



Week 2: Developing a Read-Only List Report App

Unit 1: The Business Scenario

The Business Scenario

Topics

Week 2

01

The Business Scenario

02

Creating the Database Tables

03

Creating the Core Data Services (CDS) Data Model

04

Defining the CDS Data Model Projection

05

Enriching the Projected Data Model with UI Metadata

06

Creating and Previewing the OData UI Service

07

Implementing Basic Authorizations

About the ABAP Flight Reference Scenario

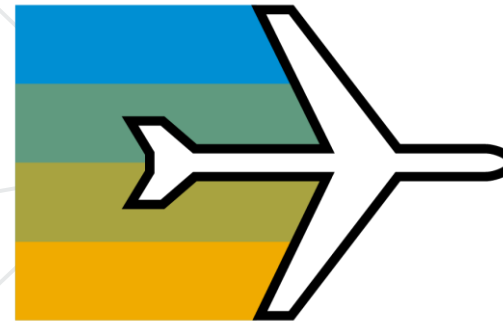
Simple to use and understand data model for demo purposes

Used to

Demonstrate how to use different RAP capabilities concretely

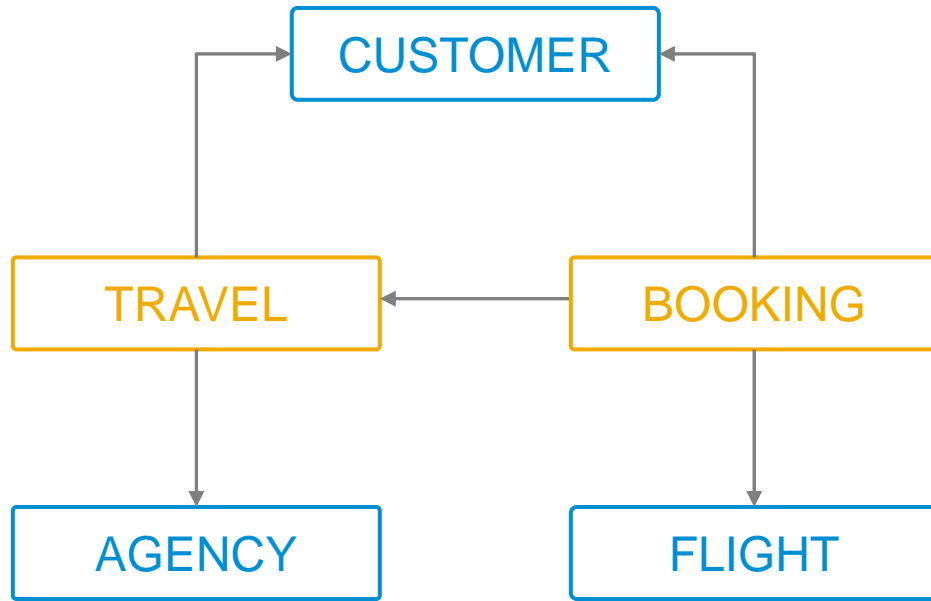
Simulate real-life standard scenarios and processes of a travel agency

Cloud and on-premise flavors available on GitHub for import into ABAP system



SFLIGHT RELOADED!

Simplified flight data model for this openSAP course



- Main business entities in current scenario
- Secondary business entities in current scenario

Travel	A Travel entity defines general travel data, such as the agency ID or customer ID, the status of the travel booking, and the price of travel. The travel data is stored in the database table ZRAP_ATRAV_#### .
Booking	A Booking entity comprises general flight- and booking data as well as the related customer ID and travel ID. The booking data is stored in the database table ZRAP_ABOOK_#### . The flight data model defines a 1:n cardinality between a Travel and the Booking entity.
Agency	An Agency entity defines travel agency data, such as the address and contact data. The corresponding data is stored in the database table /DMO/AGENCY . The flight data model defines a 1:n cardinality between Agency and Travel.
Flight	A Flight entity define general flight data for each connection. The flight data is stored in the database table /DMO/FLIGHT . The flight data model defines a 1:n cardinality between the Connection and the Flight entity.
Customer	A Customer entity provides a detailed description of a flight customer (passenger) such as the name, the address, and contact data. The corresponding data is stored in the database table /DMO/CUSTOMER . The flight data model defines a 1:n cardinality between Customer and Travel

The Business Scenario

Resulting SAP Fiori elements app

Read-Only List Report Travel App

Full-text
search

Standard ^{*} ▾

Travel ID: Agency ID: Customer ID: Adapt Filters

Travels (4,136) Standard ▾

Travel ID	Agency ID	Customer ID	Starting Date	End Date	Total Price	Travel Status	
4136	Happy Holiday (70025)	Pan (629)	Oct 15, 2020	Oct 15, 2020	7,424.00 USD	N	>
4135	Kangeroos (70014)	Gahl (438)	Oct 15, 2020	Oct 15, 2020			>
4134	Aussie Travel (70028)	Benz (115)	Oct 15, 2020	Oct 15, 2020	7,375.00 USD	B	>
4133	Intertravel (70043)	D'Oultrement (317)	Oct 15, 2020	Oct 15, 2020	7,391.00 USD		>
4132	Hot Socks Travel (70007)	Kramer (394)	Oct 15, 2020	Oct 15, 2020	7,346.00 USD		>
4131	Up 'n' Away (70029)	Goelke (185)	Oct 15, 2020	Oct 15, 2020	3,633.00 USD		>
4130	Bella Italia (70006)	Henry (272)	Oct 15, 2020	Oct 15, 2020	11,008.00 USD		>
4129	Rocky Horror Tours (70048)	Sessler (481)	Oct 15, 2020	Oct 15, 2020	10,797.00 USD		>

Filter bar

Navigation to
detail page

Object Page

Facets

Travel

4136 Vacation to USA

Total Price: 7,424.00 USD Travel Status: N

Travel Booking

Administrative Data

Travel ID: 4136

Agency ID: Happy Holiday (70025)

Customer ID: Pan (629)

Description: Vacation to USA

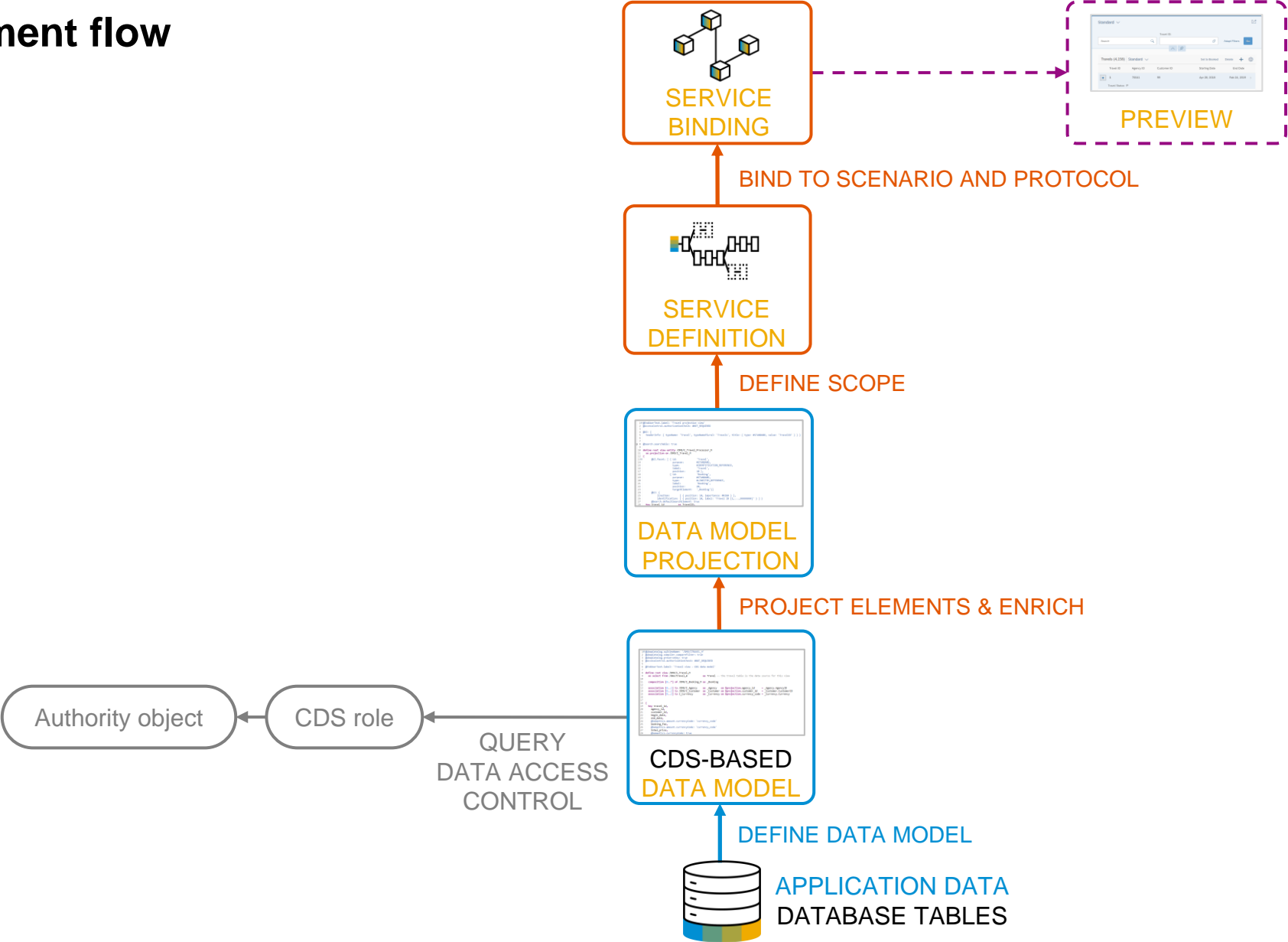
Status: N

Dates

Starting Date: Oct 15, 2020

End Date: Oct 15, 2020

The Business Scenario
Development flow



The Business Scenario

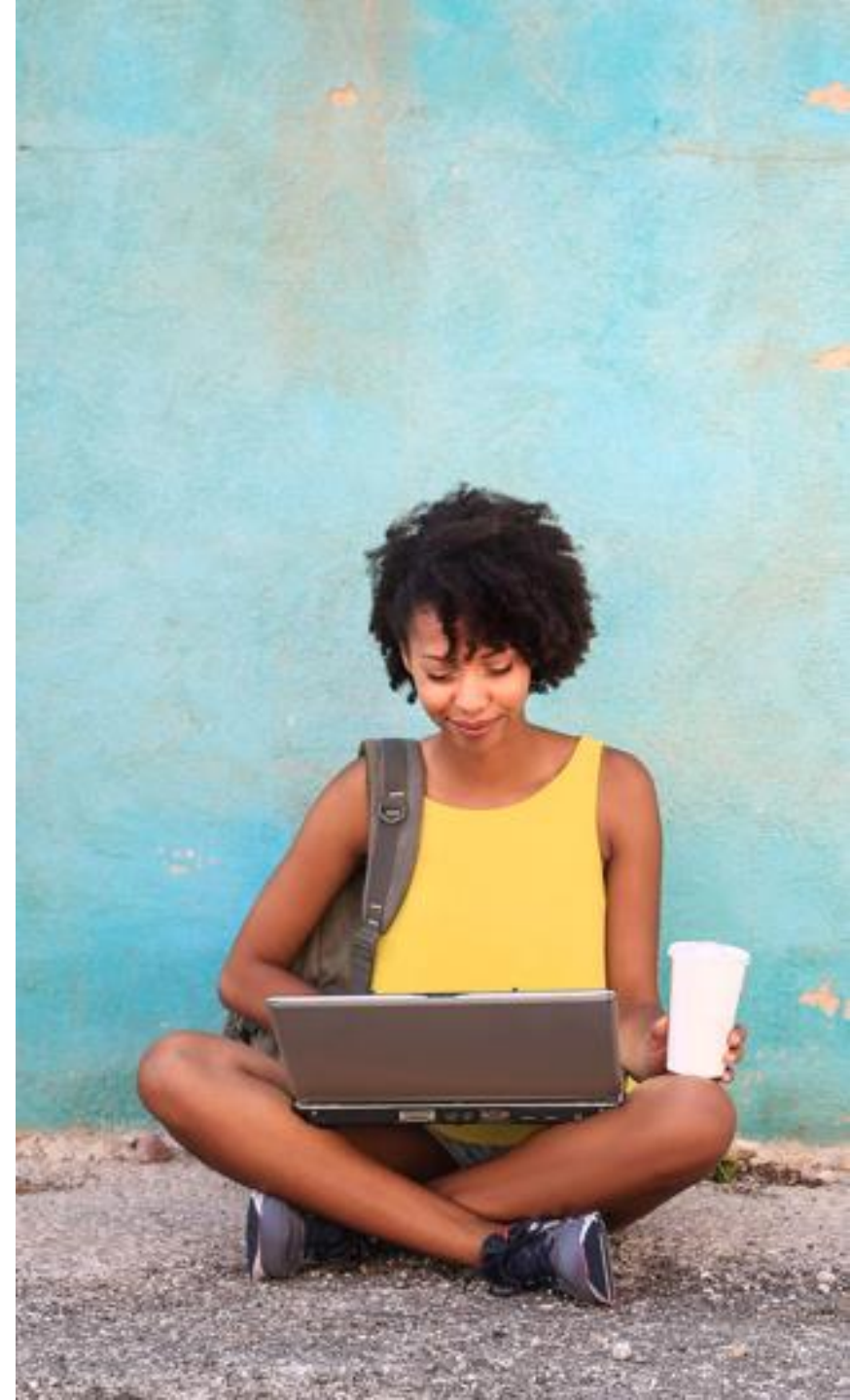
Wrap-up

IN THIS UNIT, YOU LEARNED

- About the ABAP Flight Reference Scenario and the business scenario we implement this week
- Which entities from the flight reference scenario are used
- How the development flow will be in the upcoming units

NEXT UNIT

- Week 2 – Unit 2
Creating the Database Tables



The Business Scenario

Further reading

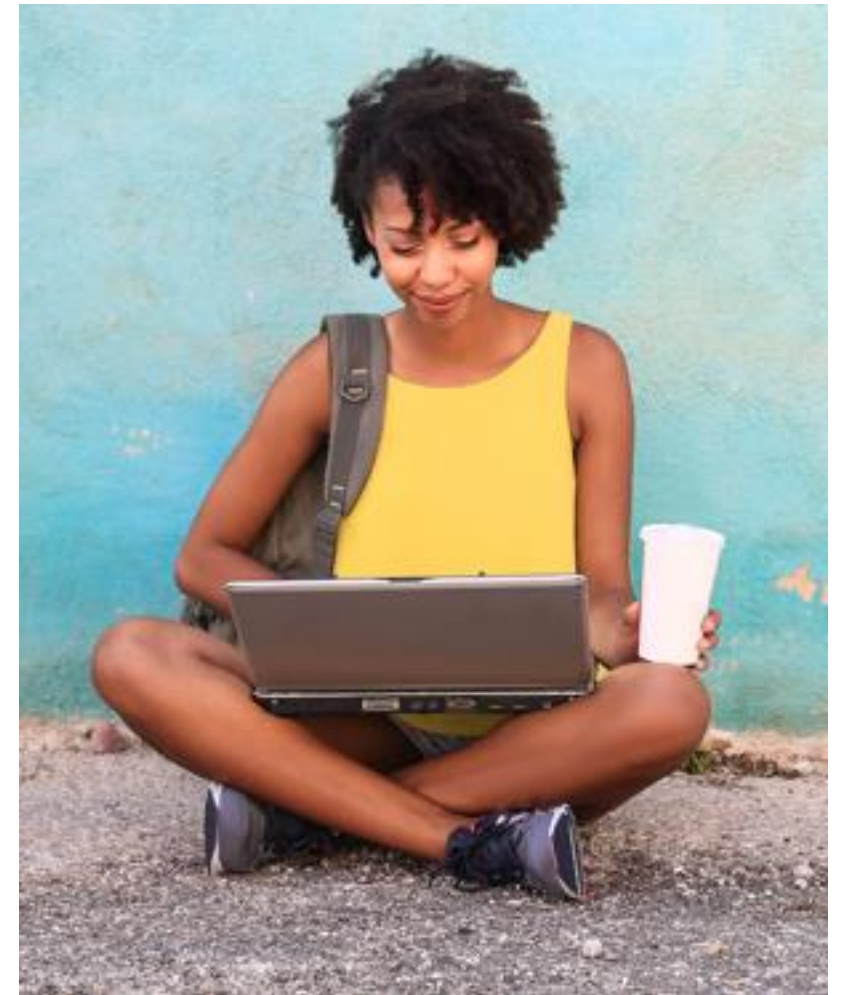


Additional Material

ABAP RESTful APPLICATION PROGRAMMING MODEL INFORMATION PAGE

For more information, links to documentation, tutorials, and more, please visit the RAP at openSAP information page by following the link below

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Week 2: Developing a Read-Only List Report App

Unit 2: Creating the Database Tables

Creating the Database Tables

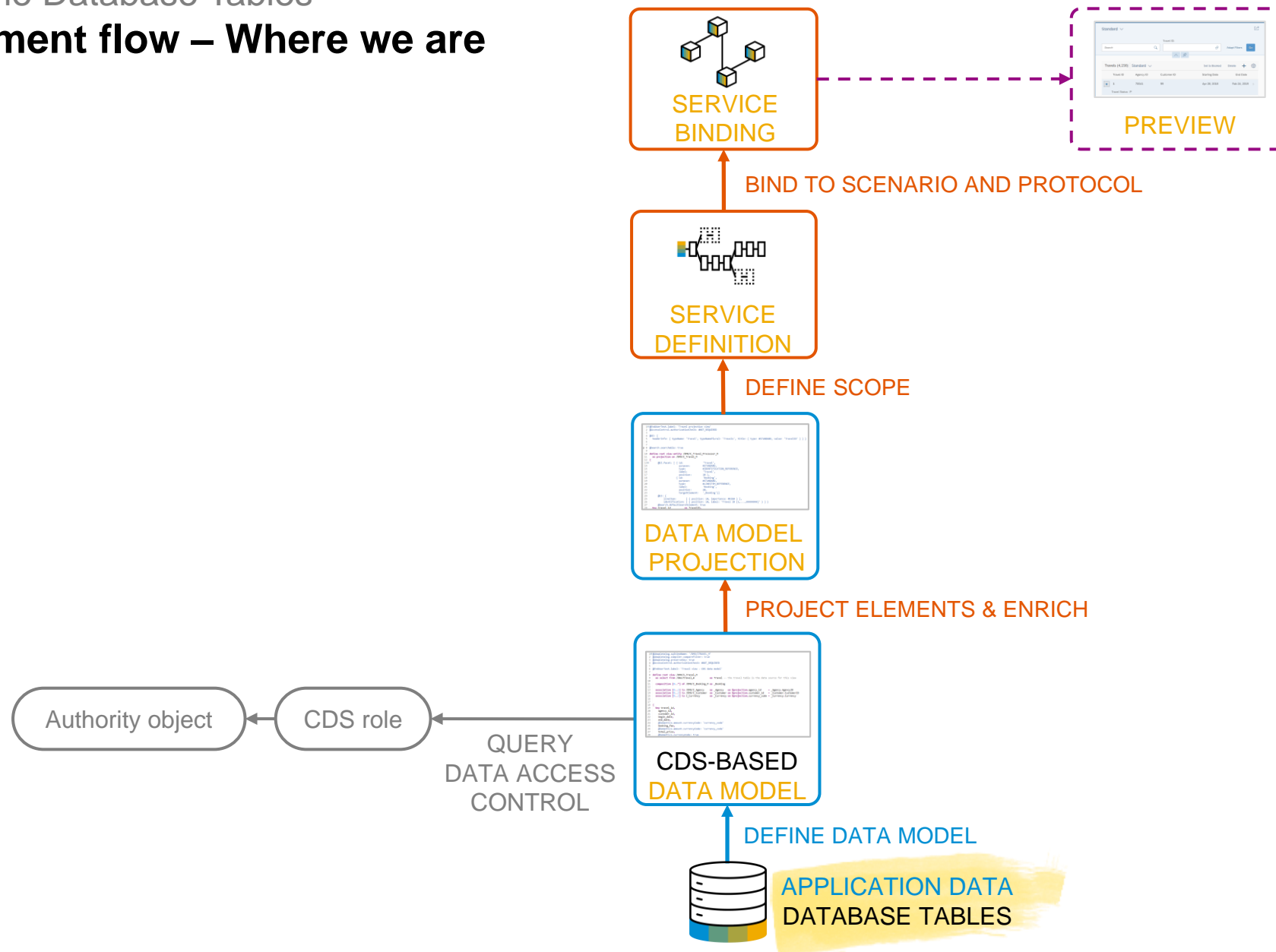
Topics

Week 2

- 01 The Business Scenario
- 02 Creating the Database Tables
- 03 Creating the Core Data Services (CDS) Data Model
- 04 Defining the CDS Data Model Projection
- 05 Enriching the Projected Data Model with UI Metadata
- 06 Creating and Previewing the OData UI Service
- 07 Implementing Basic Authorizations

Creating the Database Tables

Development flow – Where we are



Creating the Database Tables

What we will achieve in this unit

Table properties

Key fields

Reference to currency code

Field list

Data preview

```
1 @EndUserText.label : 'Travel Table'
2 @AbapCatalog.enhancementCategory : #NOT_EXTENSIBLE
3 @AbapCatalog.tableCategory : #TRANSPARENT
4 @AbapCatalog.deliveryClass : #C
5 @AbapCatalog.dataMaintenance : #RESTRICTED
6 define table zrap_atrav_1234 {
7   key client      : mandt not null;
8   key travel_uuid : sysuuid_x16 not null;
9   travel_id       : /dmo/travel_id;
10  agency_id       : /dmo/agency_id;
11  customer_id      : /dmo/customer_id;
12  begin_date       : /dmo/begin_date;
13  end_date         : /dmo/end_date;
14  @Semantics.amount.currencyCode : 'zrap_atrav_1234.currency_code'
15  booking_fee      : /dmo/booking_fee;
16  @Semantics.amount.currencyCode : 'zrap_atrav_1234.currency_code'
17  total_price      : /dmo/total_price;
18  currency_code    : /dmo/currency_code;
19  description      : /dmo/description;
20  overall_status   : /dmo/overall_status;
21  created_by       : syuname;
22  created_at       : timestamp;
23  last_changed_by  : syuname;
24  last_changed_at  : timestamp;
25  local_last_changed_at : timestamp;
26 }
```

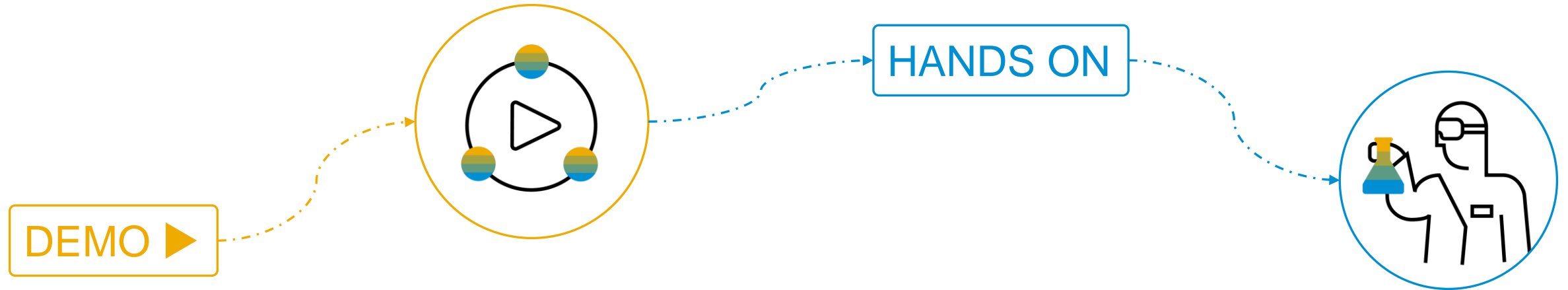
```
1 @EndUserText.label : 'Booking Table'
2 @AbapCatalog.enhancementCategory : #NOT_EXTENSIBLE
3 @AbapCatalog.tableCategory : #TRANSPARENT
4 @AbapCatalog.deliveryClass : #C
5 @AbapCatalog.dataMaintenance : #RESTRICTED
6 define table zrap_abook_1234 {
7   key client      : mandt not null;
8   key booking_uuid : sysuuid_x16 not null;
9   travel_uuid      : sysuuid_x16 not null;
10  booking_id       : /dmo/booking_id;
11  booking_date     : /dmo/booking_date;
12  customer_id      : /dmo/customer_id;
13  carrier_id       : /dmo/carrier_id;
14  connection_id    : /dmo/connection_id;
15  flight_date      : /dmo/flight_date;
16  @Semantics.amount.currencyCode : 'zrap_abook_1234.currency_code'
17  flight_price     : /dmo/flight_price;
18  currency_code    : /dmo/currency_code;
19  created_by       : syuname;
20  last_changed_by  : syuname;
21  local_last_changed_at : timestamp;
22 }
23 }
```

CLIENT	TRAVEL_UUID	TRAVEL_ID	AGENCY_ID	CUSTOMER_ID	BEGIN_DATE	END_DATE	BOOKING_FEE	TOT.
100	CA4C0AF06480003...	00000001	070041	000594	2020-04-25	2021-02-21	40.00	
100	CB4C0AF06480003...	00000002	070007	000608	2020-04-25	2020-04-25	20.00	
100	CC4C0AF06480003...	00000003	070046	000093	2020-04-25	2021-02-21	80.00	
100	CD4C0AF06480003...	00000004	070042	000665	2020-04-25	2021-02-21	40.00	
100	CE4C0AF06480003...	00000005	070007	000225	2020-04-25	2020-04-25	20.00	
100	CF4C0AF06480003...	00000006	070049	000072	2020-04-25	2021-02-21	120.00	
100	D04C0AF06480003...	00000007	070046	000138	2020-04-25	2021-02-21	120.00	
100	D14C0AF06480003...	00000008	070012	000705	2020-04-25	2020-04-27	60.00	
100	D24C0AF06480003...	00000009	070032	000115	2020-04-25	2021-02-21	120.00	
100	D34C0AF06480003...	00000010	070016	000697	2020-04-25	2020-04-27	20.00	
100	D44C0AF06480003...	00000011	070005	000593	2020-04-25	2020-04-25	20.00	

CLIENT	BOOKING_UUID	TRAVEL_UUID	BOOKING_ID	BOOKING_DATE	CUSTOMER_ID	CARRIER_ID	CONNECT
100	924D0AF064800031...	CA4C0AF0648000...	0001	2020-04-08	000594	UA	1537
100	934D0AF064800031...	CA4C0AF0648000...	0002	2020-04-25	000594	AA	0322
100	944D0AF064800031...	CA4C0AF0648000...	0003	2021-01-31	000594	UA	1537
100	954D0AF064800031...	CA4C0AF0648000...	0004	2021-02-04	000594	AA	0322
100	964D0AF064800031...	CB4C0AF06480003...	0001	2020-04-23	000099	UA	1537
100	974D0AF064800031...	CB4C0AF06480003...	0002	2020-04-23	000660	UA	1537
100	984D0AF064800031...	CC4C0AF06480003...	0001	2020-04-05	000093	UA	1537
100	994D0AF064800031...	CC4C0AF06480003...	0002	2020-04-05	000706	UA	1537
100	9A4D0AF064800031...	CC4C0AF06480003...	0003	2020-04-08	000093	AA	0322
100	9B4D0AF064800031...	CC4C0AF06480003...	0004	2020-04-08	000706	AA	0322
100	9C4D0AF064800031...	CC4C0AF06480003...	0005	2021-02-15	000093	UA	1537

Creating the Database Tables

Demo



CREATING THE DATABASE TABLES

1. Creating the database tables for storing travel and booking data

Creating the Database Tables

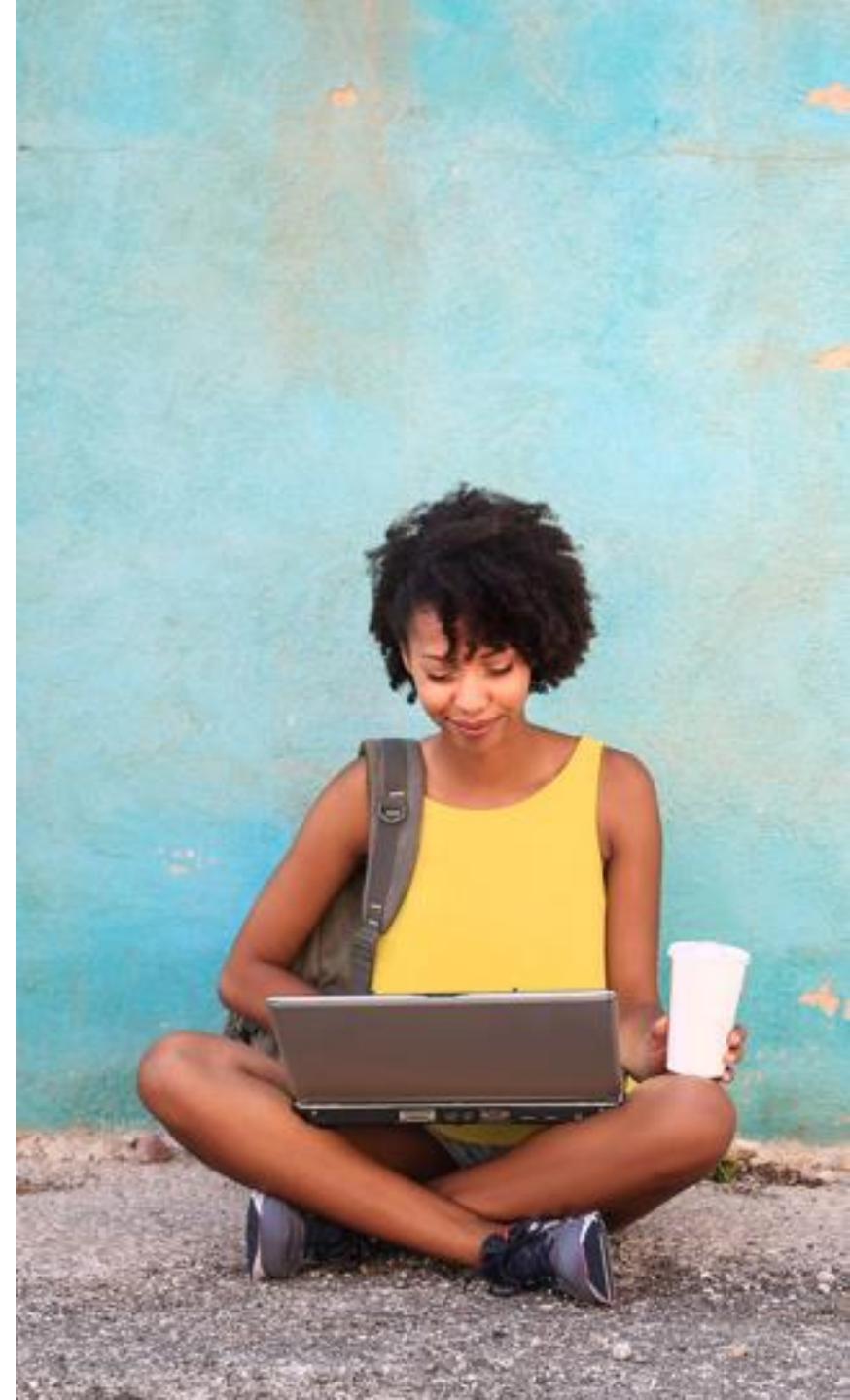
Wrap-up

IN THIS UNIT, YOU LEARNED

- How to use the ABAP Development Tools to create database tables for your demo app

NEXT UNIT

- Week 2 – Unit 3
Creating the Core Data Services (CDS) Data Model



Creating the Database Tables

Further reading

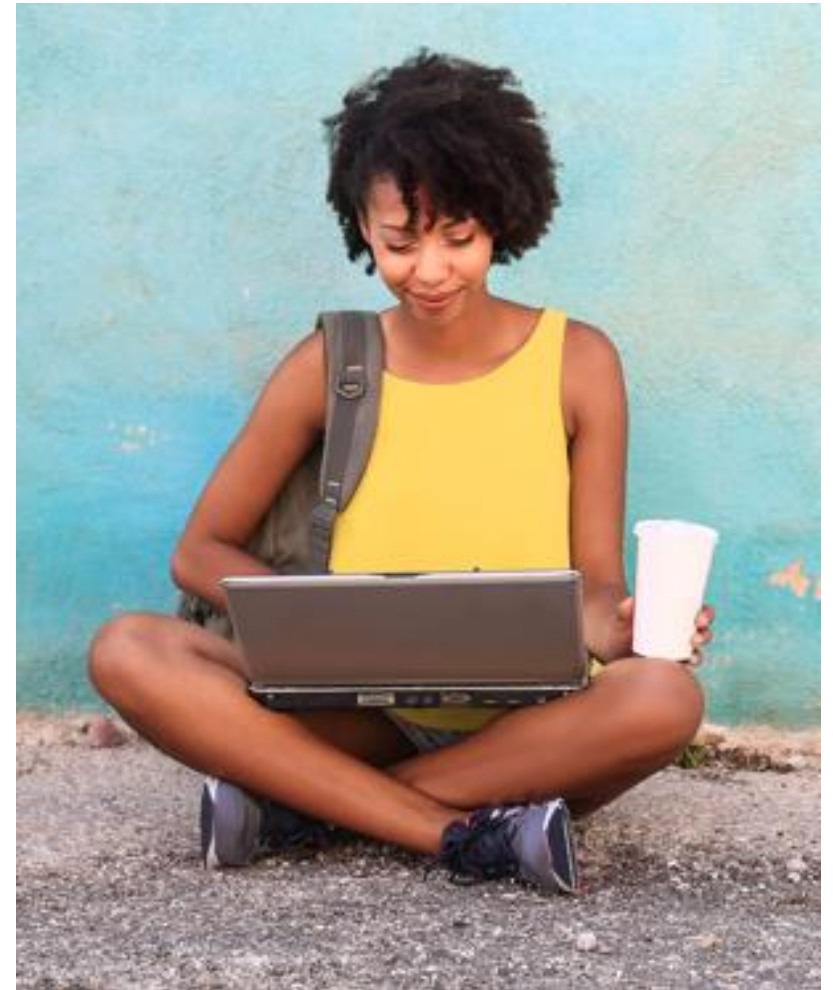


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Week 2: Developing a Read-Only List Report App

Unit 3: Creating the Core Data Services (CDS) Data Model

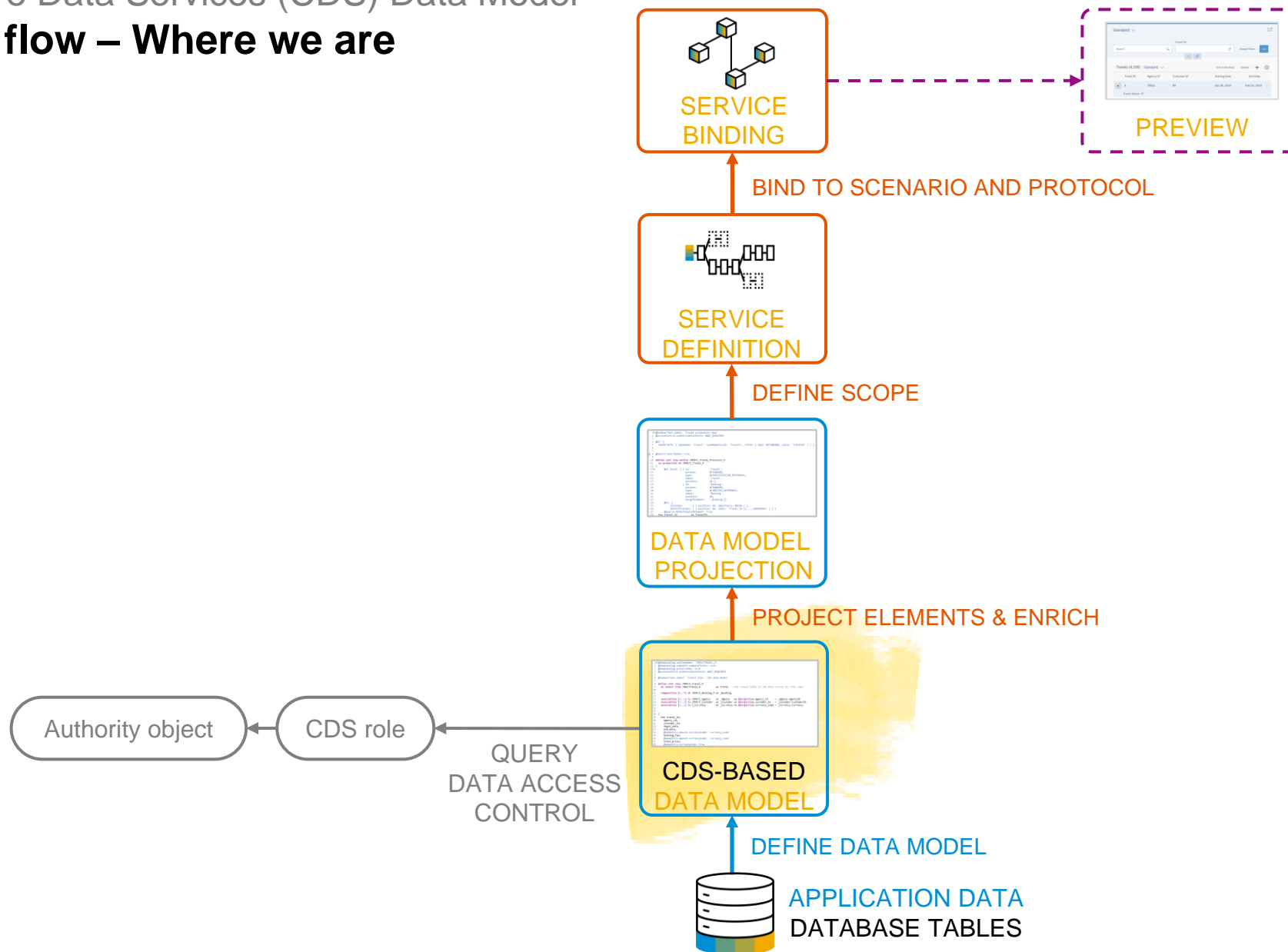
Topics

Week 2

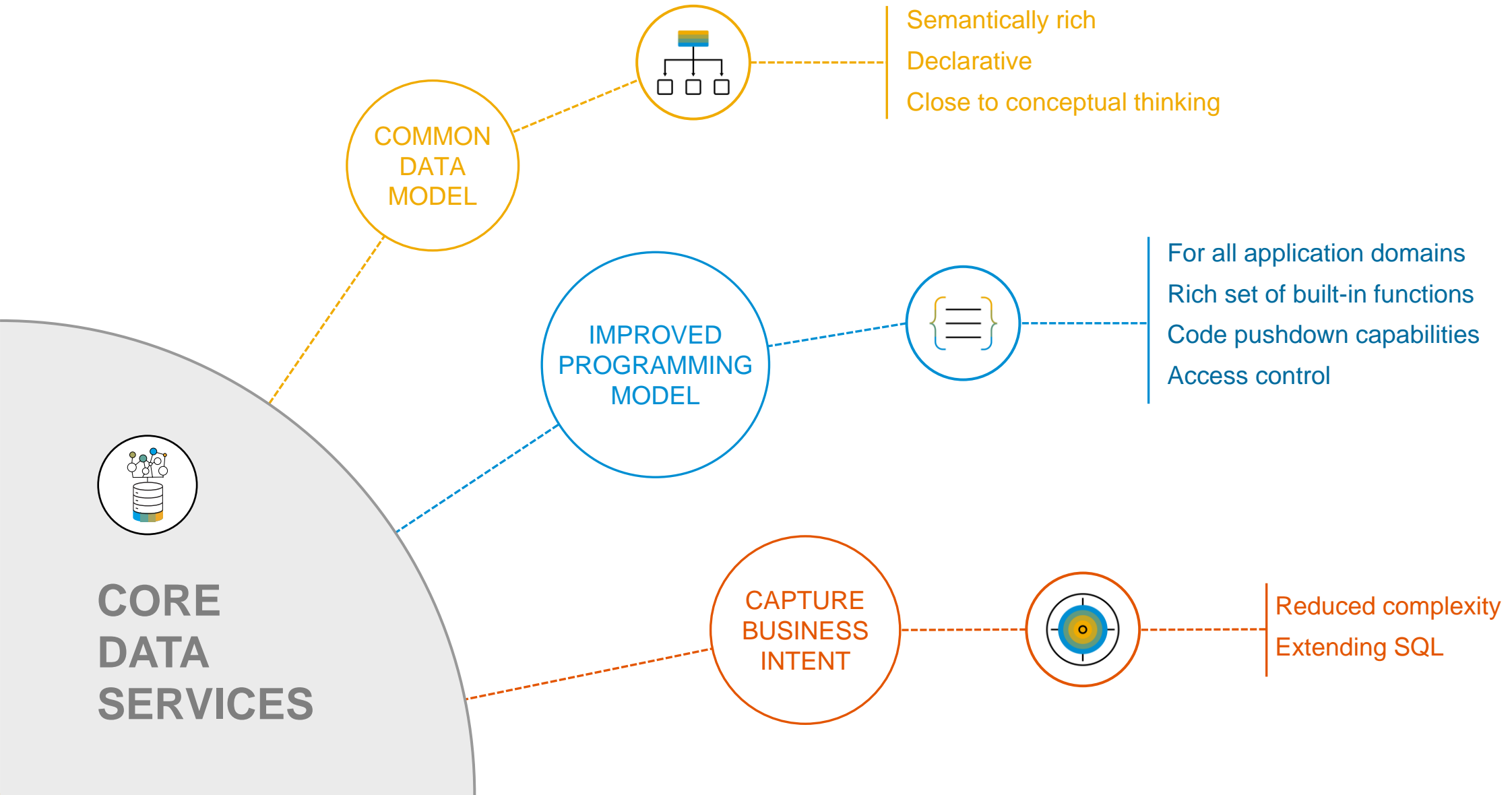
- 01** The Business Scenario
- 02** Creating the Database Tables
- 03** Creating the Core Data Services (CDS) Data Model
- 04** Defining the CDS Data Model Projection
- 05** Enriching the Projected Data Model with UI Metadata
- 06** Creating and Previewing the OData UI Service
- 07** Implementing Basic Authorizations

Creating the Core Data Services (CDS) Data Model

Development flow – Where we are



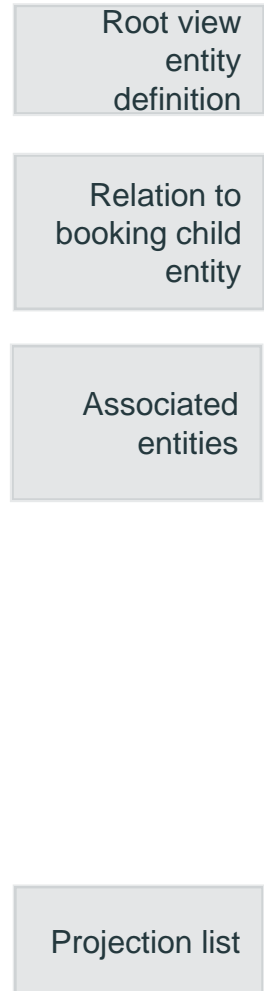
ABAP Core Data Services (CDS) – Next-generation data modeling



Creating the Core Data Services Data Model

What we will achieve in this unit

CDS View entities

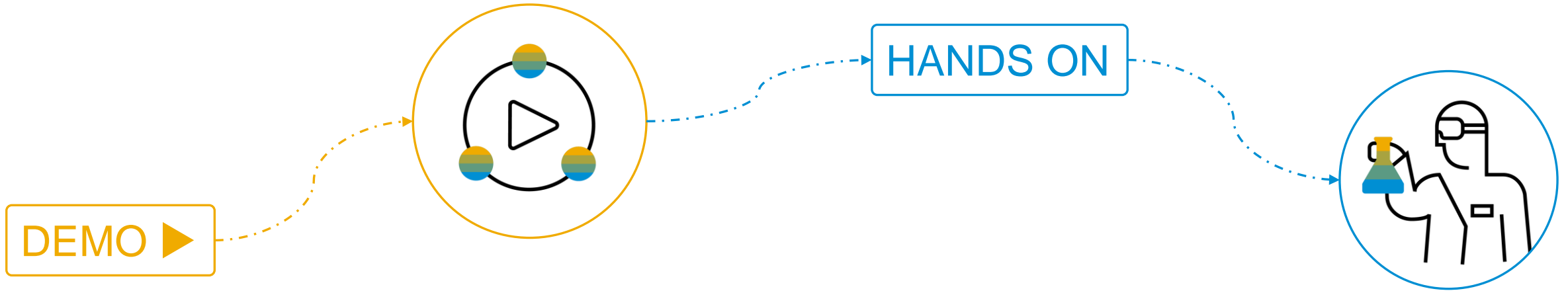


```
1 @AccessControl.authorizationCheck: #CHECK
2 @EndUserText.label: 'Travel view'
3 define root view entity ZI_RAP_Travel_1234
4   as select from zrap_atrav_1234 as Travel
5
6   composition [0..*] of ZI_RAP_Booking_1234 as _Booking
7
8   association [0..1] to /DMO/I_Agency as _Agency on $projection.AgencyID =
9   association [0..1] to /DMO/I_Customer as _Customer on $projection.CustomerID
10  association [0..1] to I_Currency as _Currency on $projection.CurrencyCode
11 {
12   key travel_uuid as TravelUUID,
13   travel_id as TravelID,
14   agency_id as AgencyID,
15   customer_id as CustomerID,
16   begin_date as BeginDate,
17   end_date as EndDate,
18   @Semantics.amount.currencyCode: 'CurrencyCode'
19   booking_fee as BookingFee,
20   @Semantics.amount.currencyCode: 'CurrencyCode'
21   total_price as TotalPrice,
22   currency_code as CurrencyCode,
23   description as Description,
24   overall_status as TravelStatus,
25   @Semantics.user.createdBy: true
26   created_by as CreatedBy,
27   @Semantics.systemDateTime.createdAt: true
28   created_at as CreatedAt,
29   @Semantics.user.lastChangedBy: true
30   last_changed_by as LastChangedBy,
31   @Semantics.systemDateTime.lastChangedAt: true
32   last_changed_at as LastChangedAt,
33   @Semantics.systemDateTime.localInstanceLastChangedAt: true
34   local_last_changed_at as LocalLastChangedAt,
35
36   /* associations */
37   _Booking,
38   _Agency,
39   _Customer,
40   _Currency
41 }
42 }
```

```
1 @AccessControl.authorizationCheck: #CHECK
2 @EndUserText.label: 'Booking BO'
3 define view entity ZI_RAP_Booking_1234
4   as select from zrap_abook_1234 as Booking
5
6   association to parent ZI_RAP_Travel_1234 as _Travel on $projection.TravelID =
7
8   association [1..1] to /DMO/I_Customer as _Customer on $projection.CustomerID
9   association [1..1] to /DMO/I_Carrier as _Carrier on $projection.CarrierID
10  association [1..1] to /DMO/I_Connection as _Connection on $projection.ConnectionID
11  association [1..1] to /DMO/I_Flight as _Flight on $projection.FlightID
12  and $projection.CarrierID = $projection.FlightID
13  and $projection.ConnectionID = $projection.FlightID
14  and $projection.FlightID = $projection.FlightID
15
16  association [0..1] to I_Currency as _Currency on $projection.CurrencyCode
17 {
18   key booking_uuid as BookingUUID,
19   travel_uuid as TravelUUID,
20   booking_id as BookingID,
21   booking_date as BookingDate,
22   customer_id as CustomerID,
23   carrier_id as CarrierID,
24   connection_id as ConnectionID,
25   flight_date as FlightDate,
26   @Semantics.amount.currencyCode: 'CurrencyCode'
27   flight_price as FlightPrice,
28   currency_code as CurrencyCode,
29   @Semantics.user.createdBy: true
30   created_by as CreatedBy,
31   @Semantics.user.lastChangedBy: true
32   last_changed_by as LastChangedBy,
33   @Semantics.systemDateTime.localInstanceLastChangedAt: true
34   local_last_changed_at as LocalLastChangedAt,
35
36   /* associations */
37   _Travel,
38   _Customer,
39   _Carrier,
40   _Connection,
41   _Flight,
42   _Currency
43 }
```

Creating the Core Data Services Data Model

Demo



CREATING THE CORE DATA SERVICES (CDS) DATA MODEL

1. Define the BO composition tree for the Travel and Booking entities

Creating the Core Data Services Data Model

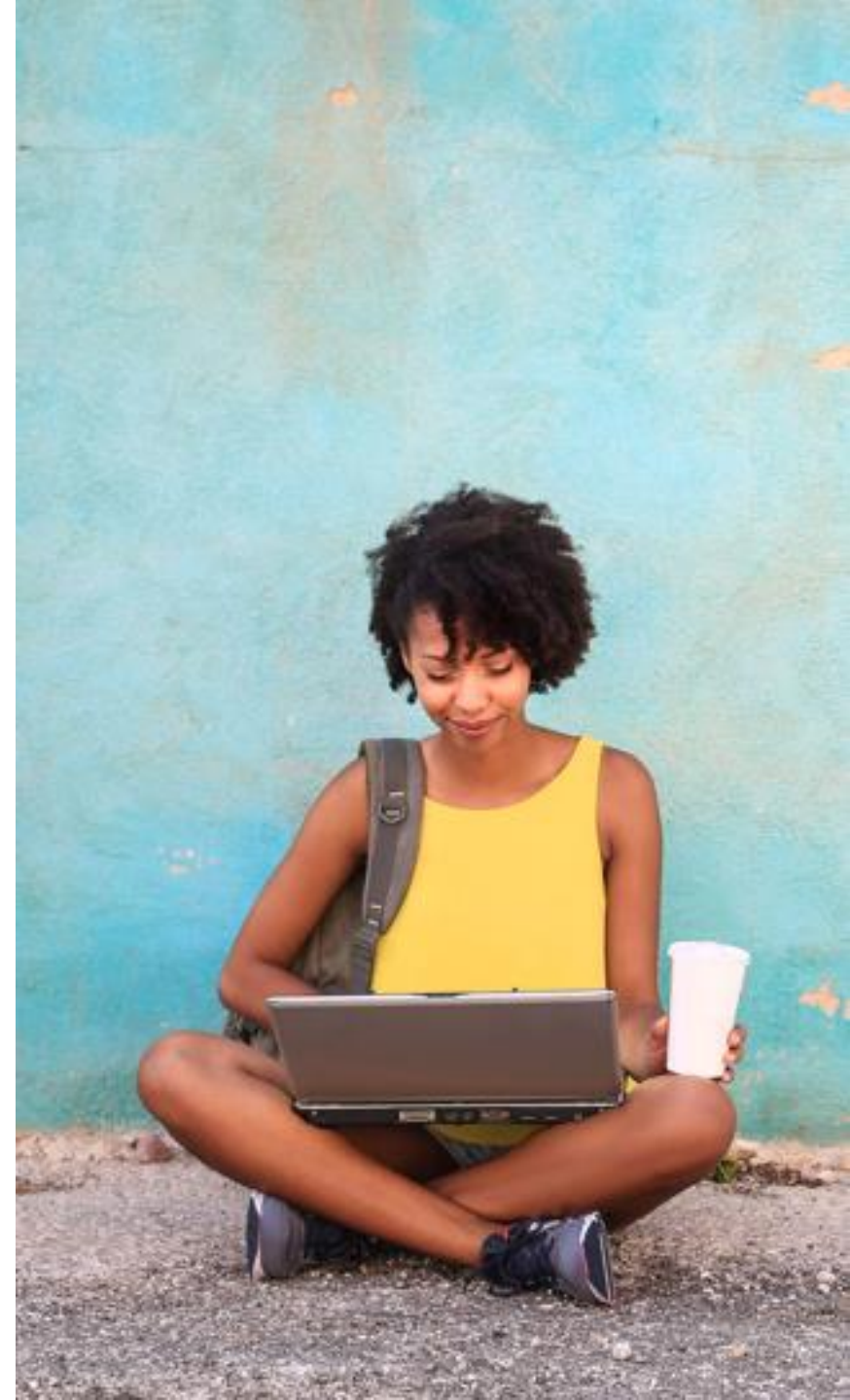
Wrap-up

IN THIS UNIT, YOU LEARNED

- About the Core Data Services (CDS) data model
- How to define the CDS data model and the business object

NEXT UNIT

- Week 2 – Unit 4
Defining the CDS Data Model Projection



Creating the Core Data Services Data Model

Further reading

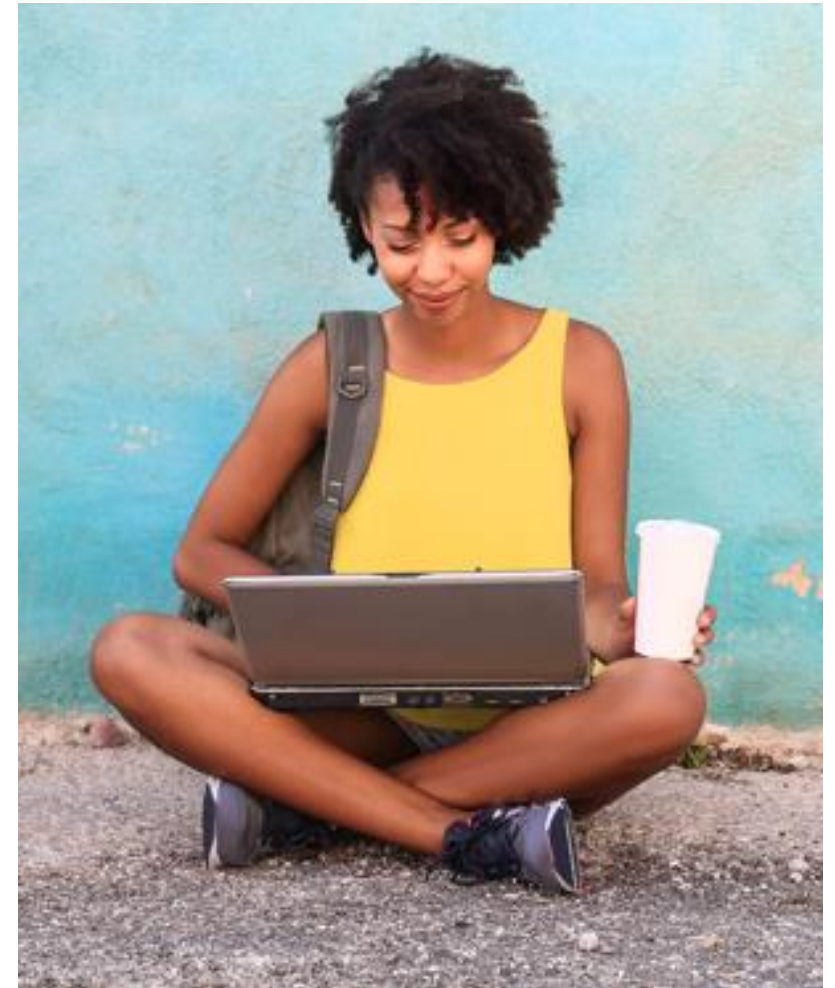


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Unit 4: Defining the CDS Data Model Projection

Defining the CDS Data Model Projection

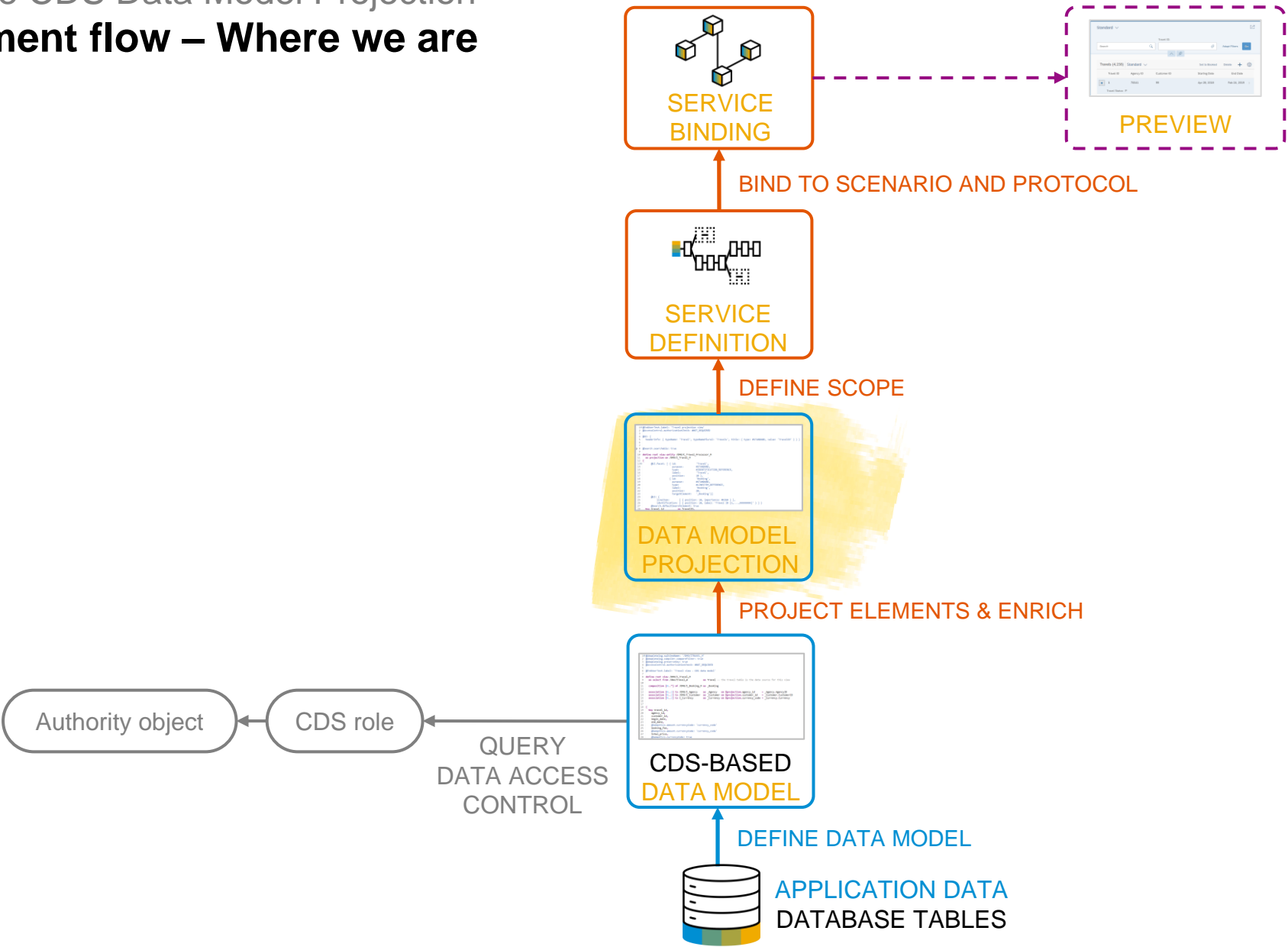
Topics

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Defining the CDS Data Model Projection

Development flow – Where we are



Defining the CDS Data Model Projection

What we will achieve in this unit

CDS Projection views

Enablement for
full-text search
and metadata
extension

Freestyle
search,
associated text

Value help

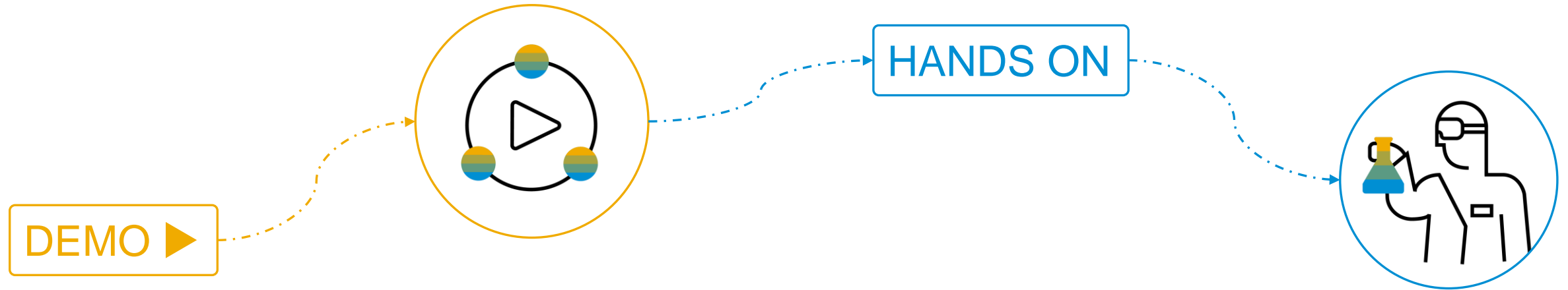
Redirected
business object

```
1 @EndUserText.label: 'Travel BO Projection View'
2 @AccessControl.authorizationCheck: #CHECK
3 @Search.searchable: true
4 @Metadata.allowExtensions: true
5 define root view entity ZC_RAP_Travel_1234
6 as projection on ZI_RAP_Travel_1234 as Travel
7 {
8   key TravelUUID,
9   @Search.defaultSearchElement: true
10  TravelID,
11  @Consumption.valueHelpDefinition: [{ entity : {name: '/DMO/I_Agency', element: 'AgencyID' }
12  @ObjectModel.text.element: ['AgencyName']
13  @Search.defaultSearchElement: true
14  AgencyID,
15  _Agency.Name as AgencyName,
16  @Consumption.valueHelpDefinition: [{ entity : {name: '/DMO/I_Customer', element: 'CustomerID' }
17  @ObjectModel.text.element: ['CustomerName']
18  @Search.defaultSearchElement: true
19  CustomerID,
20  _Customer.LastName as CustomerName,
21  BeginDate,
22  EndDate,
23  @Semantics.amount.currencyCode: 'Currencycode'
24  BookingFee,
25  @Semantics.amount.currencyCode: 'CurrencyCode'
26  TotalPrice,
27  @Consumption.valueHelpDefinition: [{ entity : {name: 'I_Currency', element: 'Currency' } }}
28  CurrencyCode,
29  Description,
30  TravelStatus,
31  CreatedBy,
32  CreatedAt,
33  LastChangedBy,
34  LastChangedAt,
35  LocalLastChangedAt,
36
37  /* associations */
38  _Booking : redirected to composition child ZC_RAP_Booking_1234,
39  _Agency,
40  _Customer
41 }
42
```

```
1 @EndUserText.label: 'Booking BO Projection view'
2 @AccessControl.authorizationCheck: #CHECK
3 @Search.searchable: true
4 @Metadata.allowExtensions: true
5 define view entity ZC_RAP_Booking_1234
6 as projection on ZI_RAP_Booking_1234 as Booking
7 {
8   key BookingUUID,
9   TravelUUID,
10  @Search.defaultSearchElement: true
11  BookingID,
12  BookingDate,
13  @Consumption.valueHelpDefinition: [{ entity : {name: '/DMO/I_Customer', element: 'CustomerID' }
14  @ObjectModel.text.element: ['CustomerName']
15  @Search.defaultSearchElement: true
16  CustomerID,
17  _Customer.LastName as CustomerName,
18  @Consumption.valueHelpDefinition: [{entity: {name: '/DMO/I_Carrier', element: 'AirlineID' }}
19  @ObjectModel.text.element: ['CarrierName']
20  CarrierID,
21  _Carrier.Name as CarrierName,
22  @Consumption.valueHelpDefinition: [ {entity: {name: '/DMO/I_Flight', element: 'ConnectionID' }
23    additionalBinding: [ { localElement: 'CarrierID', el
24                        { localElement: 'FlightDate', el
25                        { localElement: 'FlightPrice', el
26                        { localElement: 'CurrencyCode', el
27  ConnectionID,
28  FlightDate,
29  @Semantics.amount.currencyCode: 'CurrencyCode'
30  FlightPrice,
31  @Consumption.valueHelpDefinition: [{entity: {name: 'I_Currency', element: 'Currency' }}
32  CurrencyCode,
33  CreatedBy,
34  LastChangedBy,
35  LocalLastChangedAt,
36
37  /* associations */
38  _Travel : redirected to parent ZC_RAP_Travel_1234,
39  _Customer,
40  _Carrier
41 }
42
```

Defining the CDS Data Model Projection

Demo



Defining the CDS Data Model Projection

1. Define the BO data model projection for the Travel and Booking entities

Defining the CDS Data Model Projection

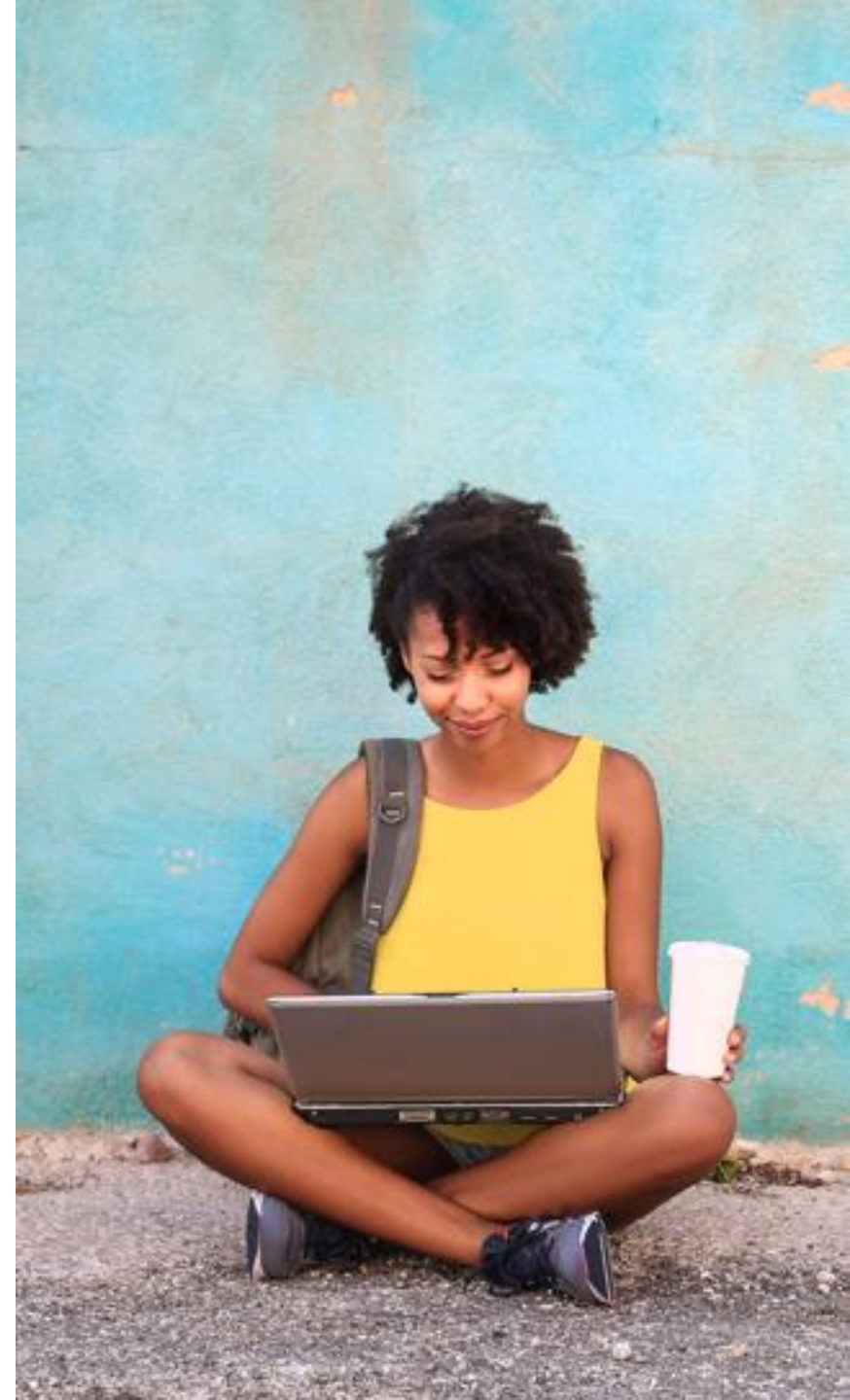
Wrap-up

IN THIS UNIT, YOU LEARNED

- What the reasons for projecting a CDS data model are
- How to define a CDS data model projection for business objects

NEXT UNIT

- Week 2 – Unit 5
Enriching the Projected Data Model with UI Metadata



Defining the CDS Data Model Projection

Further reading

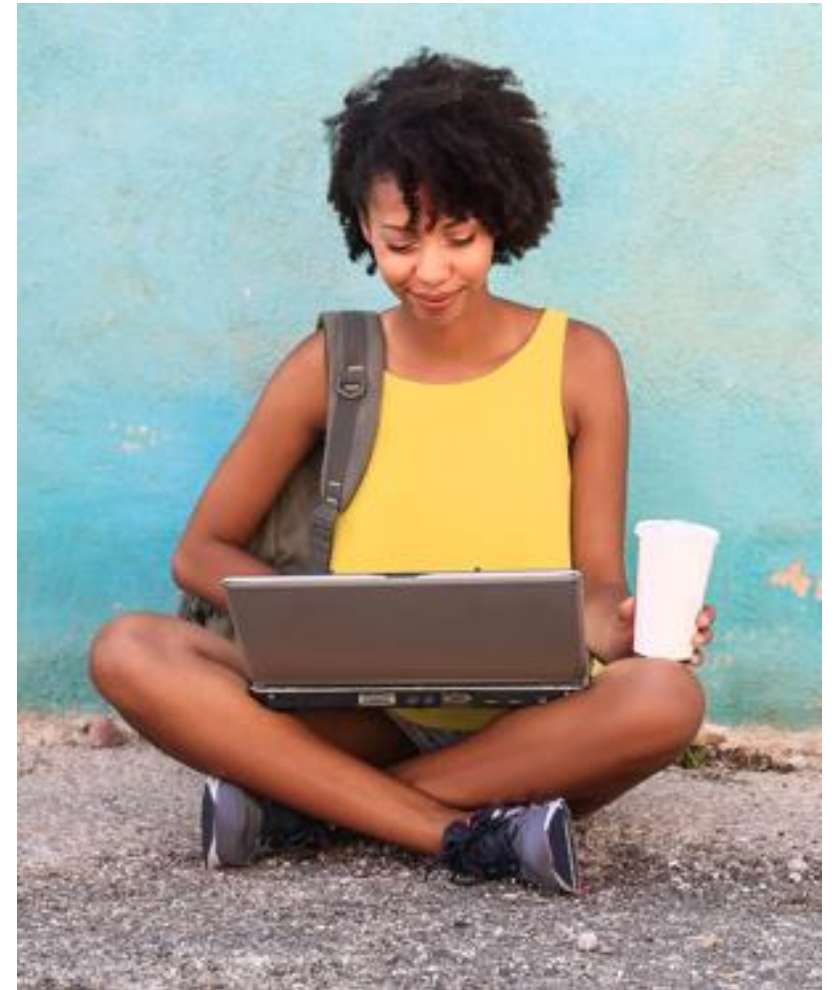


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Week 2: Developing a Read-Only List Report App

Unit 5: Enriching the Projected Data Model with UI Metadata

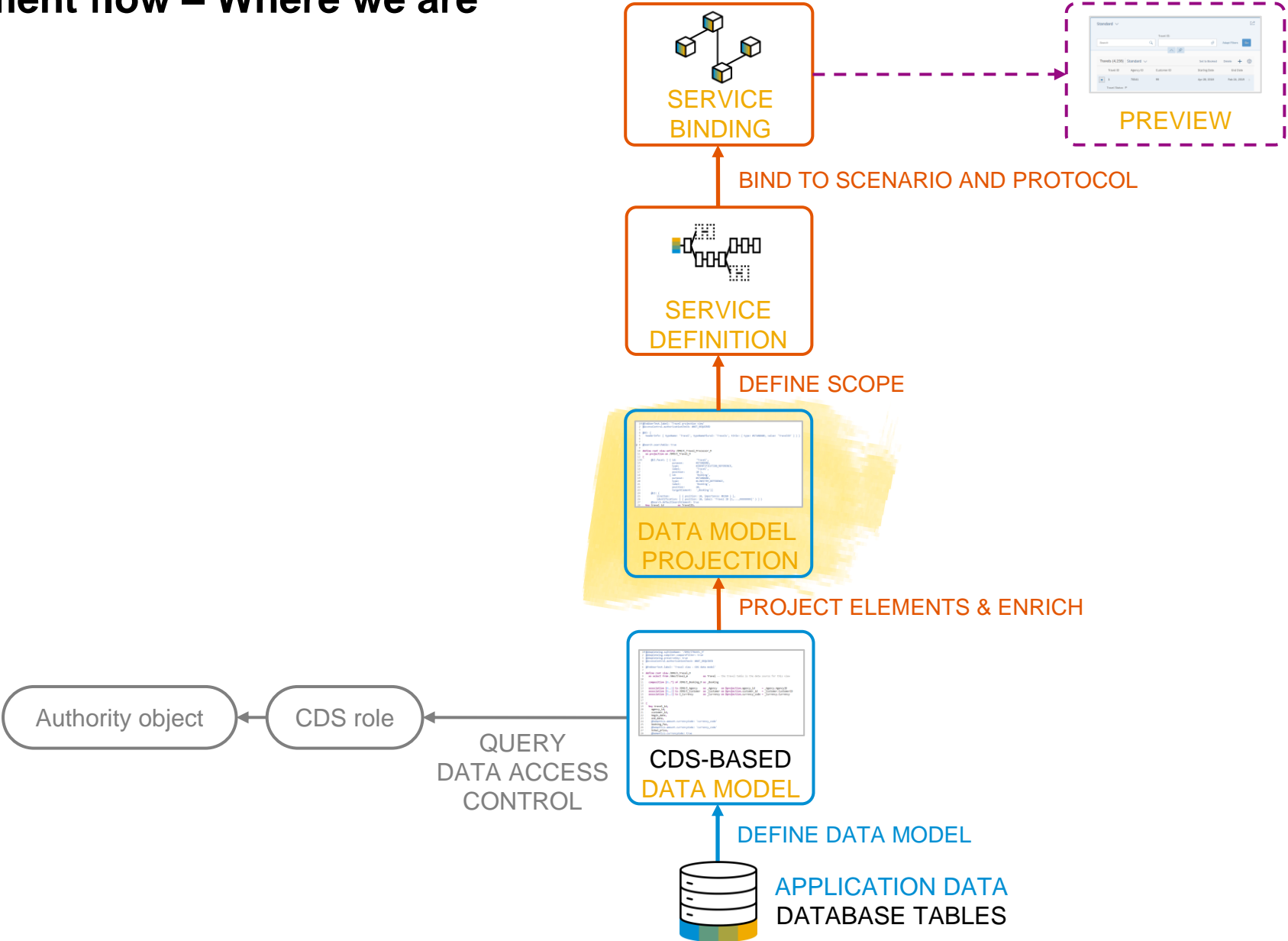
Topics

Week 2

- 01 The Business Scenario
- 02 Creating the Database Tables
- 03 Creating the Core Data Services (CDS) Data Model
- 04 Defining the CDS Data Model Projection
- 05 Enriching the Projected Data Model with UI Metadata
- 06 Creating and Previewing the OData UI Service
- 07 Implementing Basic Authorizations

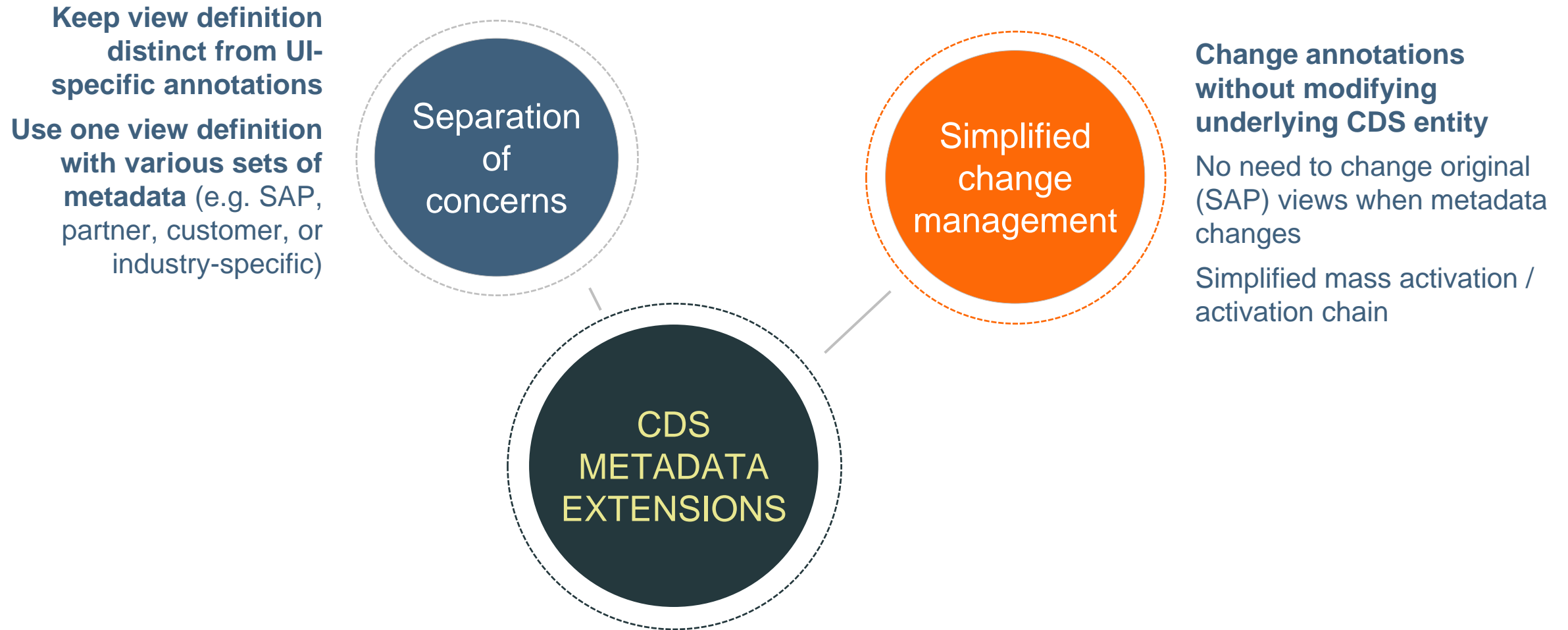
Enriching the Projected Data Model with UI Metadata

Development flow – Where we are



Enriching the Projected Data Model with UI Metadata

CDS metadata extension (MDE) in a nutshell



Enriching the Projected Data Model with UI Metadata

What we will achieve in this unit

CDS Metadata Extensions

Metadata layering

Reference to CDS view entity

UI Facet definition

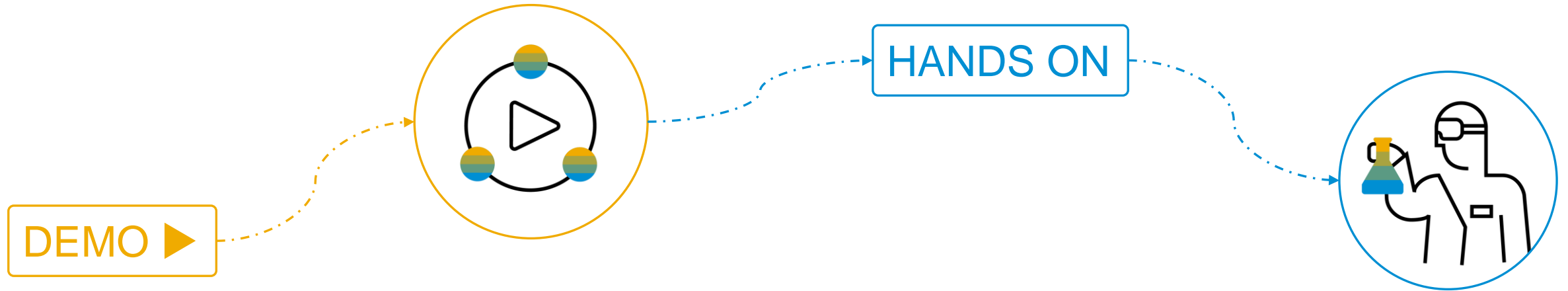
Field-specific UI properties

```
1 @Metadata.layer: #CORE
2 @UI: {
3   headerInfo: { typeName: 'Travel',
4                 typeNamePlural: 'Travels',
5                 title: { type: #STANDARD, label: 'Travel', value: 'TravelID' } },
6   presentationVariant: [{ sortOrder: [{ by: 'TravelID', direction: #DESC }] }] }
7
8 annotate view ZC_RAP_Travel_1234 with
9 {
10
11   @UI.facet: [ { id: 'Travel',
12                  purpose: #STANDARD,
13                  type: #IDENTIFICATION_REFERENCE,
14                  label: 'Travel',
15                  position: 10 },
16                { id: 'Booking',
17                  purpose: #STANDARD,
18                  type: #LINEITEM_REFERENCE,
19                  label: 'Booking',
20                  position: 20,
21                  targetElement: '_Booking' } ]
22
23   @UI: { identification: [{ position: 10, label: 'Travel UUID' }] }
24   TravelUUID;
25
26   @UI: { lineItem: [ { position: 10 } ],
27           identification: [ { position: 10 } ],
28           selectionField: [ { position: 10 } ] }
29   TravelID;
30
31   @UI: { lineItem: [ { position: 20 } ],
32           identification: [ { position: 20 } ],
33           selectionField: [ { position: 20 } ] }
34   AgencyID;
35
36   @UI: { lineItem: [ { position: 30 } ],
37           identification: [ { position: 30 } ],
38           selectionField: [ { position: 30 } ] }
39   CustomerID;
40
41   @UI: { lineItem: [ { position: 40 } ],
42           identification: [ { position: 40 } ] }
43   BeginDate;
44
45   @UI: { lineItem: [ { position: 50 } ],
46           identification: [ { position: 50 } ] }
47   EndDate;
48
49   @UI.identification: [ { position: 60 } ]
```

```
1 @Metadata.layer: #CORE
2 @UI: {
3   headerInfo: { typeName: 'Booking',
4                 typeNamePlural: 'Bookings',
5                 title: { type: #STANDARD, value: 'BookingID' } } }
6
7 annotate view ZC_RAP_Booking_1234 with
8 {
9
10   @UI.facet: [ { id: 'Booking',
11                  purpose: #STANDARD,
12                  type: #IDENTIFICATION_REFERENCE,
13                  label: 'Booking',
14                  position: 10 } ]
15
16   @UI: { identification: [ { position: 10, label: 'Booking UUID' } ] }
17   BookingUUID;
18
19   @UI.hidden: true
20   TravelUUID;
21
22   @UI: { lineItem: [ { position: 20 } ],
23           identification: [ { position: 20 } ] }
24   BookingID;
25
26   @UI: { lineItem: [ { position: 30 } ],
27           identification: [ { position: 30 } ] }
28   BookingDate;
29
30   @UI: { lineItem: [ { position: 40 } ],
31           identification: [ { position: 40 } ] }
32   CustomerID;
33
34   @UI: { lineItem: [ { position: 50 } ],
35           identification: [ { position: 50 } ] }
36   CarrierID;
37
38   @UI: { lineItem: [ { position: 60 } ],
39           identification: [ { position: 60 } ] }
40   ConnectionID;
41
42   @UI: { lineItem: [ { position: 70 } ],
43           identification: [ { position: 70 } ] }
44   FlightDate;
45
46   @UI: { lineItem: [ { position: 80 } ],
47           identification: [ { position: 80 } ] }
48   FlightPrice;
49
50   @UI.hidden: true
```


Enriching the Projected Data Model with UI Metadata

Demo



Enriching the Projected Data Model with UI Metadata

1. Enable CDS projections
2. Create CDS metadata extensions
3. Define the layout of your app

Enriching the Projected Data Model with UI Metadata

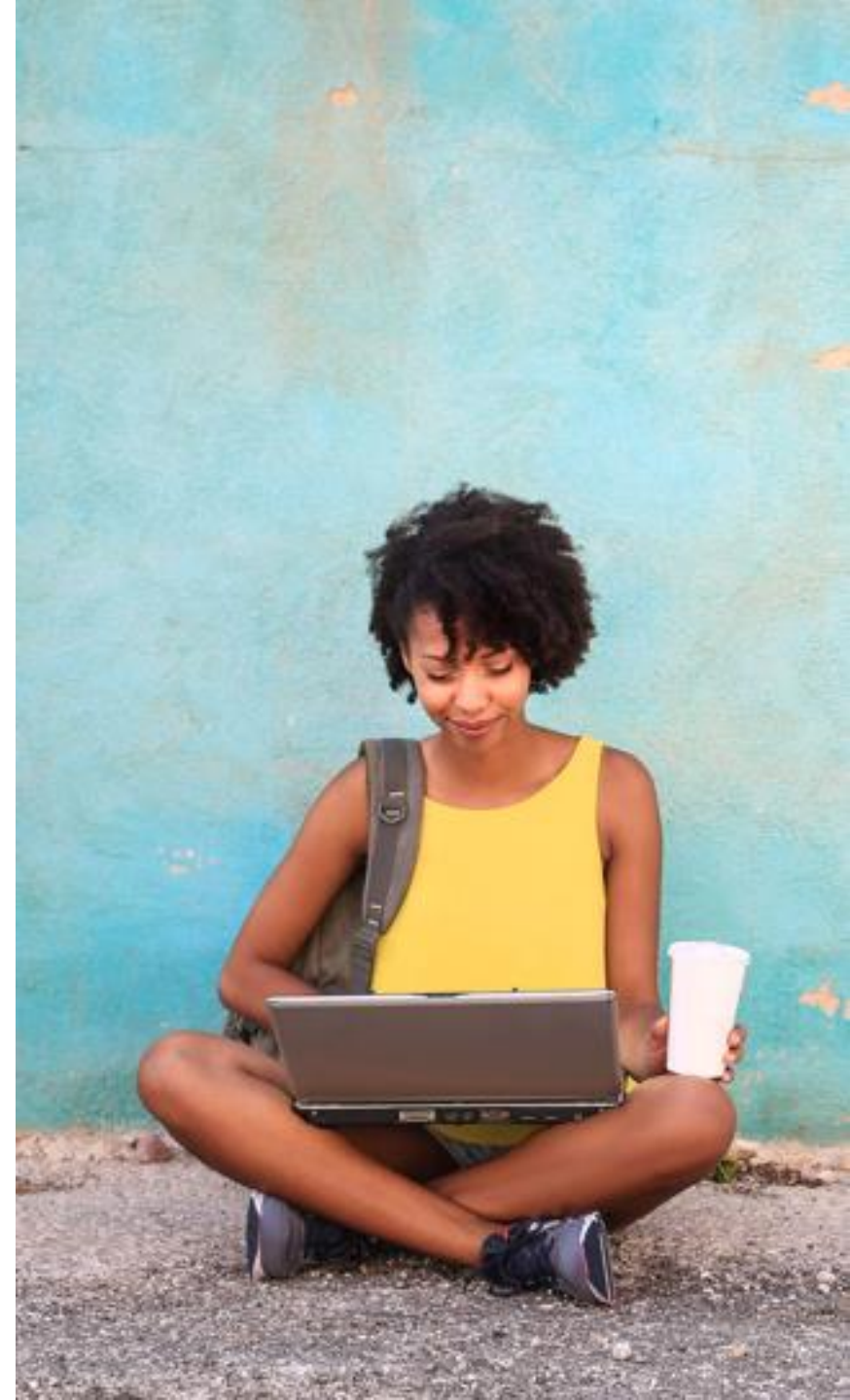
Wrap-up

IN THIS UNIT, YOU LEARNED

- About enriching a CDS data model with UI-specific annotations
- How to create CDS metadata extensions

NEXT UNIT

- Week 2 – Unit 6
Creating and Previewing the OData UI Service



Enriching the Projected Data Model with UI Metadata

Further reading

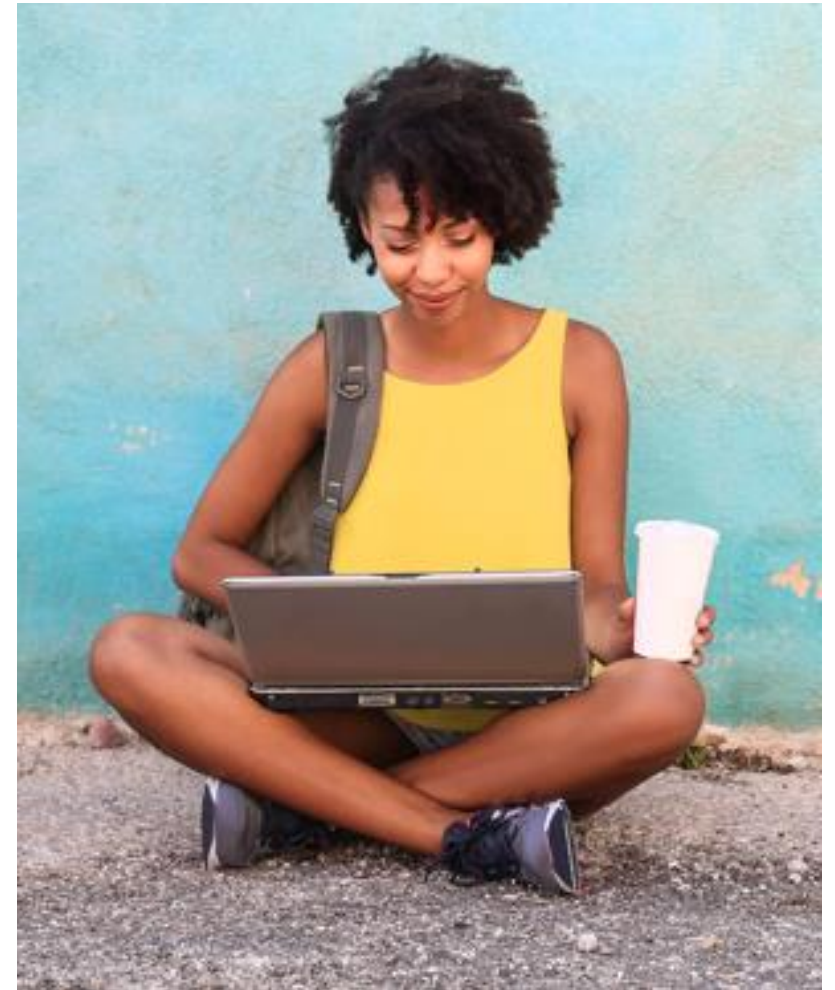


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Week 2: Developing a Read-Only List Report App

Unit 6: Creating and Previewing the OData UI Service

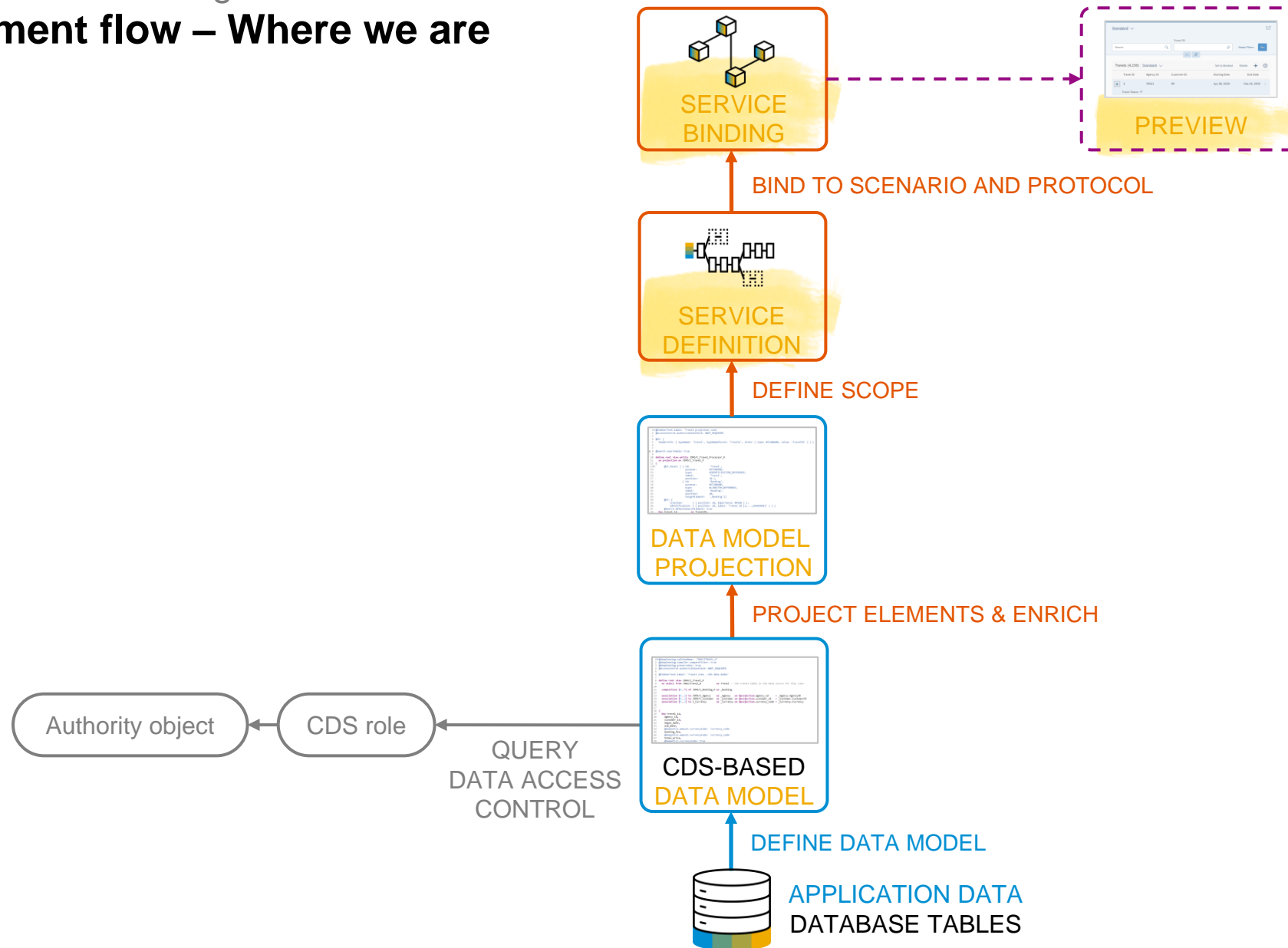
Topics

Week 2

- 01** The Business Scenario
- 02** Creating the Database Tables
- 03** Creating the Core Data Services (CDS) Data Model
- 04** Defining the CDS Data Model Projection
- 05** Enriching the Projected Data Model with UI Metadata
- 06** Creating and Previewing the OData UI Service
- 07** Implementing Basic Authorizations

Creating and Previewing the OData UI Service

Development flow – Where we are



Creating and Previewing the OData UI Service

What we will achieve in this unit

Service definition

```
1 @EndUserText.label: 'Service Definition for Travel App' ^
2 define service ZUI_RAP_Travel_1234 {
3   expose ZC_RAP_Travel_1234 as Travel;
4   expose ZC_RAP_Booking_1234 as Booking;
5   expose /DMO/I_Agency as Agency;
6   expose /DMO/I_Customer as Customer;
7   expose /DMO/I_Flight as Flight;
8   expose /DMO/I_Carrier as Carrier;
9   expose /DMO/I_Connection as Connection;
10  expose /DMO/I_Airport as Airport;
11  expose I_Currency as Currency;
12  expose I_Country as Country;
13 }
```

Service binding

Service Binding: ZUI_RAP_TRAVEL_O2_1234

General Information

This section describes general information about this service binding

Binding Type:

Service Versions

Define service versions associated with the service binding

type filter text

Version	Service Definition
0001	ZUI_RAP_TRAVEL_1234

Add...

Remove

Service Version Details

View information on selected service version

Default Authorization Values: 61BCC53FCF801810518D6458438C3CHT

Local Service Endpoint:

Service Information

Service URL:

type filter text

Entity Set and Association

Carrier

to_Currency

Connection

Preview...

Fiori elements app preview in ADT: Resulting app

Standard *

Travel ID:

Agency ID:

Customer ID:

Search

Adapt Filters

Go

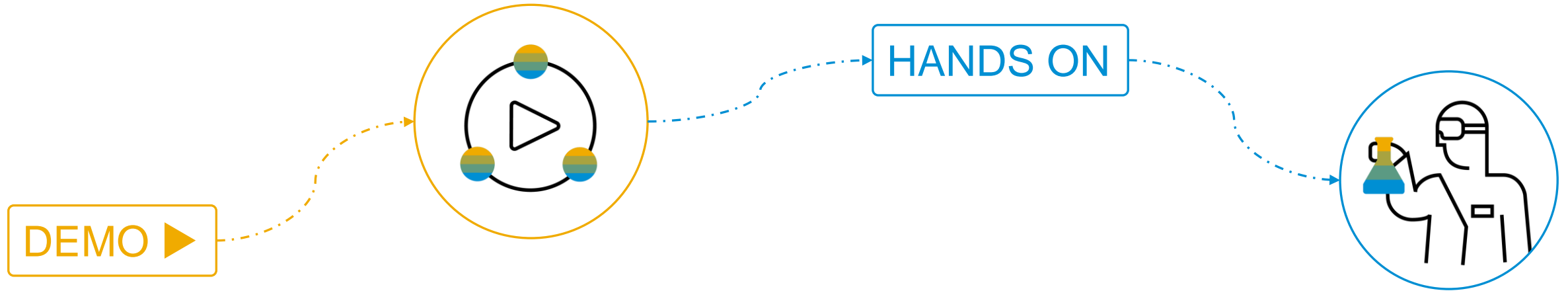
Travels (200)

Standard

Travel ID	Agency ID	Customer ID	Starting Date	End Date	Total Price	Booking Status
200	No Return (70020)	Columbo (66)	May 7, 2020	May 8, 2020	9,385.00 SGD	O
199	Super Agency (70017)	Kreiss (345)	May 7, 2020	May 8, 2020	18,742.00 SGD	O
198	Real Weird Vacation (70037)	Lautenbach (583)	May 7, 2020	Mar 4, 2021	33,575.00 SGD	A
197	Sunshine Travel (70001)	Hoffen (166)	May 7, 2020	May 7, 2020	10,313.00 SGD	O
196	No Return (70020)	Barth (108)	May 7, 2020	May 8, 2020	9,096.00 SGD	O
195	Everywhere (70024)	Hunter (322)	May 7, 2020	Mar 3, 2021	26,416.00 SGD	O

Creating and Previewing the OData UI Service

Demo



CREATING AND PREVIEWING THE ODATA UI SERVICE

1. Create service definition from data model projection
2. Create service binding
3. Preview your app

Creating and Previewing the OData UI Service

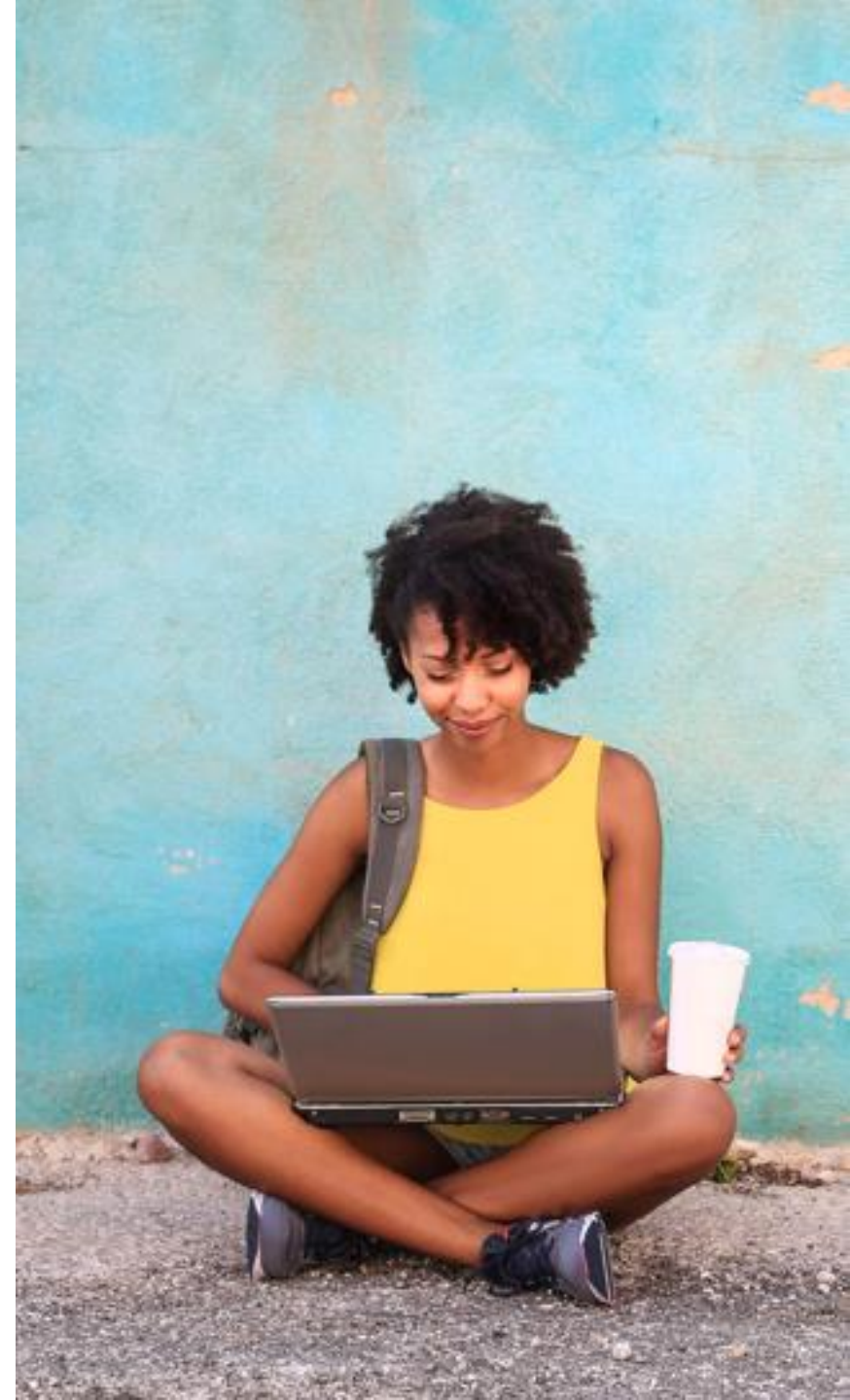
Wrap-up

IN THIS UNIT, YOU LEARNED

- About service definitions and service binding and how do create them
- How to preview your app in ABAP Development Tools

NEXT UNIT

- Week 2 – Unit 7
Implementing Basic Authorizations



Creating and Previewing the OData UI Service

Further reading

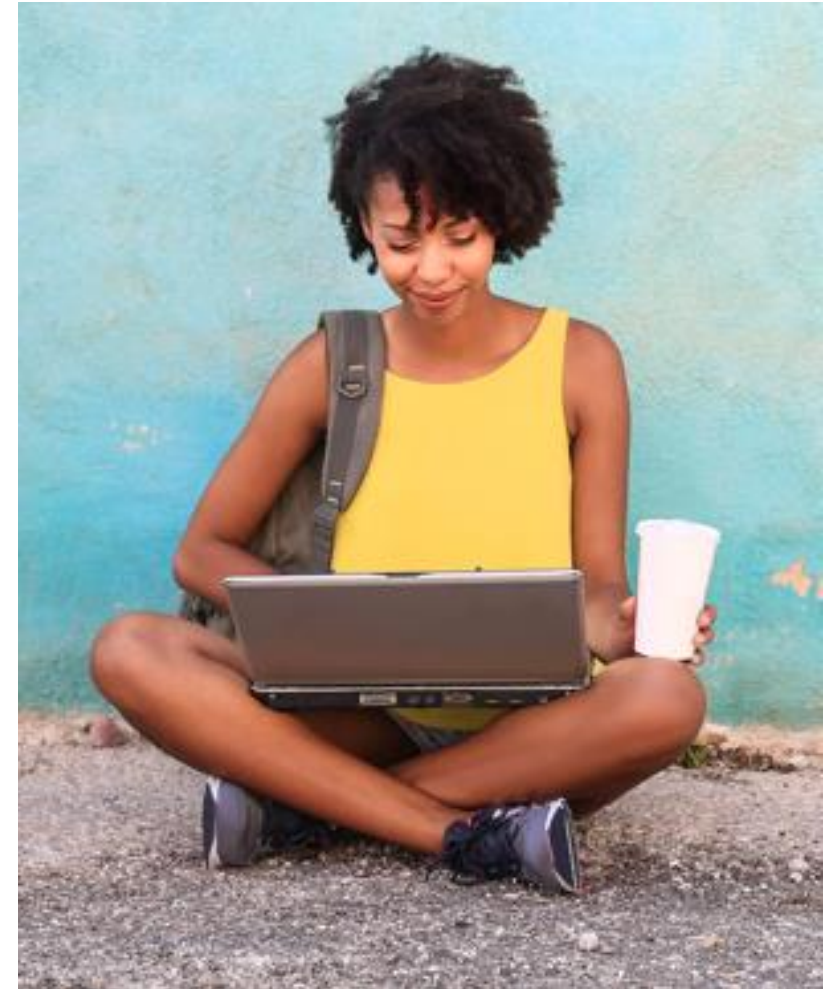


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Week 2: Developing a Read-Only List Report App

Unit 7: Implementing Basic Authorizations

Implementing Basic Authorizations

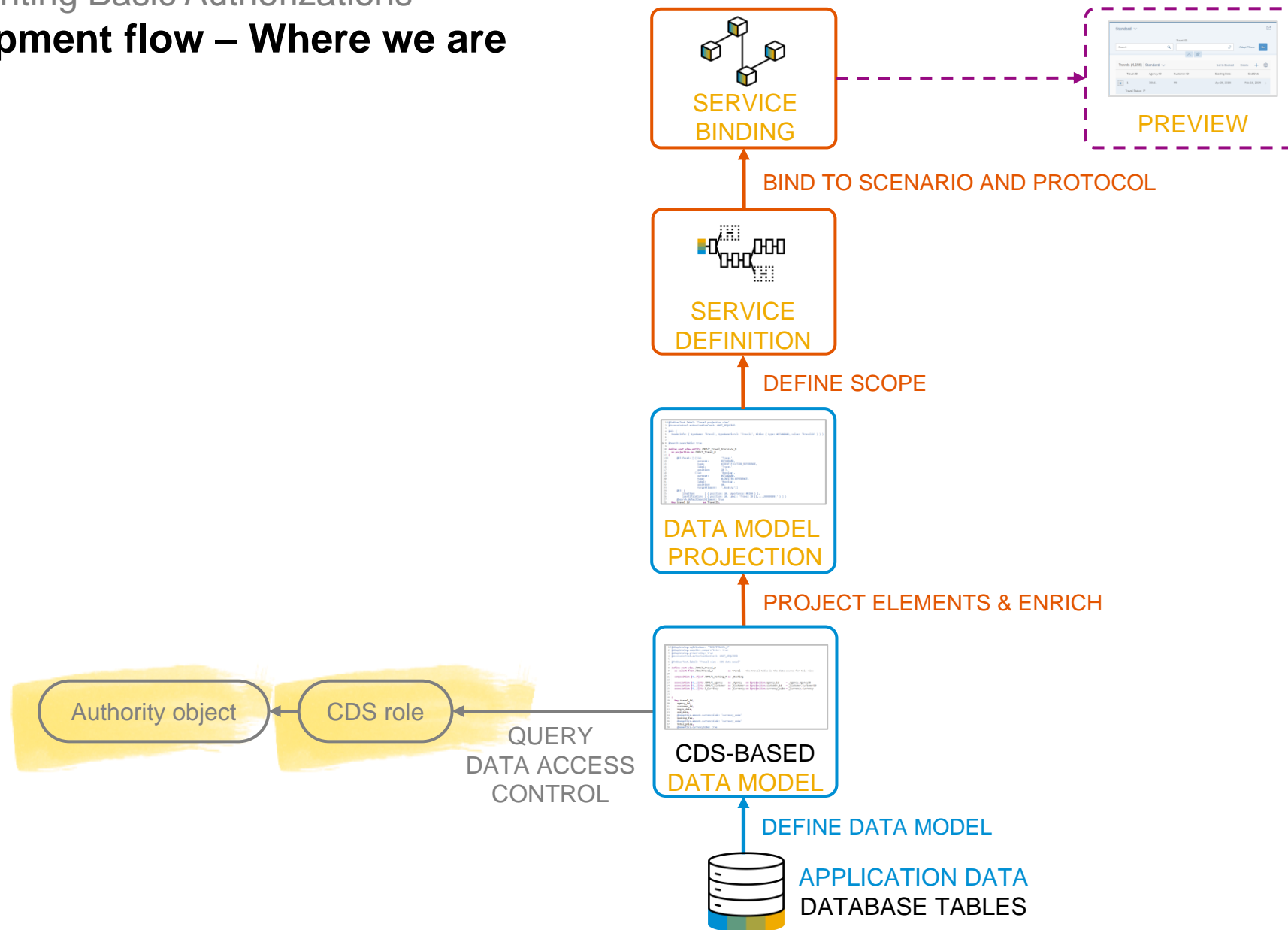
Topics

- 01** The Business Scenario
- 02** Creating the Database Tables
- 03** Creating the Core Data Services (CDS) Data Model
- 04** Defining the CDS Data Model Projection
- 05** Enriching the Projected Data Model with UI Metadata
- 06** Creating and Previewing the OData UI Service
- 07** Implementing Basic Authorizations

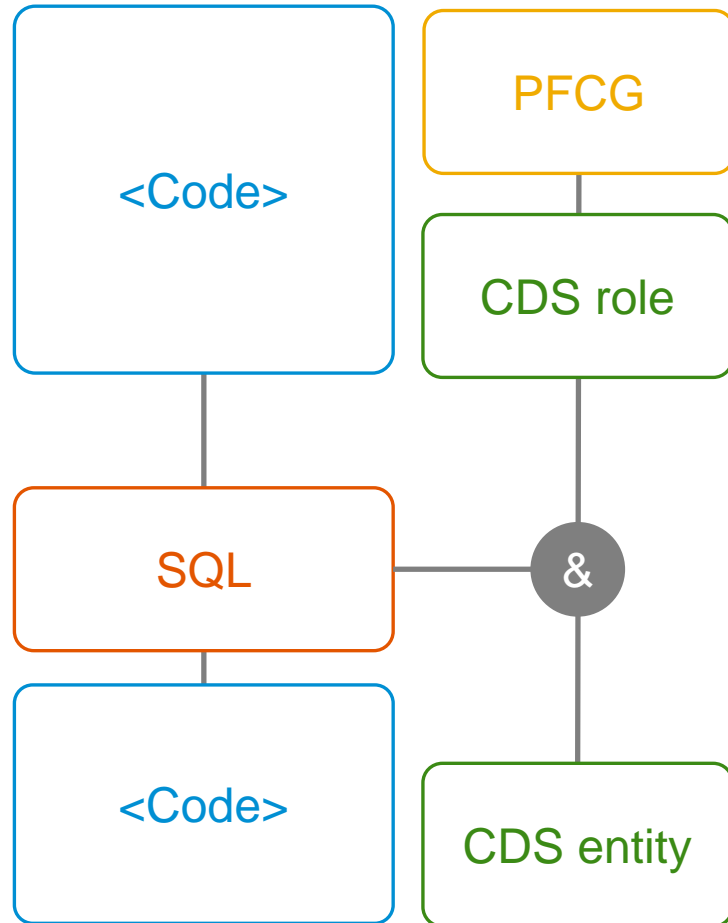
Week 2

Implementing Basic Authorizations

Development flow – Where we are



Declarative access control with CDS roles



CDS roles with a declarative approach instead of coded approach

- Using CDS Data Control Language (DCL)
- Explicitly defined for each CDS entity
- Based on PFCG conditions, literal conditions, user conditions, and inheritance conditions

Defined once and automatically used everywhere

Authorizations pushed down to the database

Implementing Basic Authorizations

What we will achieve in this unit

CDS role definition

Authorization conditions

Inherited authorizations

The screenshot displays the SAP ABAP development environment. On the left, two CDS role definitions are shown in the editor:

```
1=@EndUserText.label: 'Access control for ZI_RAP_Travel_1234'
2>@MappingRole: true
3>define role ZI_RAP_TRAVEL_1234 {
4>  grant
5>  select
6>  on
7>    ZI_RAP_TRAVEL_1234
8>  where
9>    CurrencyCode = 'EUR'
10>    and
11>    ( TravelStatus ) = aspect pfcg_auth(ZOSTAT1234, ZOSTAT1234, ACTVT = '03' )
12>  ;
13>
14>}
```

```
1=@EndUserText.label: 'Access control for ZC_RAP_Travel_1234'
2>@MappingRole: true
3>define role ZC_RAP_TRAVEL_1234 {
4>  grant
5>  select
6>  on
7>    ZC_RAP_Travel_1234
8>  where
9>    inheriting conditions from entity ZI_RAP_Travel_1234;
10>
11>}
```

On the right, the 'Authorization Object: ZOSTAT1234' configuration screen is shown. It includes the following sections:

- General:** Object Class: CPAE, Object Class Description: SAP Cloud Platform ABAP Environment Objects.
- Authorization Fields:** A table with columns: Authorization Field, Description, Activity Field.
- Permitted Activities:** A table with columns: Activity, Description, Access Category.
- What's next?:** Links for 'Create restriction type based on authorization object' and 'Assign to an existing Restriction Type'.

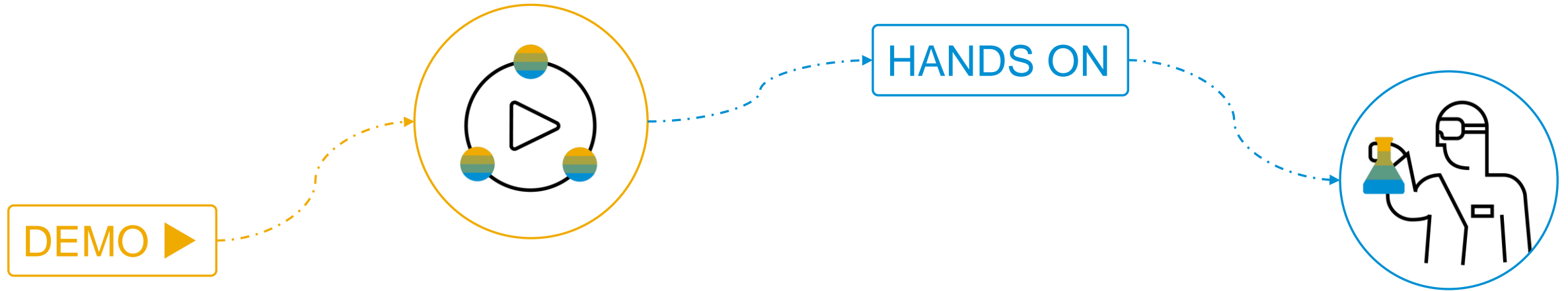
Authorization Field	Description	Activity Field
ZOSTAT1234	Travel status	<input type="checkbox"/>
ACTVT	Activity	<input checked="" type="checkbox"/>
<Enter new value>		<input type="checkbox"/>

Activity	Description	Access Category
01	Add or Create	Write
02	Change	Write
03	Display	Read
06	Delete	Write
<Enter new value>		

Authorization object

Implementing Basic Authorizations

Demo



CREATE BASIC AUTHORIZATION FOR YOUR APP

1. Create an authorization object
2. Create CDS roles for the travel entity
3. Test the enhanced SAP Fiori app

Implementing Basic Authorizations

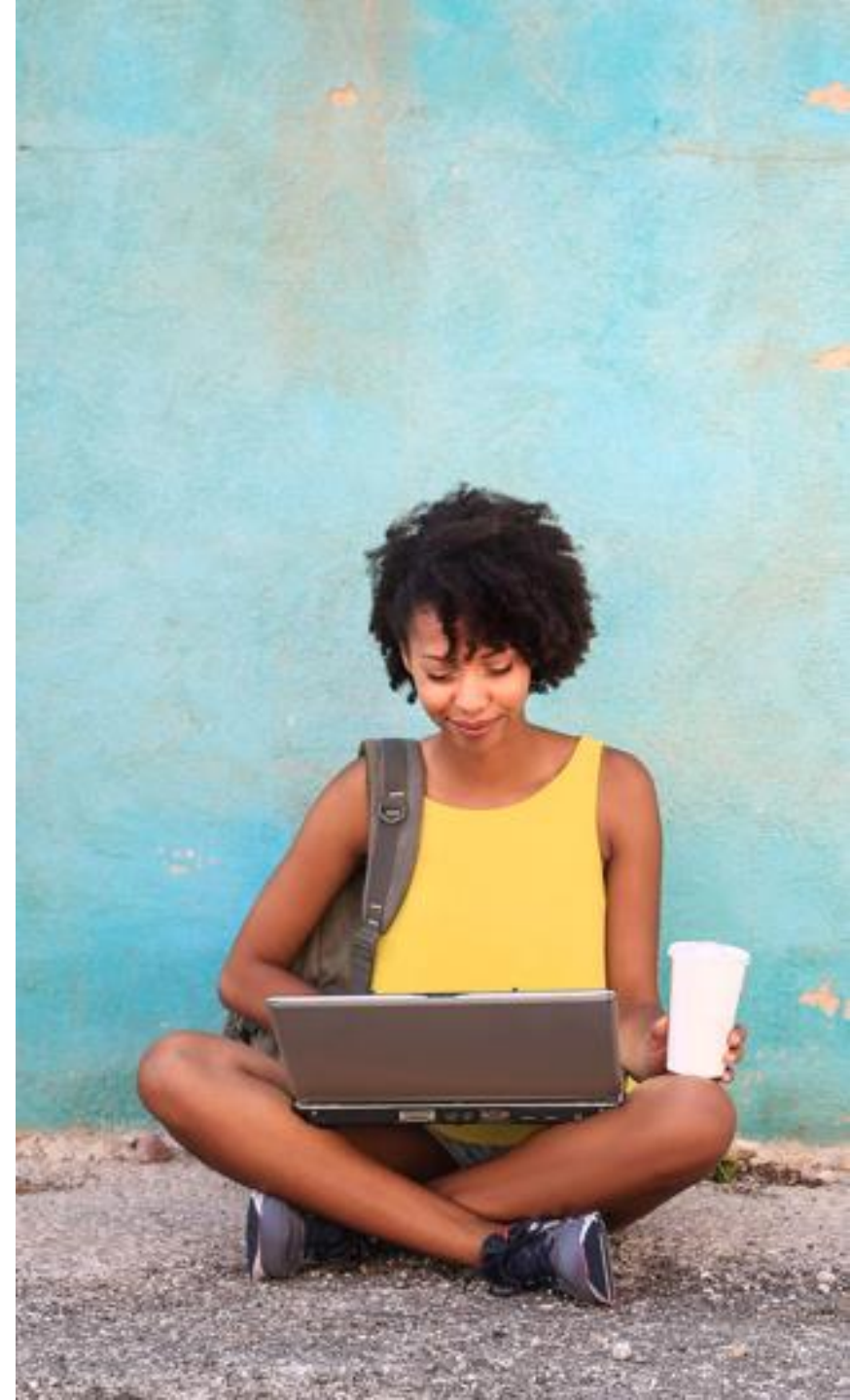
Wrap-up

IN THIS UNIT, YOU LEARNED

- What the declarative authorization approach of the CDS Data Control Language is
- How to create CDS roles to control the access to data

NEXT UNIT

- Week 3
Enabling the Transactional Behavior of an App



Implementing Basic Authorizations

Further reading

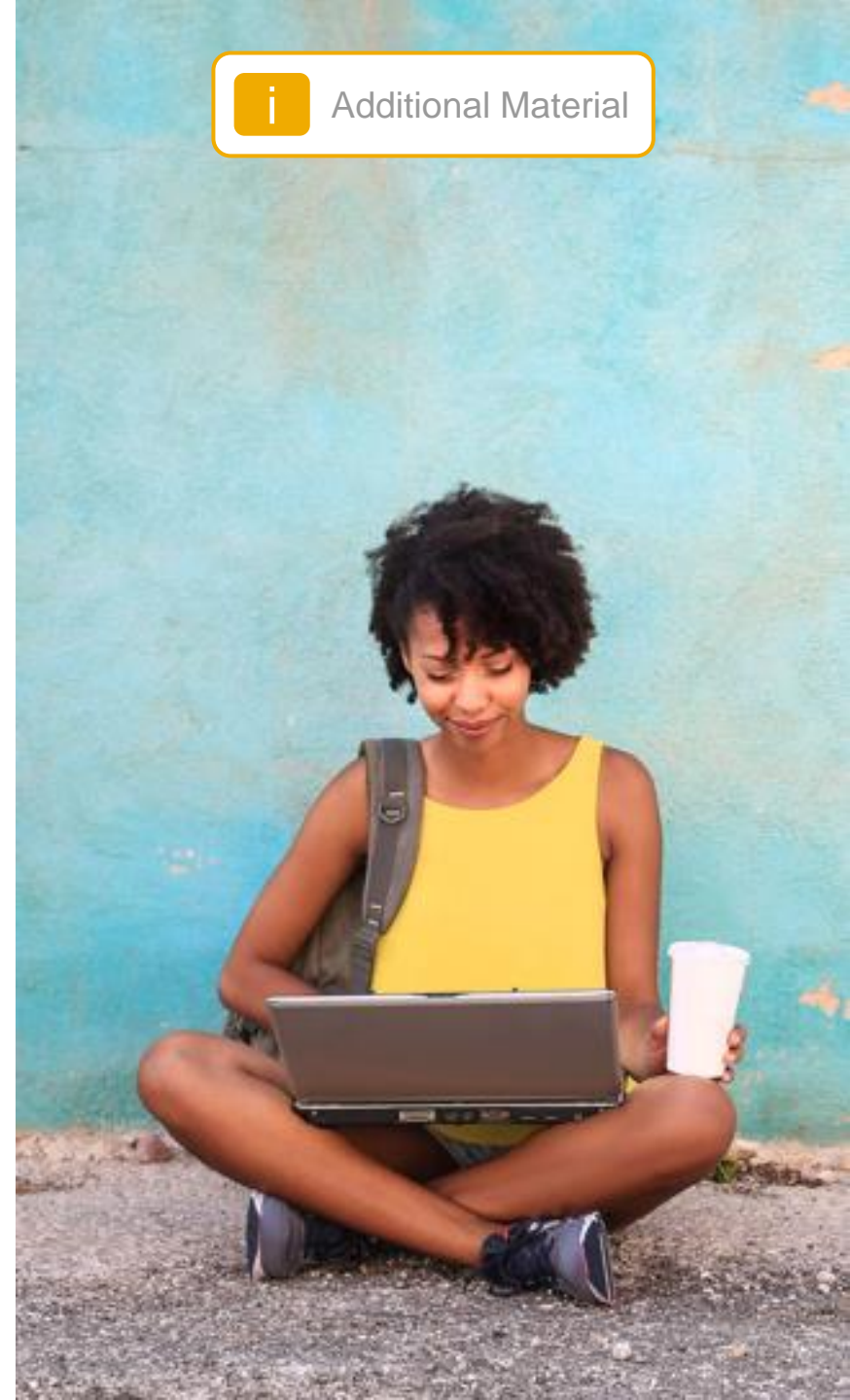


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