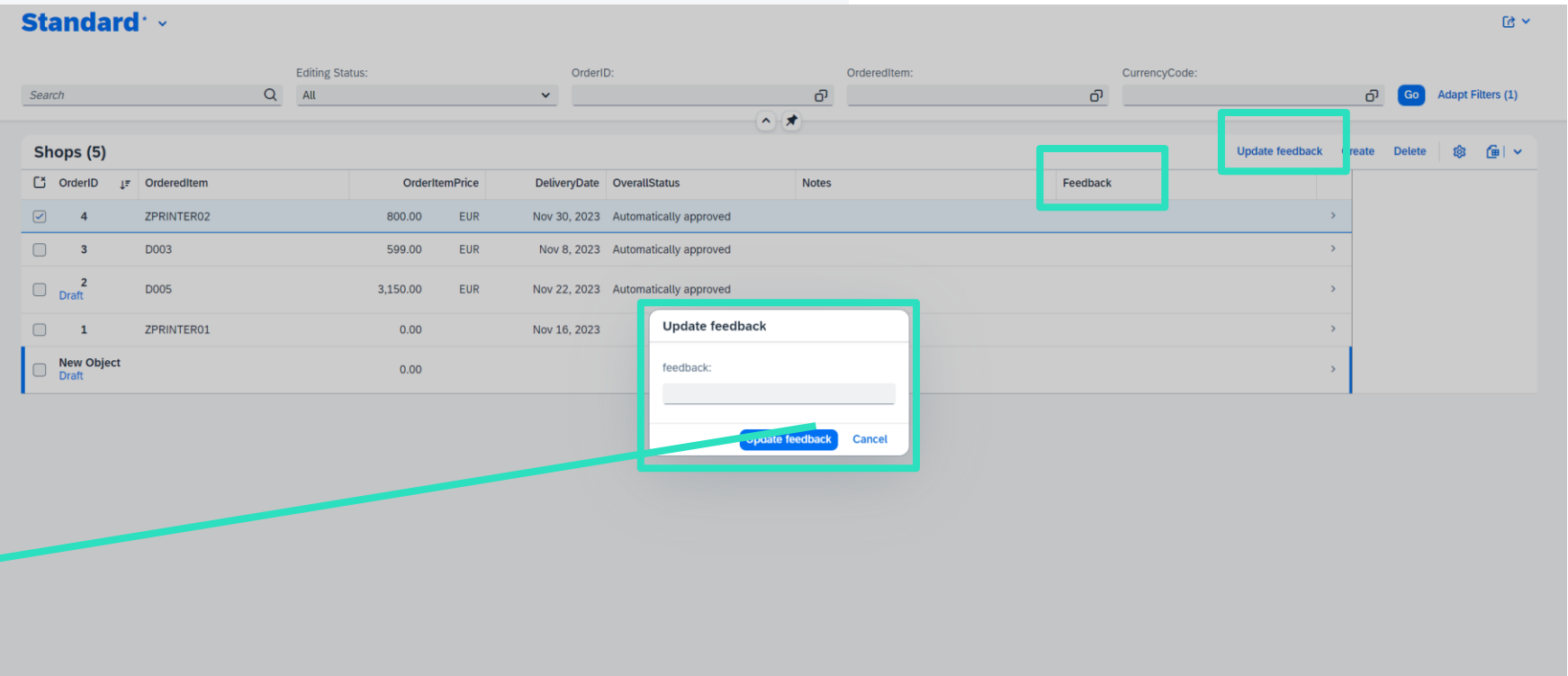
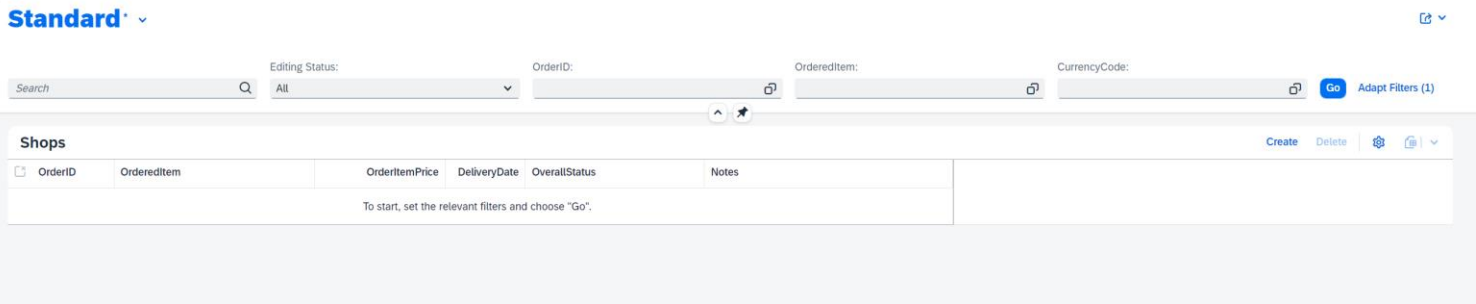
 

Shops Update feedback Create Delete   

 OrderID	OrderedItem	OrderItemPrice	DeliveryDate	OverallStatus	
To start, set the relevant filters and choose "Go".					

Exercise 4


Extended Onlineshop App – Data model extension



New field:
Feedback
New Action:
Update Feedback

The RAP630 hands-on exercises

<https://github.com/SAP-samples/abap-platform-rap630>

 README.md

DT182v - Use ABAP Cloud for developer extensibility

Description

This repository contains the material for the SAP TechEd 2023 session called *DT182v - Use ABAP Cloud for developer extensibility*.

Developer extensibility as defined by SAP basically encompasses two activities

1. Develop custom code to implement your own business logic. Here you can make use of existing API's from SAP that have been released for that purpose.
2. Extend an existing RAP Business Object delivered by SAP so that additional business functionality is added. Such an extensible RAP business object will usually reside in another software components or it is an existing SAP delivered RAP BO that is extensible. Both can be optimized and their functionality can be adapted to your specific business requirements.

Overview

This session introduces attendees to the ABAP Cloud programming model and how this can be leveraged to build extensions (own code) in SAP S/4HANA BTP, ABAP Environment or how you can extend an existing RAP Business Object using the ABAP Cloud programming model.

01

Access to the exercises:

<https://github.com/SAP-samples/abap-platform-rap630>

02

Set up your development environment.

1. [Install and set up your ABAP Development Tools for Eclipse](#)
2. [Create an SAP BTP ABAP Environment Trial User](#)
(not needed for SAP events)
3. [Create an ABAP Cloud Project](#)

03

Move at your own speed!

04

Feel free to ask questions via GitHub issues!

► Provide screenshots to facilitate the support

The RAP630 hands-on exercises – Working on GitHub (1)

Follow the step-by-step instructions provided on [GitHub](#).

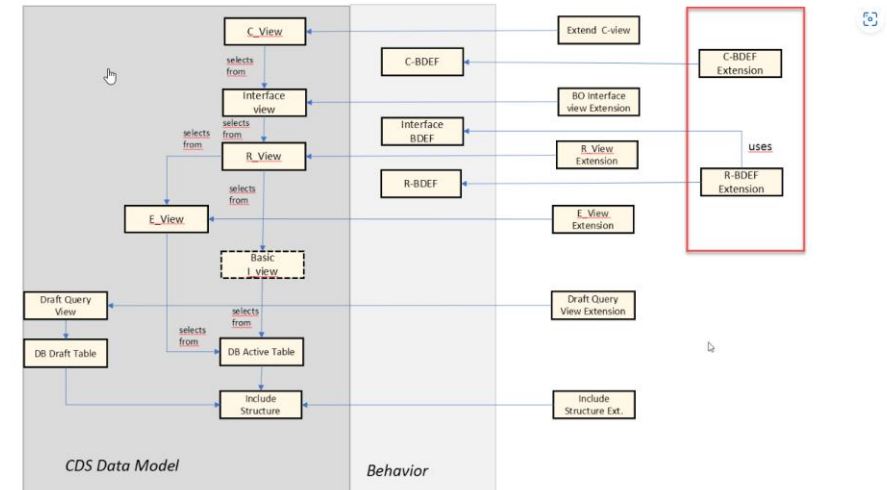
- [Getting Started](#)
- [Exercise 1 - Consume a released RAP BO](#)
- [Exercise 2 - Extend the behavior \(determinations, valid](#)
- [Exercise 3 - Extend the data model \(add additional fiel](#)
- [Exercise 4 - Extend the behavior \(add an action\)](#)

teched2023-DT182v / exercises / ex2 /

Exercise 2 - Behavior extension

In this exercise, we will extend the behavior of an extensible RAP BO. That means we will add a validation, a determination and side-effects to the behavior of the RAP BO by using an extension.

Since extending a RAP BO in parallel by several developers can cause severe problems every participant will work with his or her own base RAP BO. For your convenience an extensible RAP BO has thus been generated using the class `zdemo_gen_rap630_single` that you have run in the [Getting started](#) section.



Exercise 2.1 Extend the behavior definition with a validation

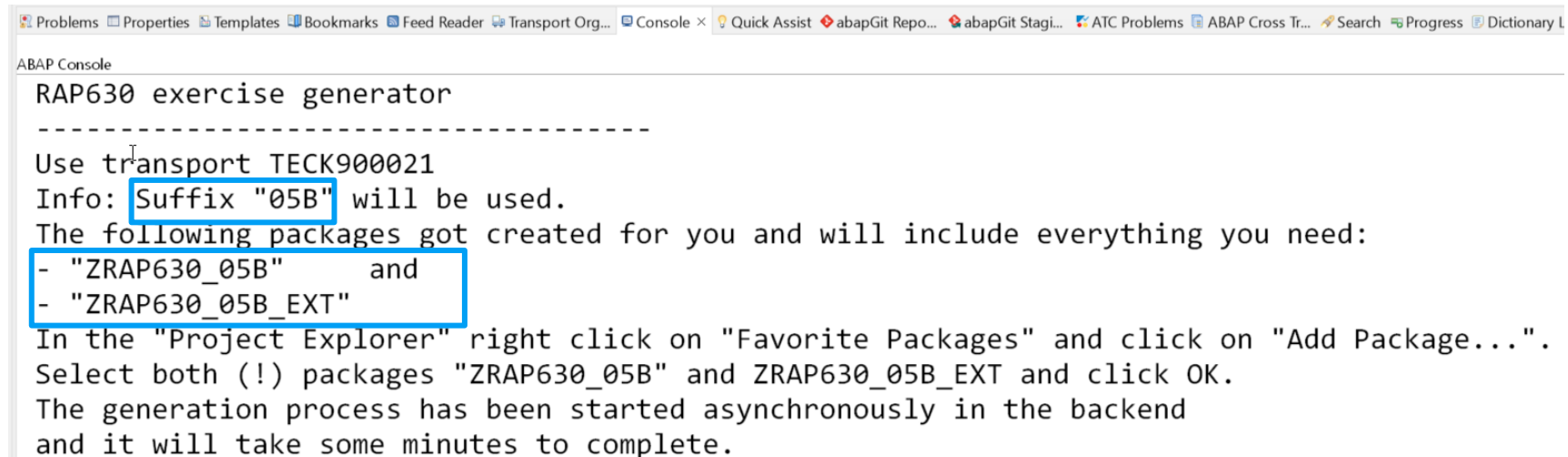
After completing these steps you will have created a validation to check the delivery date.

► Click to expand!

The RAP630 hands-on exercises – Working on GitHub (2)

####

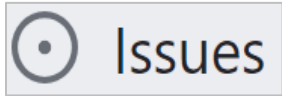
Always replace all occurrences of #### with your assigned suffix in code snippets



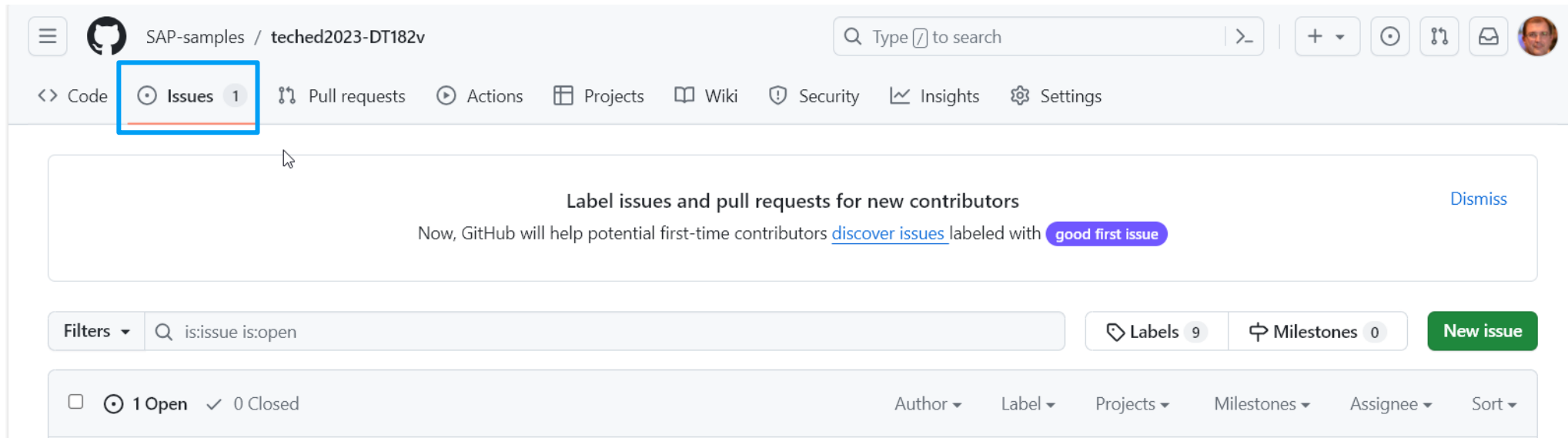
The screenshot shows the ABAP Console interface with the following text:

```
ABAP Console
RAP630 exercise generator
-----
Use transport TECK900021
Info: Suffix "05B" will be used.
The following packages got created for you and will include everything you need:
- "ZRAP630_05B" and
- "ZRAP630_05B_EXT"
In the "Project Explorer" right click on "Favorite Packages" and click on "Add Package...".
Select both (!) packages "ZRAP630_05B" and ZRAP630_05B_EXT and click OK.
The generation process has been started asynchronously in the backend
and it will take some minutes to complete.
```

The **RAP630** hands-on exercises – Working on GitHub (3)



Open GitHub Issues to get help from the SAP experts.



SUMMARY

Key takeaways

ABAP Cloud is the development model provided to build cloud-ready enterprise services, apps, and extensions on SAP BTP ABAP environment and all editions¹ of SAP S/4HANA, in the cloud and on-premises.

The **ABAP RESTful application programming model** (RAP) is at the **heart of ABAP Cloud** for efficiently building **transactional** OData-based services and SAP Fiori apps with built-in cloud qualities.

RAP best support **SAP HANA** and **SAP Fiori elements**.

RAP is available on **SAP BTP ABAP Environment**, **SAP S/4HANA Cloud**, and **SAP S/4HANA** as of edition 1909.

The **RAP feature set** is enhanced **quarterly** in SAP BTP ABAP environment, **twice a year** in SAP S/4HANA Cloud, and **every two years** in SAP S/4HANA and SAP S/4HANA Cloud, private edition.

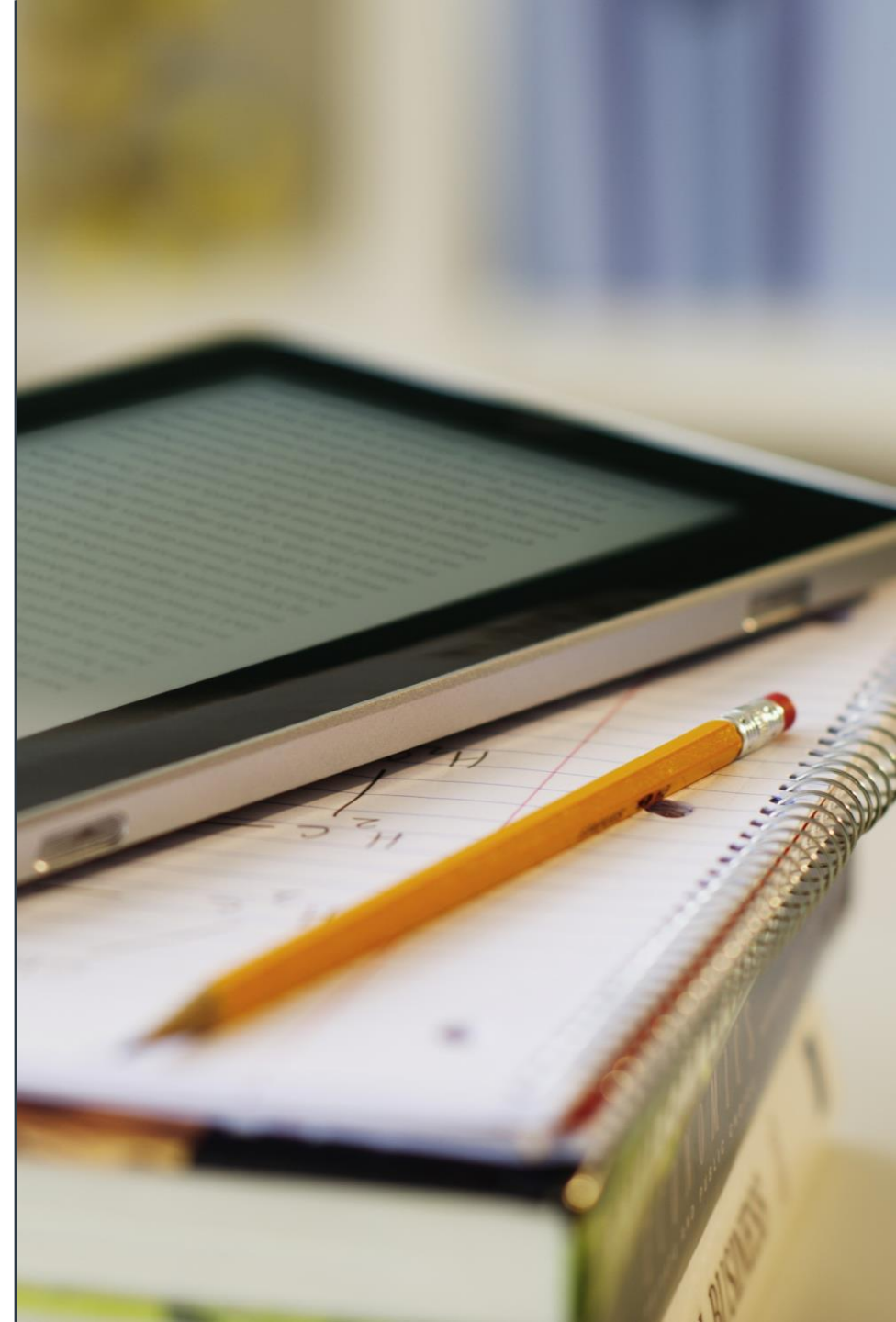


What's New: [SAP BTP ABAP environment](#) | [SAP S/4HANA](#) | [SAP S/4HANA Cloud](#)



What's Next: [ABAP Platform Roadmap Information](#) for all SAP products

¹ SAP S/4HANA any premise or SAP S/4HANA Cloud, private edition release ≥ 2022
SAP S/4HANA Cloud, public edition release ≥ 2208, 3-system landscape required



Thank you

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Product Manager for ABAP Platform

