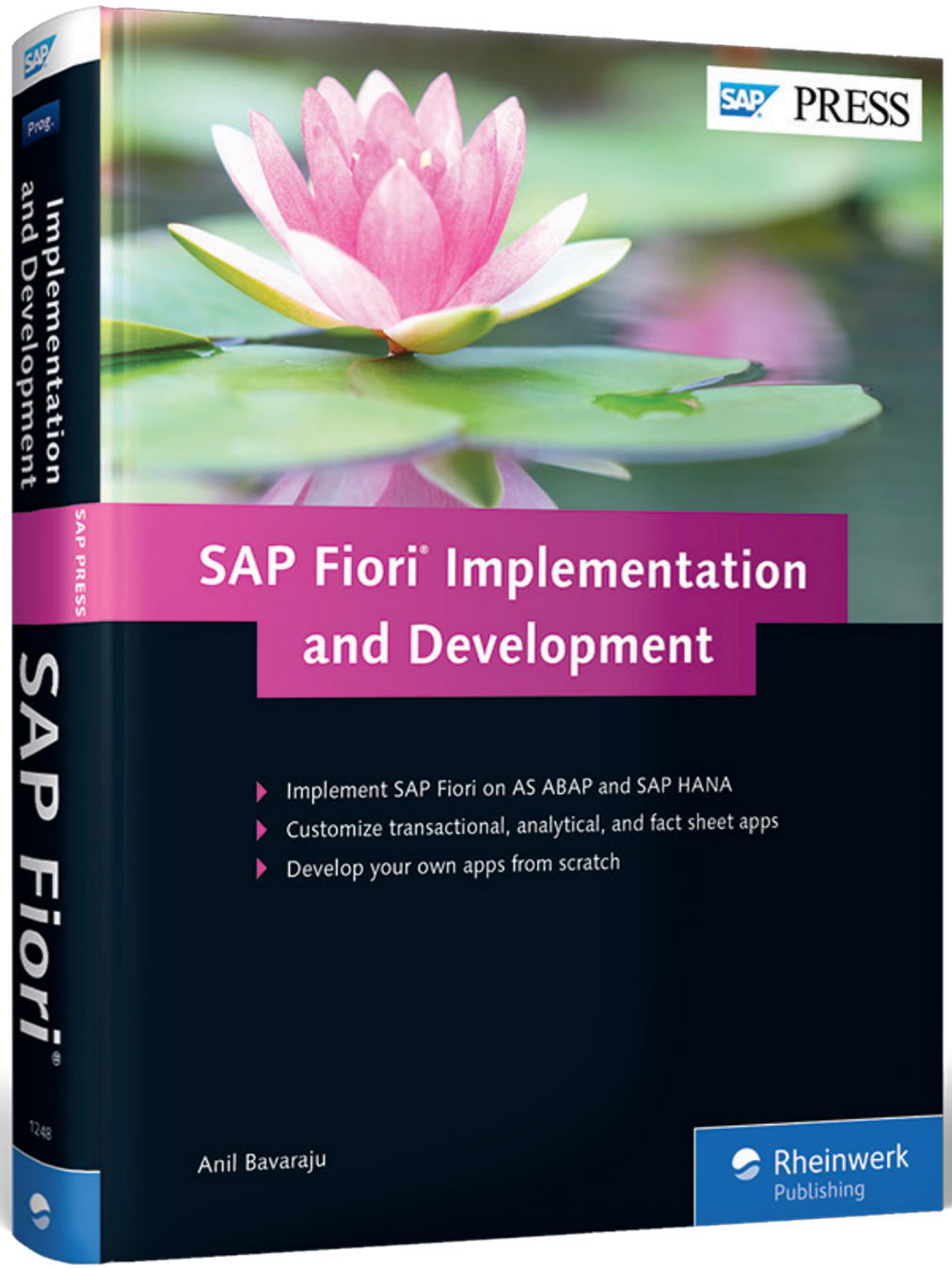

Reading Sample

SAP Fiori provides three types of apps: transactional, fact sheet, and analytical. Prior to developing and extending these apps, they must be implemented on a database. Discover how to implement analytical apps on an SAP HANA database both with and without the SAP Smart Business Modeler. This chapter will outline the steps necessary to complete this process.

"Implementing Analytical Apps"

Contents

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This chapter walks you through implementing analytical apps with and without the SAP Smart Business Modeler.

6 Implementing Analytical Apps

In Chapter 1, we discussed the architecture and communication channels between different layers for analytical apps. In this chapter, we'll provide you with the step-by-step instructions involved in implementing analytical apps run on an SAP HANA database, which use virtual data models (VDM). We'll use an example based on the Days Sales Outstanding app and the Profit Analysis app. However, these steps apply to most analytical app implementations.

In Section 6.1, we'll begin with an overview of the standard analytical apps and analytical apps that are created using SAP Smart Business Modeler, which are enriched analytical apps with real-time key performance indicator (KPI) data that are designed for specific business roles. We'll include in our discussion the SAP Fiori roles for different lines of business (LOBs). We'll then look at the prerequisites that need to be covered prior to the Days Sales Outstanding app implementation in Section 6.2, before diving into the KPI modeling steps.

In Section 6.3, we'll discuss the SAP Smart Business Modeler and model a KPI using an example based on the Days Sales Outstanding app. In addition, we'll cover the technical aspects of the SAP Smart Business Modeler and show you how to leverage them in conjunction with an analytical app. You'll then learn how to create a generic drilldown application using the SAP Smart Business Modeler. At the end of this section, we'll show you how to create your own catalogs and groups to enable the app.

In Section 6.4, we'll introduce you to analytical apps that don't require the SAP Smart Business Modeler to implement them. We'll use an example based on the Profit Analysis app and provide high level steps on how to implement them. As previously mentioned, these steps apply to most analytical apps that don't use the SAP Smart Business Modeler.

6.1 Overview

SAP Fiori analytical apps are the new user experience (UX) for SAP Business Suite powered by SAP HANA and are developed using SAPUI5. These apps allow real-time insights into your business by displaying KPIs, allowing you to make faster, better decisions. In this chapter, we'll show you how to configure both analytical app types with examples based on the Days Sales Outstanding app and the Profit Analysis app, respectively.

There are two types of apps under the analytical umbrella:

- **Analytical apps (non-smart apps)**
  These apps provide real-time information on large volumes of data.
- **Analytical apps designed using SAP Smart Business Modeler**
  These apps closely monitor the most important KPIs. SAP Smart Business apps are analytical apps that offer drilldown capabilities based on the SAP Smart Business framework.

In Chapter 1, we discussed SAP Fiori roles for different LOBs. For example, under the SAP UX for Finance LOB, you have accounts payable, accountant, cash manager, GL accountant roles. Certain apps can be configured for each of these roles. Figure 6.1 shows an SAP Smart Business product called SAP Smart Business for SAP S/4HANA Finance (formerly SAP Smart Business for SAP Simple Finance). These products contain one or more analytical apps. Similarly, for each LOB, there are different SAP Smart Business products.

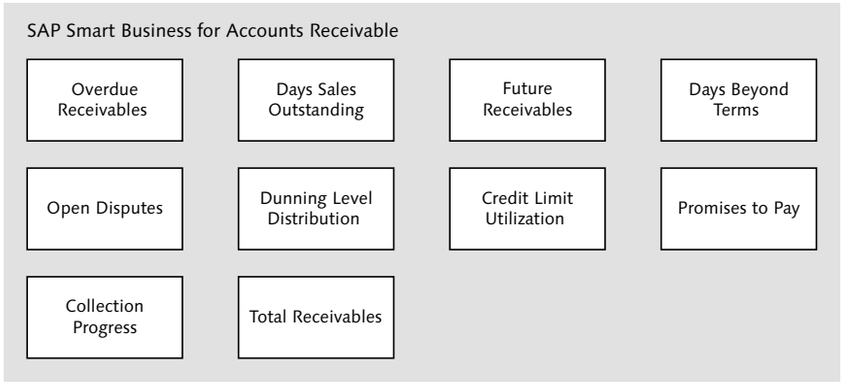

Figure 6.1 SAP Smart Business for SAP S/4HANA Finance

These apps provide real-time insight into your business. For example, Figure 6.1 shows your company's collection progress, days sales outstanding, and other KPIs. You'll be able to further drill down from this KPI or operational performance indicators (OPIs) to a detailed analysis. In the next section, we'll show you how to model a KPI or OPI and how to drill down from that KPI tile.

What Are KPI and OPI?

Both KPIs and OPIs refer to the vital metrics of an aspect of your business from different perspectives that are crucial to the success of your business. KPIs look at board categories such as the sales of a particular region, and OPIs focus on a specific measure of a specific function or operation, for example, orders processed per shift.

The following are some of the key benefits of analytical apps designed using the SAP Smart Business Modeler (smart apps):

- They offer role-based access to all relevant information, such as KPIs, OPIs, news feeds, specific tasks, trends, and alerts.
- You can easily build your own KPI with the threshold values and color-coded visualizations.
- You can create a drilldown from one application to another, to an SAP Lumira storyboard, or to an SAP BusinessObjects Design Studio application.
- They provide end-to-end insight into action scenarios, including simulation and forecasting.

We've covered some of the basic concepts of analytical apps. Before you enable and implement these two types of analytical apps, let's review some of the prerequisites.

6.2 Implementation Prerequisites

A number of prerequisites need to be fulfilled prior to implementation to configure the analytical apps. In Chapter 2, Section 2.5.3, we covered all the components that have to be installed on SAP HANA and the ABAP frontend and backend servers.

The following is a quick checklist of components that should be installed and configured in your system:

- Install the KPI framework on the ABAP frontend server
- Enable the KPI framework on the SAP HANA server
- Install SAP Gateway on the ABAP frontend server
- Install the central UI components
- Install the following SAP Smart Business products on the ABAP frontend server:
  - SAP Smart Business for CRM 1.0
  - SAP Smart Business for FCC 1.0
  - SAP Smart Business for ERP 1.0
  - SAP Smart Business for GRC 1.0
  - SAP Smart Business for EM 1.0
  - SAP Smart Business for TM 1.0
- Configure the SAP Web Dispatcher
- Install the SAP HANA Application Lifecycle Manager (HALM)
- Enable SAP HANA authentication and single sign-on (SSO)
- Assign the PFCG role /UI2/SAP_KPIMOD_TCR_S to your frontend user
- Assign the role, sap.hba.r.sb.core.roles::SAP_SMART_BUSINESS_MODELER, to your SAP HANA user to access the SAP Smart Business Modeler

Important!

You have to implement the SAP Notes that are required for every specific app. Refer to the app-specific online help at *http://help.sap.com/fiori*.

By now, you know that analytical apps run on an SAP HANA database that houses the KPI data. For the users to access the data from the SAP HANA database, you need to provide access to SAP HANA from the ABAP frontend server. For that, you need to enable user access to the KPI data (see Chapter 3, Section 3.2 and Section 3.3).

There are two ways to implement analytical apps, and the implementation differs according to the type of app that you want to use:

- **Analytical apps launched using the KPI tile**
  For these types of apps, you can either model your KPI or use predefined KPIs with the SAP Smart Business Modeler apps. In addition, you can even configure a generic drilldown using a predefined template or a custom drilldown. We'll cover this implementation method in Section 6.3.
- **Analytical app that uses the app launcher tile**
  App-specific content is provided for these types of apps. This content defines what to display and how to display it in SAP Fiori Launchpad. You can't adapt or configure the information displayed by these apps. We'll cover this implementation method in Section 6.4.

We'll begin by implementing analytical apps using the SAP Smart Business Modeler.

6.3 Analytical Apps with the SAP Smart Business Modeler

The SAP Smart Business Modeler is a tool delivered as part of the SAP Smart Business suite. This tool allows you to model KPIs and report tiles that enable targeted monitoring of key business data using SAP Fiori Launchpad.

You can define KPIs and reports in the SAP Smart Business Modeler to which you can apply different evaluations so that you can respond to the ever-changing business landscape. You can even add additional perspectives on the relevant data with drilldown views that are accessed through the KPI tile.

Analytical apps using the SAP Smart Business Modeler are launched via KPI tiles. The Days Sales Outstanding app allows users to filter and drill down by various dimensions, and then check the days sales outstanding by customer country and company code. As you did with the transactional and fact sheet apps chapters, refer to the SAP Fiori apps reference library for the app that you'll be implementing in the next section.

In the next sections, we'll show you how to create a Days Sales Outstanding analytical app using the SAP Smart Business Modeler and how to add a drilldown from the KPI tile with step-by-step instructions. The first step is to create a KPI.

6.3.1 Create the KPI

The first task is to create a KPI by following these steps:

1. Log in to SAP Fiori Launchpad.
2. Click the CREATE KPI app under the KPI MODELER group (see Figure 6.2).

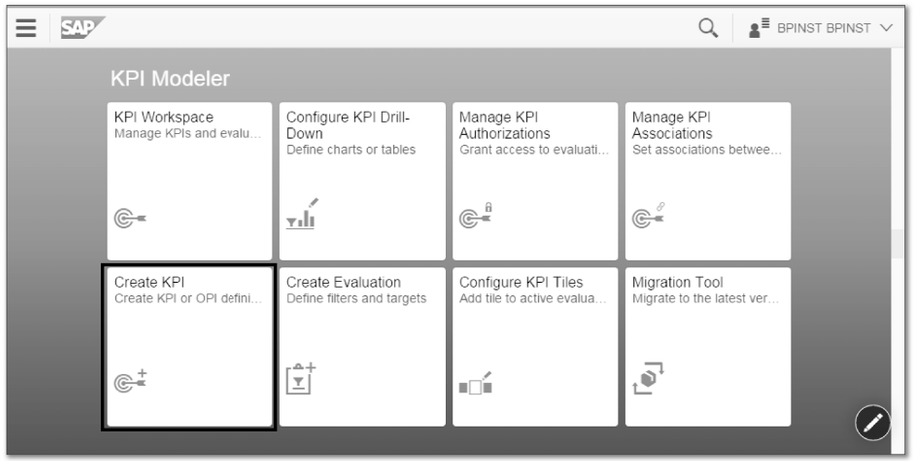

Figure 6.2 Create KPI

KPI Modeler Group

If you don't see the KPI modeler group in SAP Fiori Launchpad, then refer Chapter 2, Section 2.6.4, and grant user access to the KPI modeler.

3. In the next screen, you need to fill in the following mandatory details about the KPI (see Figure 6.3):
   - ID: This has to be a unique ID for the KPI; you can either use the auto-generated ID or use a standard naming convention depending on your business. For this, we chose SAP.PRESS.DAYSSALESOUTSTANDING.
   - TITLE: Enter a meaningful name because this appears in the tile header at runtime. Here we entered "Days Sales Outstanding (KPI)".
   - DESCRIPTION (optional): Enter "Total Days Sales Outstanding for the last 12 months".
   - TYPE: Choose KEY PERFORMANCE INDICATOR (KPI).

   - GOAL TYPE: This indicates which kind of KPI value is meaningful for the application. Choose from three options:
     - MAXIMIZING (HIGHER IS BETTER): Higher the better; for example, profit-related KPI values are higher the better.
     - MINIMIZING (LOWER IS BETTER): Lower the better; for example, cost-related KPI values are lower the better.
     - TARGET (CLOSER TO TARGET IS BETTER): Closer value is to the target is better, for example, attrition rate.

     Here we chose MINIMUM (LOWER IS BETTER).
   - TAGS (optional): Enter these to more easily search for your KPI.
   - OWNER NAME (optional): Enter the name of the person responsible for executing the KPI.
   - OWNER ID AND EMAIL (optional): Enter the details of the owner.

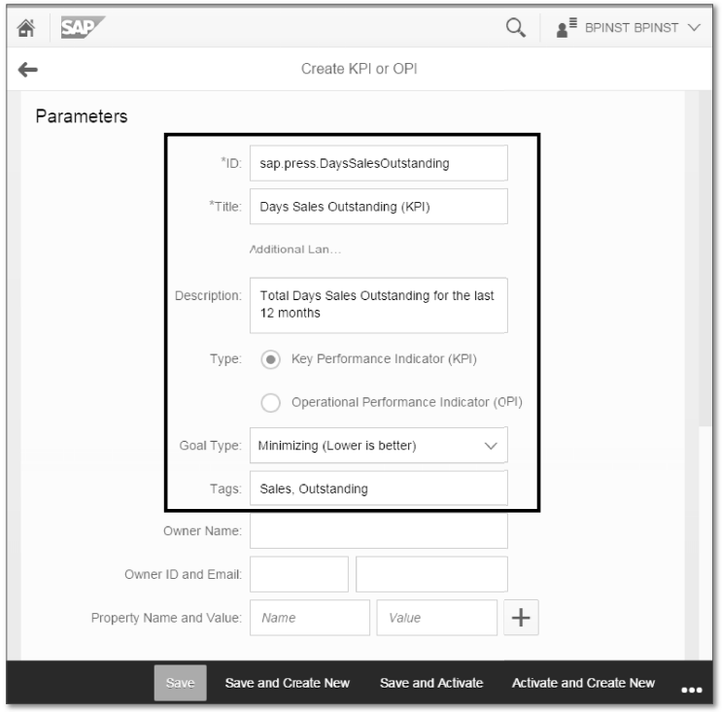

Figure 6.3 KPI Parameters

4. Scroll down to the next section, and select the values by clicking (see Figure 6.4).

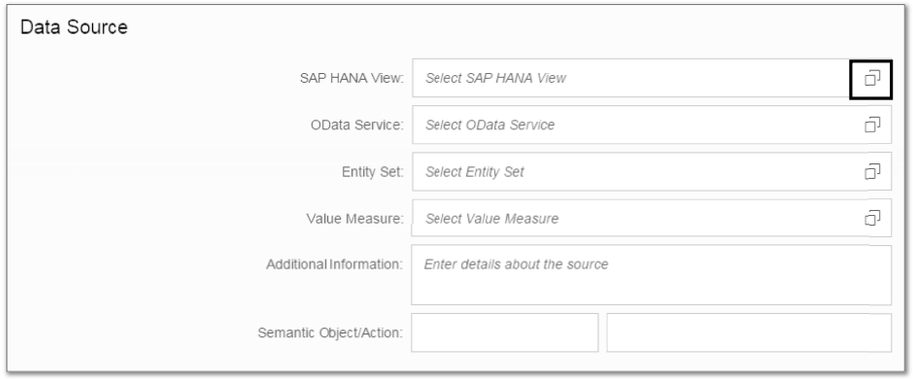

Figure 6.4 Data Source

5. The following fields are displayed in Figure 6.4:
   - SAP HANA VIEW: This is the source for this Days Sales Outstanding app. Select SAP.HBA.R.SFIN700.DAYSSALESOUTSTANDINGQUERY.
   - ODATA SERVICE: This is the path of the OData service responsible for aggregating the data. Enter "/sap/hba/r/sfin700/odata/ar/kpi.xsodata".
   - ENTITY SET: This provides input parameters for the SAP HANA calculation view. Enter "DaysSalesOutstanding".
   - VALUE MEASURE: Select only one value from this dropdown. Again, select DAYSSALESOUTSTANDING.
   - ADDITIONAL INFORMATION (optional): You can enter additional information about the data source in this field.
   - SEMANTIC OBJECT/ACTION (optional): You can leave this blank because you're using the default drilldown feature of SAP Smart Business apps.
6. After the fields have been entered, click ACTIVATE AND ADD EVALUATION.

6.3.2 Create Evaluations of the KPI

An *evaluation* defines what information about the KPI or report is visible to the user at runtime. It's a combination of variant/filters, thresholds, parameters, trends, and authorizations that are applied to a KPI or a report. You can create and activate evaluations for the KPIs or OPIs. Several different evaluations can be applied to a single KPI or report.

Let's now create evaluations of the KPIs. Follow these steps:

1. Enter the values shown in Figure 6.5 in the PARAMETERS section.

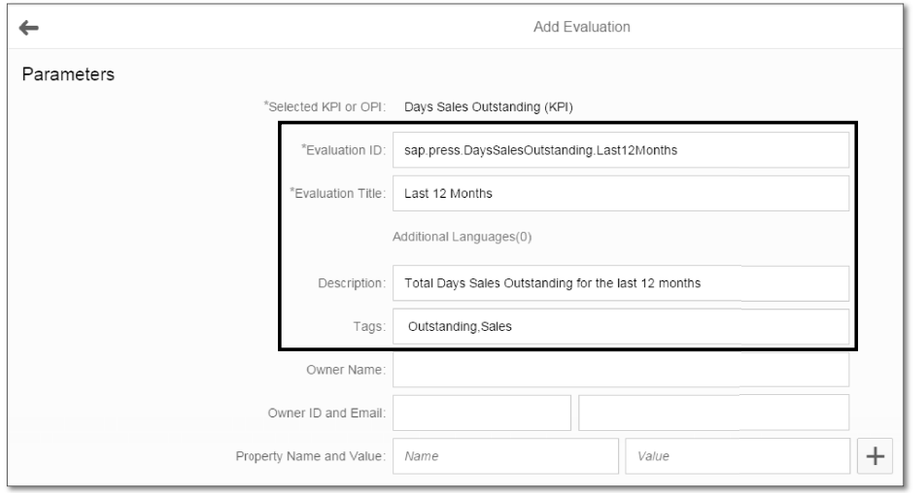

Figure 6.5 Evaluation Parameters

2. Scroll down and verify the DATA SOURCE fields. In this section, you have additional options (see Figure 6.6):
   - SCALING FACTOR: You can select the scaling factor based on the value that you're expecting:
     - AUTO: Value is scaled to the available space. We select this option.
     - K: Value is displayed in multiples of 1,000.
     - M: Value is displayed in multiples of 1 million.
     - B: Value is displayed in multiples of 1 billion.
     - T: Value is displayed in multiples of 1 trillion.

- Decimal Precision: You can choose appropriate decimal formats as well. Here we select Auto.

All the values that are configured in tiles, drilldowns, and tables for all measures of the selected evaluation are formatted by Decimal Precision. Only two decimal places are displayed to the right of the decimal point when the measure represents currency.

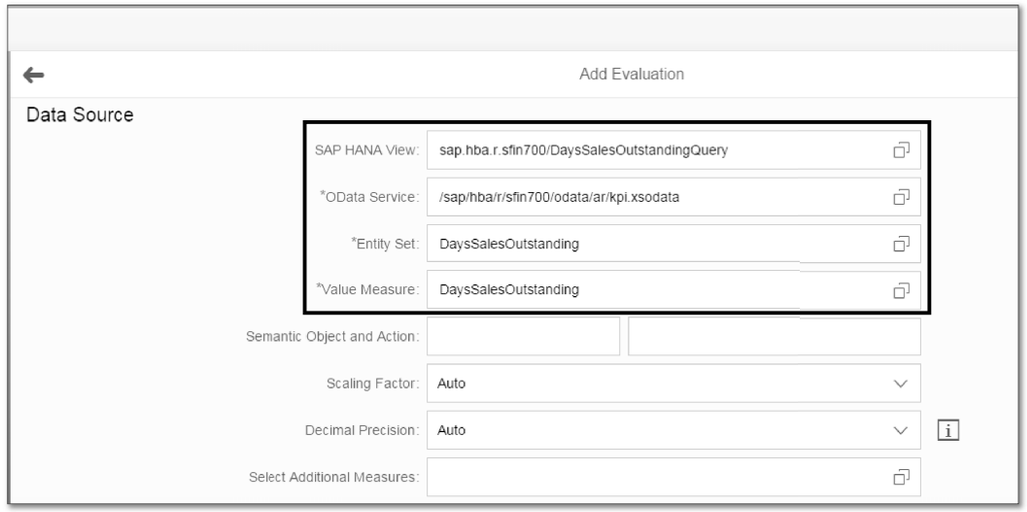

Figure 6.6 Evaluation Data Source

3. Next, you need to add variants/input parameters. A *variant* is a set of filter settings and input parameters that you define to achieve a particular perspective on a KPI or a report. Variants can be created without reference to a particular KPI or report because they are global in nature.
4. Scroll down to the Input Parameters and Filters section. Add the input parameters that are expected in the calculation view (see Figure 6.7):
   - P_DisplayCurrency Equal to USD
   - P_ExchangeRateType Equal to M
   - P_RevnRollingAverageMonths Equal to 1
   - P_RblsRollingAverageMonths Equal to 1

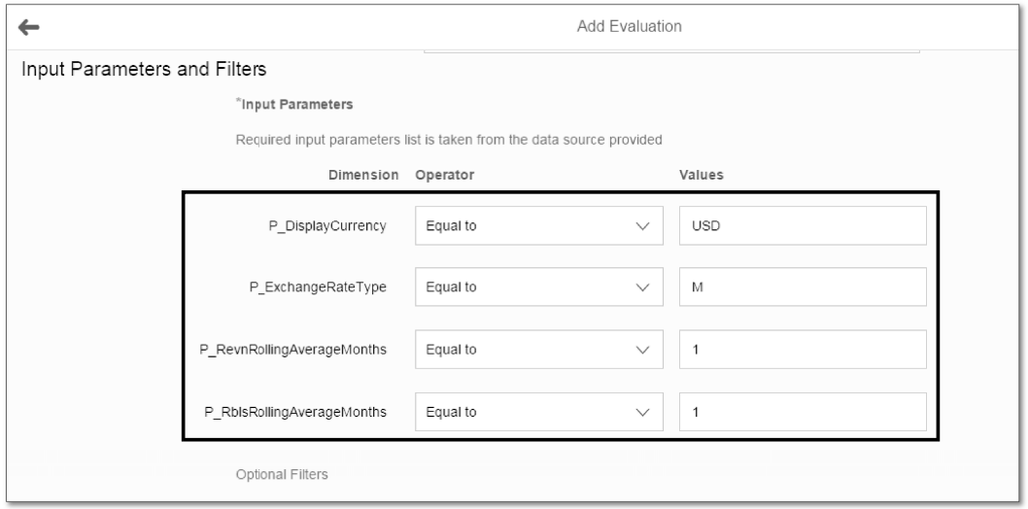

Figure 6.7 Input Parameters and Filters

5. Next, you need to add the Target, Thresholds, and Trend values. The thresholds defined for the KPI evaluation are determined by the Goal Type you selected for the KPI earlier in Figure 6.3:
   - Critical: "100"
   - Warning: "30"
   - Target: "10"

   Critical, Warning, and Target values are the threshold values of a KPI. These depend on the goal type selected previously. For example, if you select Lower is Better, then your Critical and Warning values should be high. Therefore, when the KPI value is above 100, the KPI value color turns red, and when the KPI value is below 29, the KPI value color turns green. When the color is yellow, this indicates that the KPI has a value between 30 and 99 (see Figure 6.8).
6. Click Activate and Configure Tile.

You've now successfully created the KPI with the evaluation and activated the evaluation. In the next step, you'll configure the KPI tile.

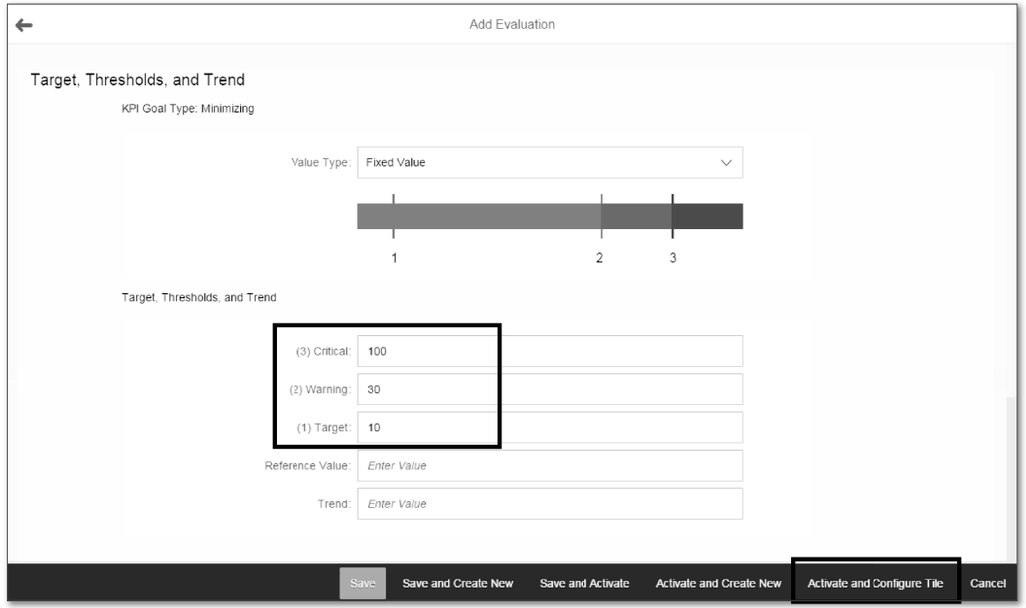

Figure 6.8 Target, Thresholds, and Trend

6.3.3 Configure the KPI Tile

A *KPI tile* is the graphical representation of the evaluation of the KPI, which is visible to the user at runtime. The KPI is displayed in a tile. When you click the tile in SAP Fiori Launchpad, you'll be able to drill down into the details. There are six types of KPI tiles:

- Numeric tile
  The aggregated value of the KPI measure of the evaluation that you created in Section 6.3.2 is displayed in the tile. In this tile, data is displayed in numeric format. The color of the value that is displayed depends on the threshold values, which you created with critical and warning values (see Figure 6.9).

Figure 6.9 Numeric Tile

- Deviation tile
  In this tile, data is displayed graphically in the form of a bullet chart that shows the current value of the KPI in relation to the target value and its thresholds (see Figure 6.10).

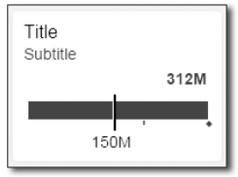

Figure 6.10 Deviation Tile

- Trend Tile
  For this title, data is displayed graphically in the form of a line chart showing the trend over time. You must enter a time dimension representing a duration to visualize this tile (see Figure 6.11).

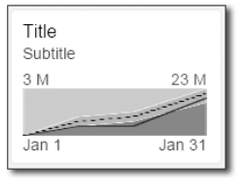

Figure 6.11 Trend Tile

- Comparison tile
  With this tile, you select a dimension to show the top KPI values in comparison to each other. For example, if you select "country" as a dimension, you see a comparison of the values for the countries contributing to this KPI (see Figure 6.12).

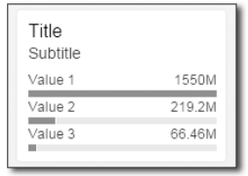

Figure 6.12 Comparison Tile

- Comparison tile multiple measures
  This tile is similar to the comparison tile, but instead of comparing dimensions, you compare different measures. You can select a maximum of three measures or at least two measures for this tile (see Figure 6.13).

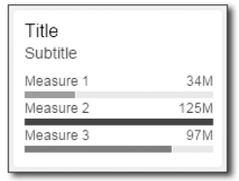

Figure 6.13 Comparison Tile Multiple Measures

- Dual tile
  This tile shows two tiles in one single tile. The left part of this tile always displays the numeric tile, and on the right side, you can select any chart that is supported (see Figure 6.14).

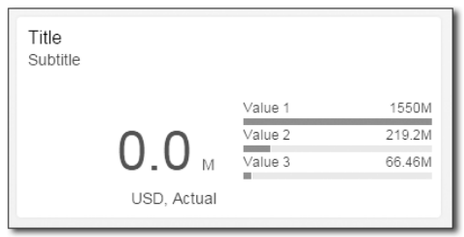

Figure 6.14 Dual Tile

Let's now look at how to configure a KPI tile using the numeric tile as an example:

1. After clicking Activate and Configure Tile in the previous step, you should see the screen shown in the Figure 6.15.
2. Select your evaluation, and click Add Tile.
3. Enter the following details as shown in Figure 6.16:
   - Tile Format: Select Numeric Tile from the dropdown list.
   - Title (KPI): Enter "Days Sales Outstanding (KPI)".
   - Subtitle (Evaluation): Enter "Last 12 Months".
   - Drill-Down: Choose Generic drill-down.

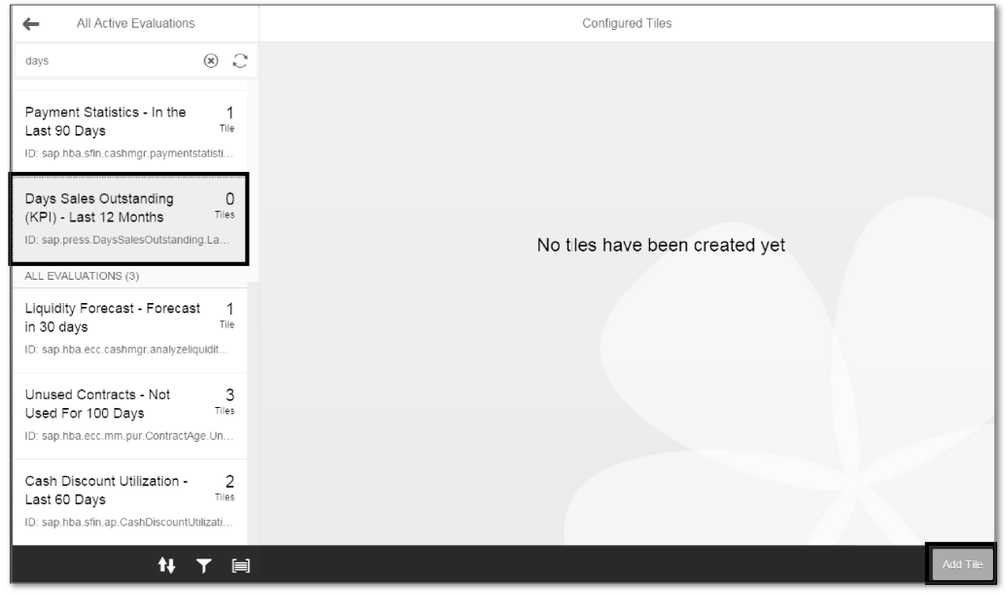

Figure 6.15 Configuring a Tile

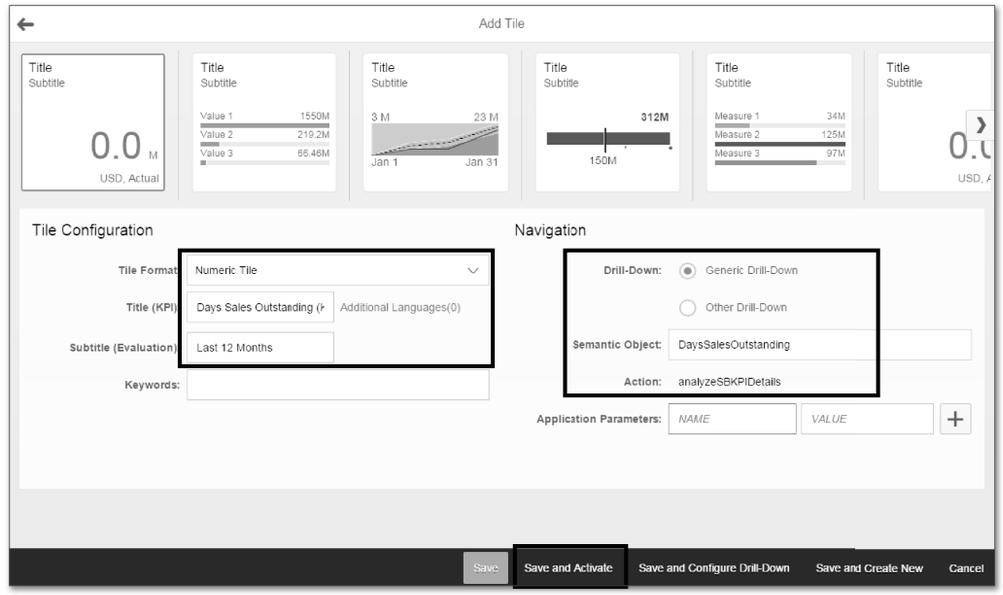

Figure 6.16 Tile Parameters

4. Click SAVE AND ACTIVATE.
5. Now go back to the home screen by clicking .

That's it! You've successfully created a KPI tile. Now users will see this KPI tile in SAP Fiori Launchpad. The next step is to create a generic drilldown, so that when users click on this tile it takes them to a detail level. A drilldown can be a generic drilldown application, which we'll be covering in the next section, or it can even be a drilldown to another application such as SAP Lumira or a custom application.

6.3.4 Configure the KPI Drilldown

When you click on a KPI tile, it will take you to a drilldown application. This is configured using the Configure KPI Drill-Down app. You can create your own drilldown applications with different kinds of charts, tables, and filters, and you can customize it with different colors as well. A drilldown application contains views with tables and charts. In this section, we'll look at configuring the KPI drilldown by creating views, configuring the KPI header, and creating filters.

Create Views

In this section, we'll show you how to create views using the dimensions and measures from the KPI evaluation. Follow these steps:

1. From SAP Fiori Launchpad, click the CONFIGURE KPI DRILL-DOWN app (see Figure 6.17).

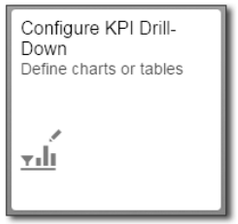

Figure 6.17 Configure KPI Drill-Down App

2. Select the evaluation, and click CONFIGURE (see Figure 6.18).
3. Follow these steps to add the first view LAST 12 MONTHS BY CUSTOMER COUNTRY.

4. Select the CUSTOMER COUNTRY from the DIMENSION list, and click OK (see Figure 6.19).

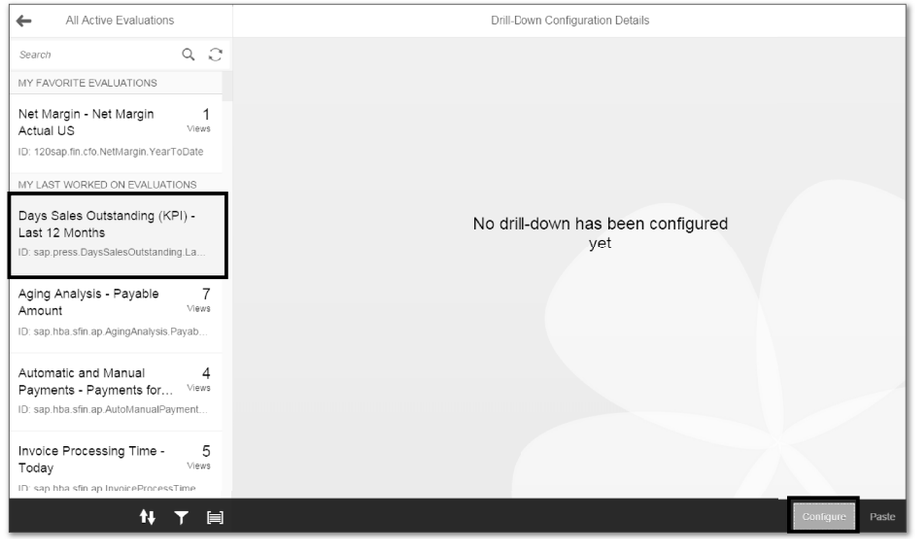

Figure 6.18 Configuring the Drilldown

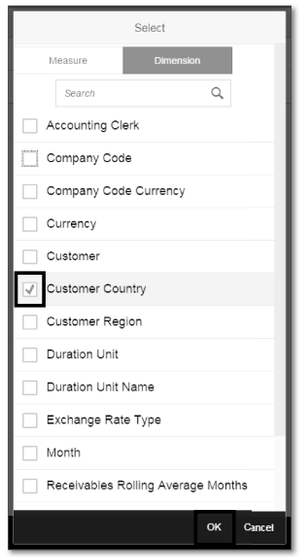

Figure 6.19 Selecting Dimensions

You should now see the dimension and the measure that you selected, as shown in Figure 6.20.

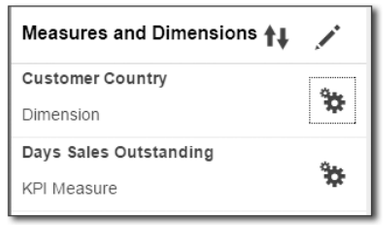

Figure 6.20 Selected Measures and Dimensions

5. You can sort the dimensions by clicking the Sort Order dropdown list (see Figure 6.21).

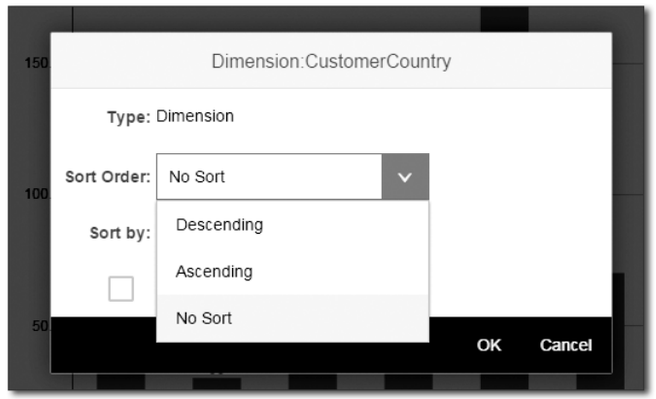

Figure 6.21 Dimension Settings

6. In addition, you can configure views to provide additional insights into the KPI data. You can add a chart, add a table, or add both. The available visualization types are Bar chart, Column chart, Line chart, Columns and Lines combination chart, Bubble chart, and Table, as shown in Figure 6.22.
7. You can further configure the charts by choosing different color schemes, selecting single or dual axis, and formatting the value that is displayed in the chart (see Figure 6.23).

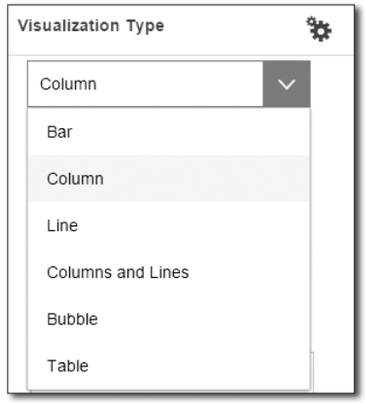

Figure 6.22 Selecting a Visualization Type

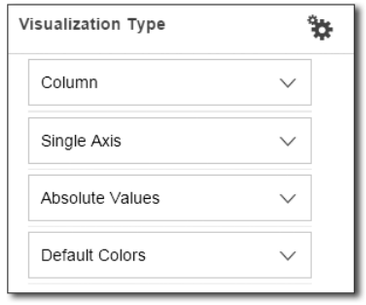

Figure 6.23 Additional Visualization Properties

8. As shown in Figure 6.24, enter or select the following fields:
   - Visualization Type: You can select the type of visualization that you want to add to the view. Here we selected Column.
   - View ID: Enter "sap.press.DaysSalesOutstanding.Last12Months.ByCustomerCountry".
   - View Title: This view name will be visible to the user during runtime. Select Last 12 Months by Customer Country.
   - Set Data Limit (optional): You can set the maximum number of records that can be retrieved during runtime.
   - Data: You can develop a view with the dummy data as well. Select Actual Backend Data.

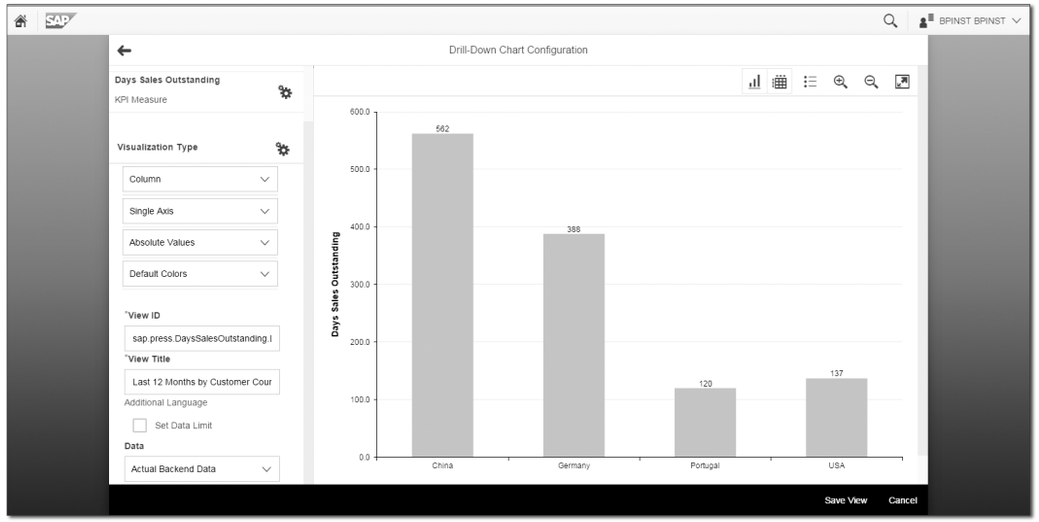

Figure 6.24 First View

9. Click SAVE VIEW.

Drilldown Application

You don't need to activate the drilldown application. Changes are available immediately as soon as you save the application.

We've successfully created the Last 12 Months by Customer Company view. You can create several views and switch between different views during runtime.

Let's add one more view: Days Sales Outstanding by Company Code. Follow these steps:

1. Click +, as shown in Figure 6.25.
2. Select the COMPANY CODE from the DIMENSION list, and click OK (see Figure 6.26).

Figure 6.25 Adding a View

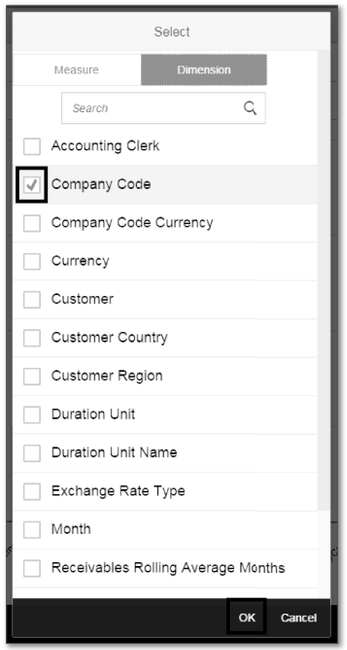

Figure 6.26 Dimensions

3. Enter the following details as shown in Figure 6.27:
   - Visualization Type: Choose Column.
   - View ID: Enter "sap.press.DaysSalesOutstanding.Last12Months.ByCompanyCode".
   - View Name: Enter "Last 12 Months by Company Code".
4. Click Save View.

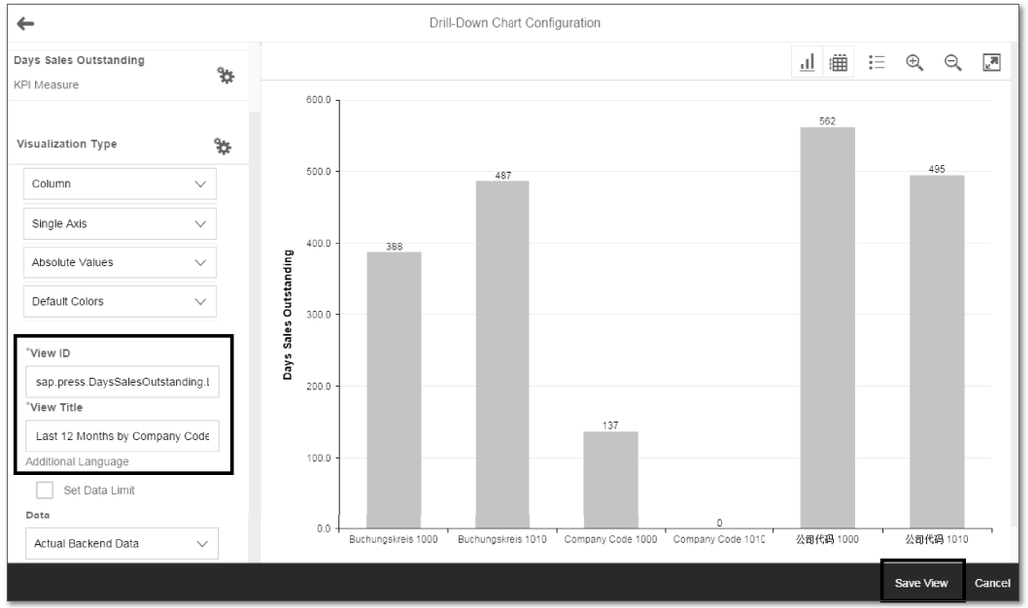

Figure 6.27 View Details

With these views, you can analyze data in several formats and with different selection criteria to allow for better insight into the business processes from different perspectives.

Configure the KPI Header

In the previous section, you created two views in the drilldown app. The next step in this process is to configure the KPI header. The *KPI header* is the header area of the KPI drilldown app. You can add mini charts in the header section, and these mini charts can be created on multiple measures.

Follow these steps:

1. Click + from the header section, as shown in Figure 6.28.

Figure 6.28 Adding a KPI Header

2. Select a Mini Chart; in this example, we selected Actual Vs Target (see Figure 6.29).

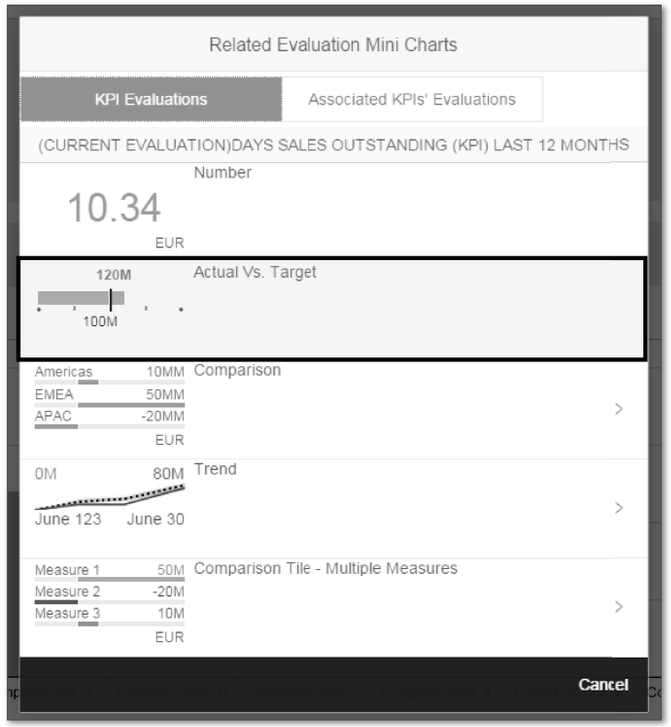

Figure 6.29 Selecting a Mini Chart

Create Filters

The next available option is to create filters. You can specify up to five filters that allow you to look at the drilldown data from different perspectives. Follow these steps:

1. Click to add filters.
2. Select the Currency, Customer, and Customer Region filters (see Figure 6.30).

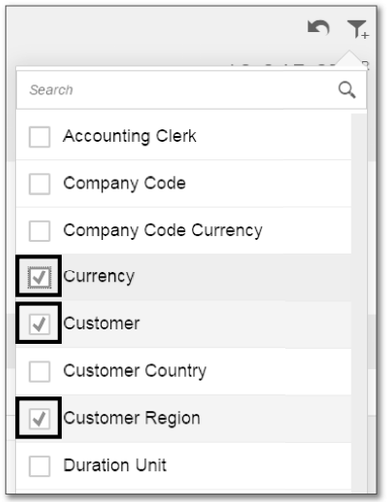

Figure 6.30 Selecting Filters

3. Click Save Configuration.

You've now successfully created a numeric KPI tile with the evaluation and created a drilldown with two views. The KPI tile is now ready to be made available to users on SAP Fiori Launchpad.

6.3.5 Assign Roles to Users to Access SAP HANA Data

Users launch analytical apps from SAP Fiori Launchpad, and then the SAP Web Dispatcher directs the OData request from the client to SAP HANA XS. Both the data and the KPI definitions are stored in the SAP HANA system. So for the users to access the data and the KPI definitions from the SAP HANA system, you need to ensure that they are given the correct access rights.

In Chapter 2, we gave you an overview of the SAP Fiori architecture with the SAP HANA XS landscape. SAP HANA XS contains the SAP Fiori app content, KPI modeling framework, generic drilldown, and the VDM reuse content. SAP HANA XS reads data from the SAP HANA database. Using the OData services that require authorizations (i.e., SAP HANA privileges), these privileges are grouped together in roles, and these roles are assigned to SAP HANA database users.

There are certain generic roles that must be assigned to all users. In Chapter 2, we discussed these roles in greater detail. Besides generic roles, SAP delivers a role for each analytical app, which includes all app-specific privileges as well. For the users who need access to a specific app, you need to assign this app-specific role to the user.

SAP HANA Role

For more information on the SAP HANA role for a specific app, refer to the app-specific documentation.

Figure 6.31 shows the Days Sales Outstanding app-specific role that has to be assigned to the user for the user to read the KPI data from the SAP HANA system.

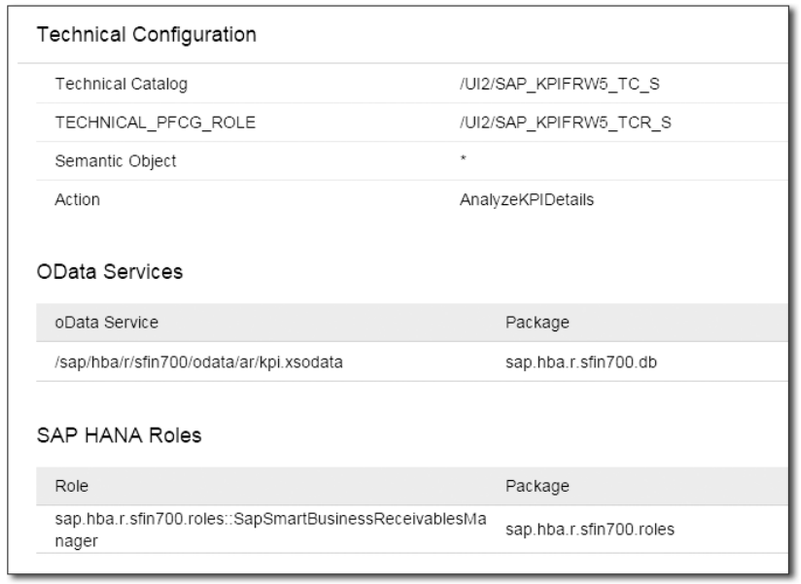

Figure 6.31 App-Specific Configuration Details

To assign this role to a specific user in the SAP HANA system, follow these steps:

1. Log in to SAP HANA Studio.
2. Under the SAP HANA system (HDB SYSTEM), choose SECURITY • USERS.
3. Double-click the user name (see Figure 6.32).

Figure 6.32 SAP HANA Users

4. Click the + button on the GRANTED ROLES tab (see Figure 6.33).

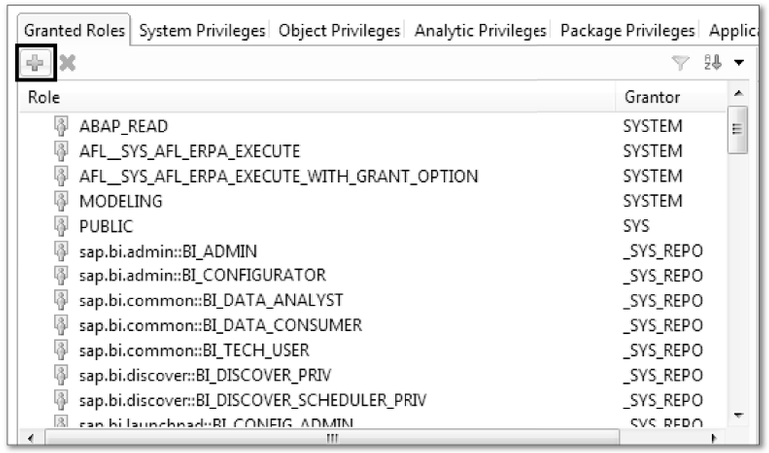

Figure 6.33 Granted Roles

5. Search for and then select the SAP.HBA.R.SFIN700.ROLES::SAPSMARTBUSINESSRECEIVABLESMANAGER role, and then click OK (see Figure 6.34).

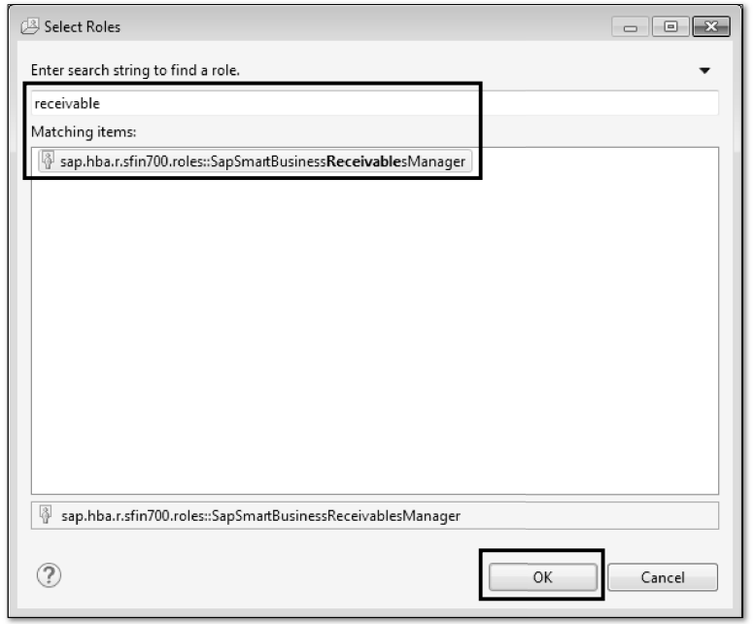

Figure 6.34 Selecting the Role

6. Click the DEPLOY icon to save the changes.

You've successfully enabled the user to access data from the SAP HANA database.

6.3.6 Activate the SAPUI5 Application for Generic Drilldown

We've discussed how to model a KPI using an example Days Sales Outstanding app. You then created a drilldown app that can launched from the Days Sales Outstanding KPI tile. The app is now ready to be enabled on SAP Fiori Launchpad. By now, you must be familiar with activating the Internet Communication Framework (ICF) service.

For every transactional app and fact sheet app, there is an app-specific SAPUI5 application that has to be activated on the frontend server. However, for analytical apps, there is just one service that needs to be activated. For all the generic

drilldown applications, the ca_kpi service has to be activated on the frontend server. Figure 6.35 shows the application details from the online help page.

Front-End Server: Activate SAP UI5 Application

SAP UI5 Application	Technical Name
Generic Drill-down Application	/sap/bc/ui5_ui5/sap/ca_kpi

Figure 6.35 SAPU15 Application

Note

This step is performed only once; you don't have to reactivate it every time you implement an analytical app.

Follow these steps to activate an ICF service:

1. Run Transaction SICF.
2. Search for the service name CA_KPI under DEFAULT_HOST • SAP • BC • UI5_UI5 • SAP.
3. Right-click on the service, and click ACTIVATE.

6.3.7 Assigning Authorizations to Users

The next step is to assign authorization for users/roles to access the evaluations. To do so, follow these steps:

1. From SAP Fiori Launchpad, click the MANAGE KPI AUTHORIZATIONS app (see Figure 6.36).

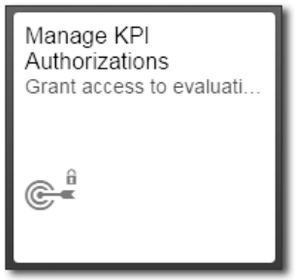

Figure 6.36 Authorizations

2. Select the evaluation, and click AUTHORIZE USERS AND ROLES (see Figure 6.37).

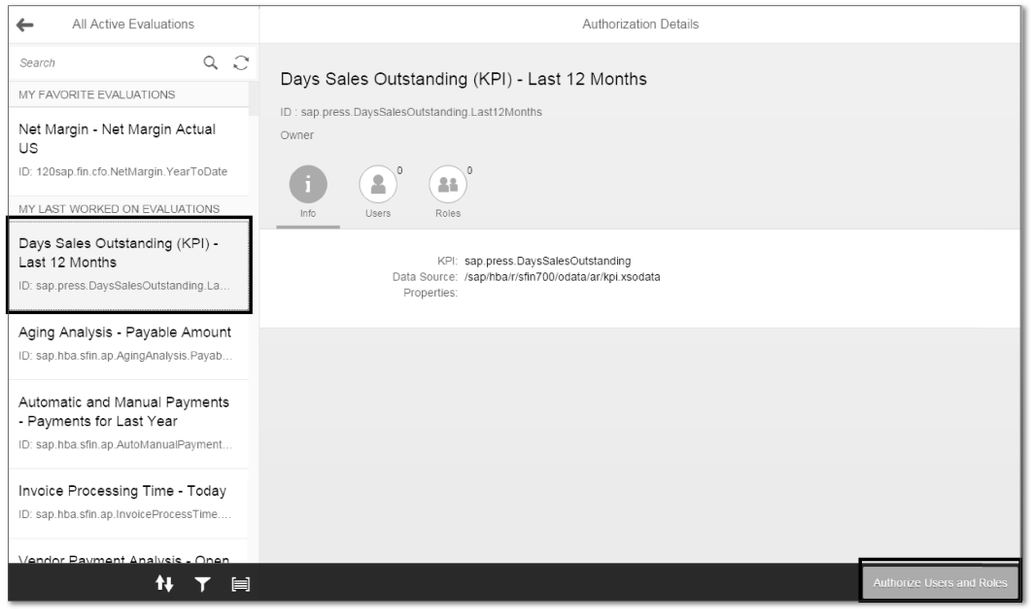

Figure 6.37 Adding Users or Roles

3. You can switch between users and roles by selecting the USERS or ROLES icons. Then select the USER/ROLE by clicking the checkbox next to the role/user name (see Figure 6.38).
4. Click SAVE.

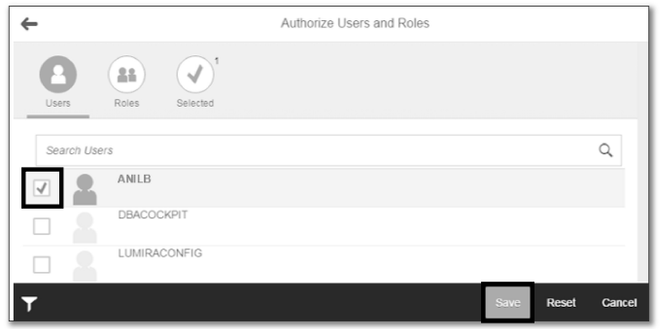

Figure 6.38 Selecting Users or Roles

6.3.8 Enable the App for Access in SAP Fiori Launchpad

After the ICF service is activated, the next step is to assign authorizations to the user to access the SAP KPIs catalog in SAP Fiori Launchpad. By now, you know that SAP Fiori Launchpad is the entry point for SAP Fiori apps. For users, SAP Fiori Launchpad displays the apps that have been assigned to the catalog designated for a user's role. So, users who have the role SAP_KPIFRW4_TCR_S assigned to their user ID will have access to the KPI's catalog.

Using Transaction PFCG (Role Maintenance), you can grant access to a user to the role SAP_KPIFRW4_TCR_S. This role allows the user to view all the analytical apps that are activated using the SAP Smart Business Modeler. You may want to refer Chapter 4, Section 4.3.3, on how to add roles to a user. Figure 6.39 shows the role assigned to an end user using Transaction PFCG.

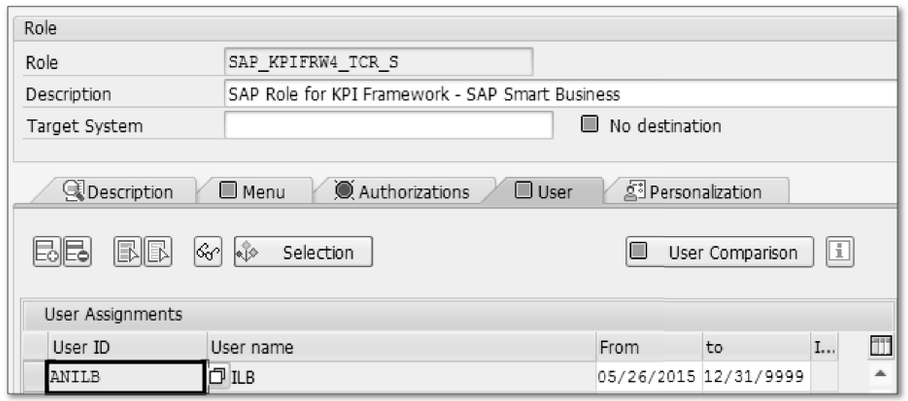

Figure 6.39 Adding a User to the Role

You've successfully assigned the SAP standard role to a user who now has access to all the analytical apps. You created the Days Sales Outstanding app with the SAP Smart Business Modeler, and all the analytical apps that are created using the SAP Smart Business Modeler are automatically added to the predefined KPIs catalog in SAP Fiori Launchpad. After you activate the app in the SAP Smart Business Modeler, it's automatically added to the KPI Catalog category.

Follow these steps to add the app to SAP Fiori Launchpad:

1. Log in to SAP Fiori Launchpad with the Test ID you accessed in the previous step (see Figure 6.39).

2. Click the Tile Catalog button on the bottom left of the screen.
3. Select SAP: KPIs from the catalog dropdown list, as shown in Figure 6.40.

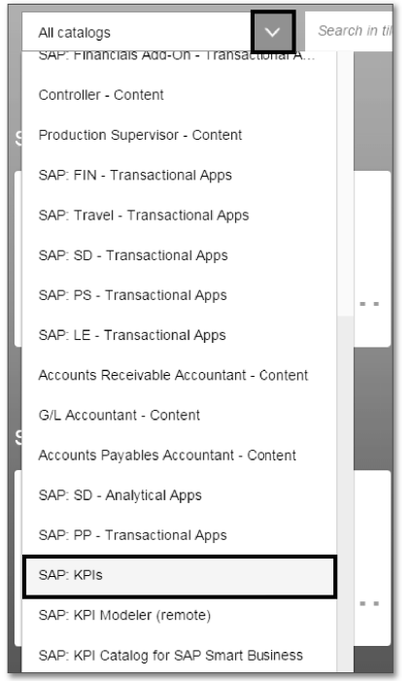

Figure 6.40 SAP KPIs Catalog

You should then see the app that you created and activated in previous steps (see Figure 6.41).

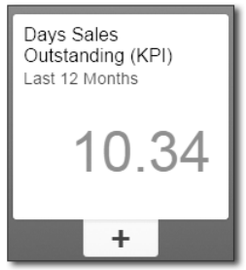

Figure 6.41 Days Sales Outstanding Custom App

4. Click on the +, and add the app to your My Home group by checking the box, and then click OK (see Figure 6.42).

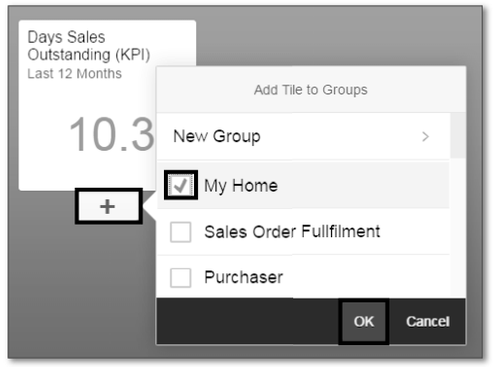

Figure 6.42 Adding an App to a Group

5. Now go back to the home screen by clicking the button.
6. You should now see the Days Sales Outstanding app under the My Home group, as shown in Figure 6.43.

Figure 6.43 My Home Group

7. Click the app to see the two views you created previously (see Figure 6.44).

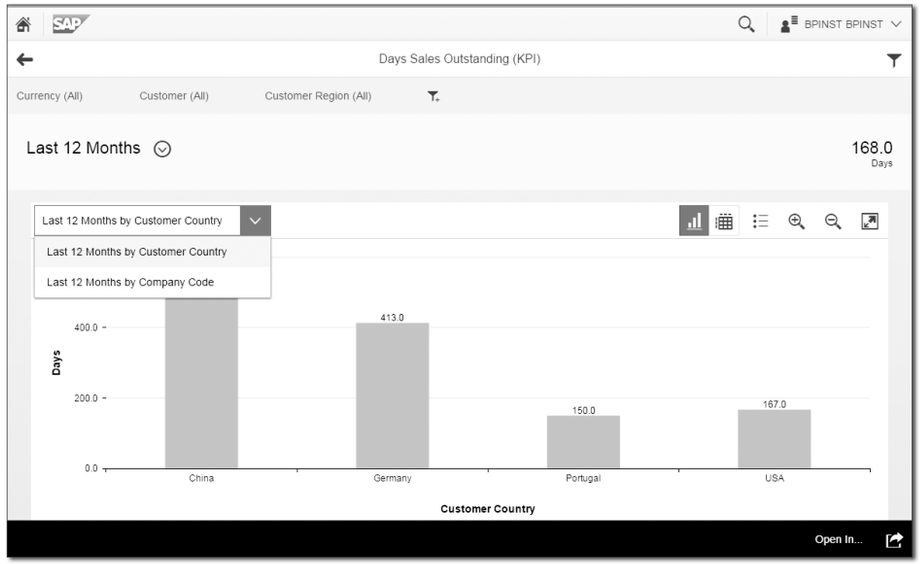

Figure 6.44 App with the Custom Views

8. Toggle between the table and chart by clicking the buttons above the chart.
9. In addition, zoom in, zoom out, or view this app in full screen by using the buttons shown in Figure 6.45.

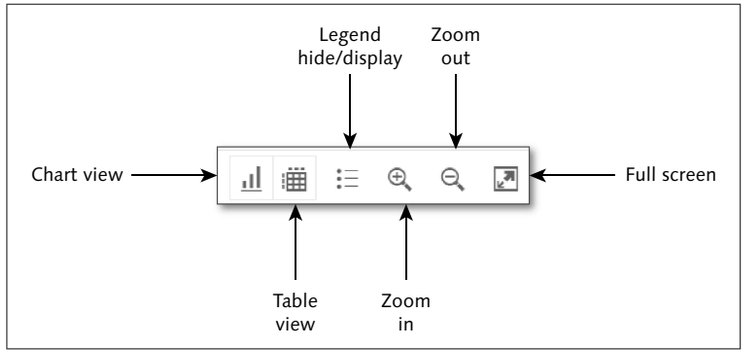

Figure 6.45 View Features

You should now understand the basics of creating an analytical app with the SAP Smart Business Modeler and how to grant access to the users. In the next section, we'll discuss a more advanced topic: assigning an app using a custom role.

6.3.9 Assign the App Using a Custom Role

In a real-world scenario, you wouldn't want to give access to all analytical apps to your users (i.e., any user who is assigned to the role SAP_KPIFRW4_TCR_S will have access to all the apps). In this section, we'll show you how to create a custom catalog and role to give access to specific analytical apps in SAP Fiori Launchpad.

In Chapter 4, Section 4.6, we discussed how to create a custom catalog and custom role for a transactional app. You'll be following a similar process for non-smart analytical apps.

To enable your app with custom roles and catalog, you must complete the following steps:

1. Log in to your ABAP frontend server, and run Transaction LPD_CUST.
2. Create a new launchpad by clicking the New Launchpad button.
3. Enter the fields as shown in Figure 6.46, and click Confirm.

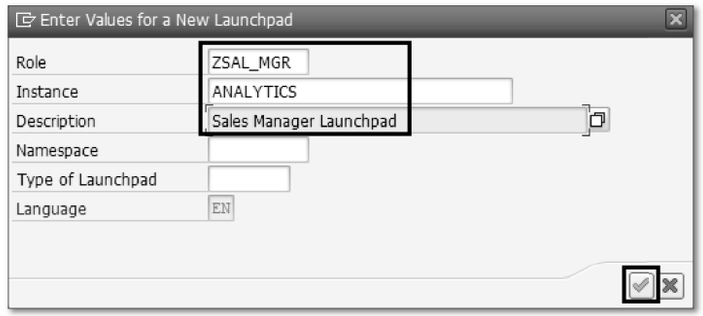

Figure 6.46 New Launchpad

4. Click Yes to ignore the namespace.
5. Now create a new application by clicking New Application.
6. Enter "Days Sales Outstanding (KPI)" in the Link Text field. From the Application Type dropdown list, select URL. Click the Edit button next to the URL input box. Enter "/sap/bc/ui5_ui5/sap/ca_kpi/drilldown/" in the URL box (see Figure 6.47).

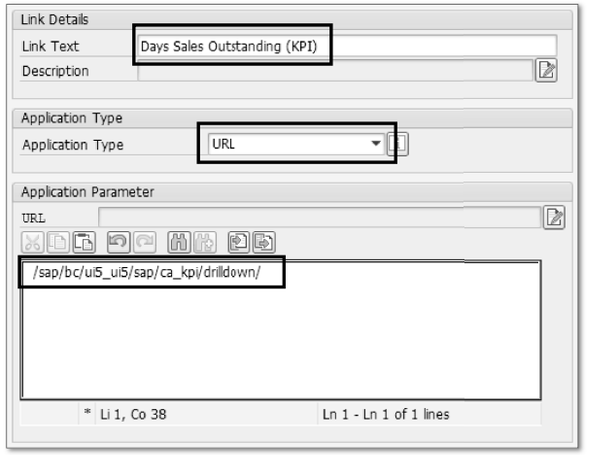

Figure 6.47 App Parameters

7. Click Show Advanced (Optional) Parameters.
8. Click the Edit button next to the Application Alias input box. Enter "analyzeKPIDetails" in the box. Enter "SAPUI5.Component=drilldown" in the Additional Information box (see Figure 6.48).

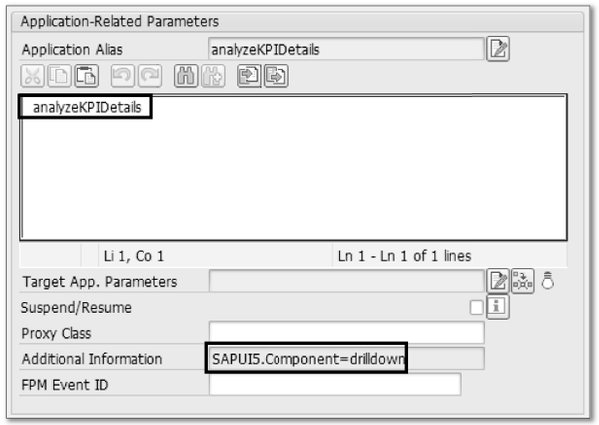

Figure 6.48 Application-Related Parameters

9. Click Save.

10. Log in to the SAP Fiori Launchpad designer at *http://hostname:port/sap/bc/ui5_ui5/sap/arsrvc_upb_admn/main.html20?sap-client=120&scope=CUST*.
11. Click CATALOGS.
12. Create a new catalog by clicking + at the bottom of the screen.
13. Enter the details shown in Figure 6.49.

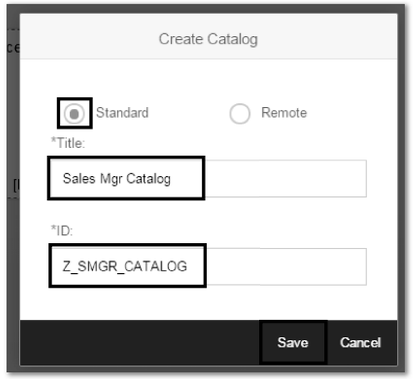

Figure 6.49 Create Catalog

14. Click SAVE.
15. Select the catalog you created in the previous step.
16. Click the TARGET MAPPING icon.
17. Click CREATE TARGET MAPPING.

In the next steps, you'll define the target mapping, but before that, let's explore some of the components of target mapping.

An *intent* allows users to perform actions on semantic objects. In this example, we choose *, which means we want to navigate to all the analytical apps and analyze all the details. The INTENT area of the screen lets you perform actions without worrying about the technical part of the navigational target.

INTENT has the following components (see Figure 6.50):

- SEMANTIC OBJECT
  Represents business entities such as a product or sales order. You can bundle apps that reflect a specific scenario. In this exercise, we're specifying a generic

semantic object, which allows you to analyze all the semantic objects in a standardized way.

- ACTION
  Defines which operations are performed on the semantic object, for example, displaying a purchase order. Here, display is the action, and the purchase order is the semantic object.

Follow these steps:

1. Enter the details in the INTENT section as shown in Figure 6.50.
2. In the TARGET section, enter the details of the custom launchpad you created previously.

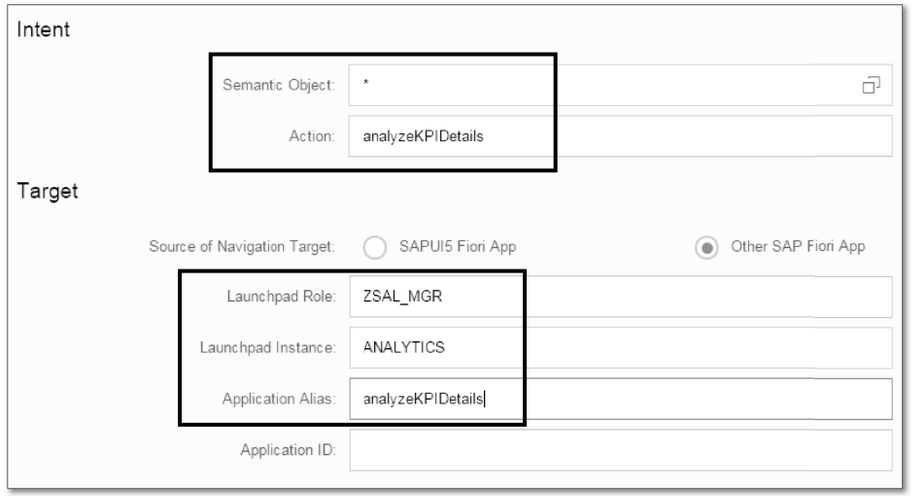

Figure 6.50 Intent and Target

3. Click SAVE.
4. Now create a new group by selecting the GROUP tab in the SAP Fiori Launchpad designer.
5. Create a new group by clicking at the bottom of the screen.
6. Enter the details shown in Figure 6.51, and click SAVE.

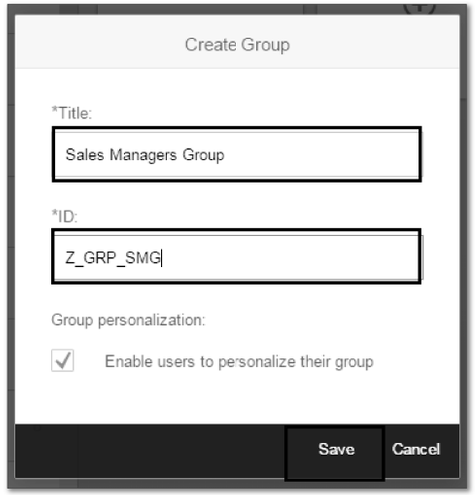

Figure 6.51 Create Group

You should now see the new group created in the SAP Fiori Launchpad designer.

7. Now add a tile by clicking on the tile with the + sign (see Figure 6.52).

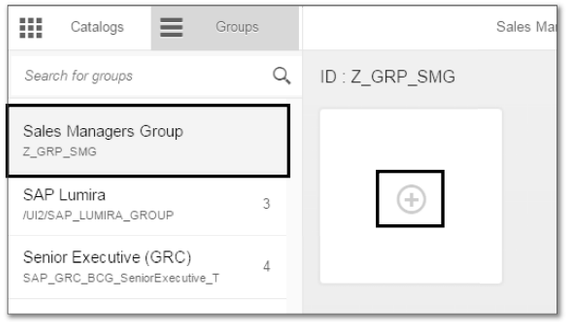

Figure 6.52 Adding a Tile to a Group

8. Click the SEARCH icon to search the catalog.
9. Select the SAP: KPIs catalog from the list, as shown in Figure 6.53.

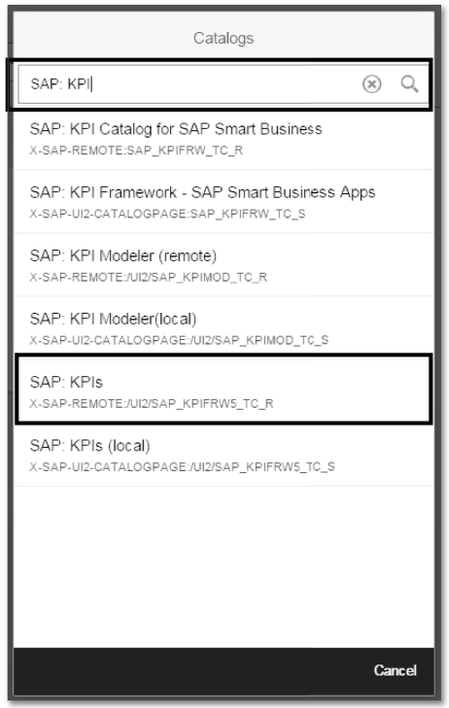

Figure 6.53 SAP KPIs Catalog

10. You'll now see all the KPI tiles that have been modeled using the SAP Smart Business Modeler. Select the DAYS SALES OUTSTANDING (KPI) app by clicking + at the bottom of the tile, as shown in Figure 6.54.

Figure 6.54 Adding an App to the Group

You should now see the Days Sales Outstanding app added to your group in the SAP Fiori Launchpad designer.

You've successfully created a custom catalog, created a custom group, and assigned the Days Sales Outstanding app to the group. The next step is to create a custom role and add the category and group to the role.

Follow these steps:

1. Log in to you ABAP frontend server, and run Transaction PFCG.
2. Enter the ROLE name "Z_ROLE_SM", and click SINGLE ROLE (see Figure 6.55).

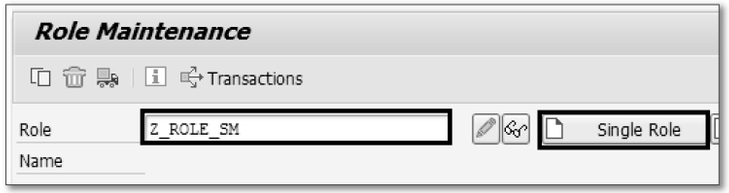

Figure 6.55 Create Custom Role

3. Enter the DESCRIPTION, and click SAVE.
4. Click on the MENU tab, and select the CATALOG from the TRANSACTION button dropdown menu (see Figure 6.56).

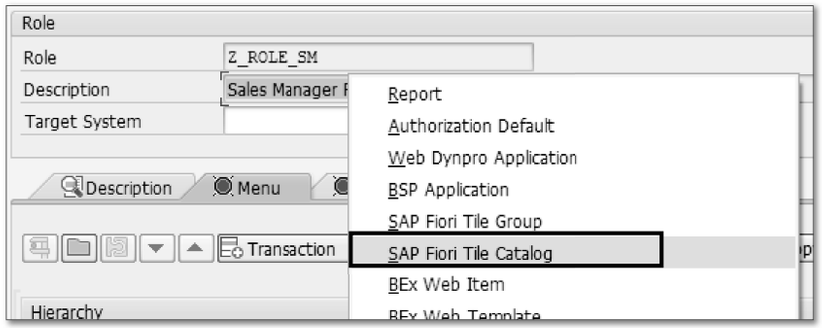

Figure 6.56 Assigning the Tile Catalog to the Role

5. Enter "Z_CAT_U02" in the CATALOG ID field, and click CONFIRM (see Figure 6.57). This is the catalog you created previously.

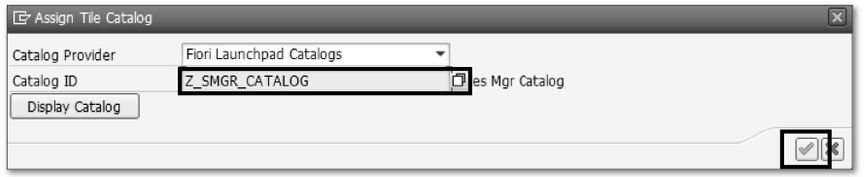

Figure 6.57 Catalog ID

6. Add a group you created by selecting SAP FIORI TILE GROUP from the dropdown menu (see Figure 6.58).

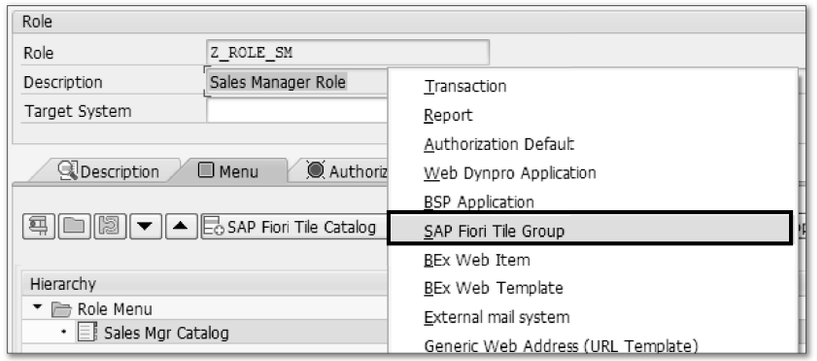

Figure 6.58 Assigning a Group Catalog to the Role

7. To search for your group, click on the SEARCH button next to the GROUP ID.
8. Select the Z_GRP_CM1 group from the popup window (see Figure 6.59). Click EXECUTE.

Figure 6.59 Group ID

You've successfully created the custom role. Your role should now show both the category and group (see Figure 6.60).

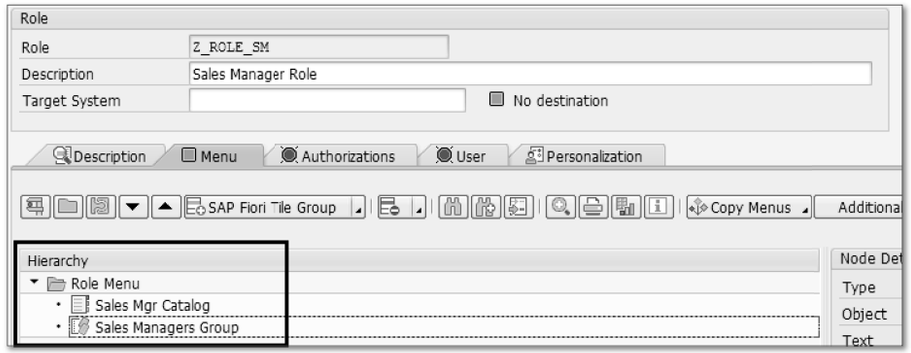

Figure 6.60 Role Menu with Catalog and Group

The last step in this process is to assign the custom role to the user. Follow these steps:

1. Select the User tab.
2. Enter the User ID, and click Save (see Figure 6.61).

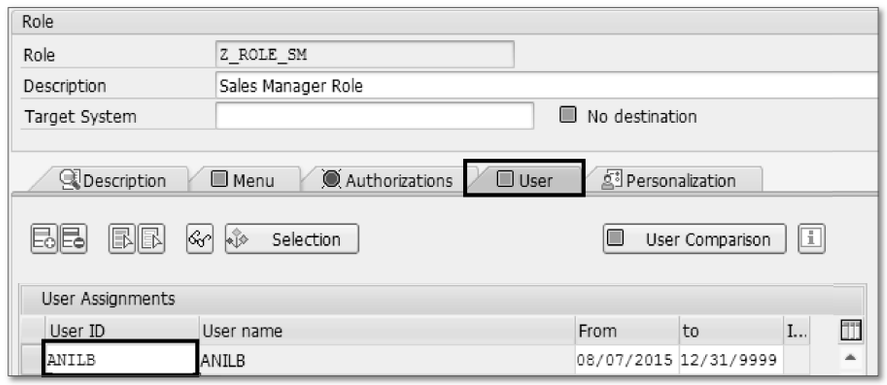

Figure 6.61 Assigning a User

Important!

All users must to be assigned to the generic KPI framework role /UI2/SAP_KPIFRW5_TCR_S. For more information, refer to Chapter 2, Section 2.6.4.

3. Log in to SAP Fiori Launchpad with the test ID, and you should see the Days Sales Outstanding (KPI) app under the Sales Managers Group (see Figure 6.62)

Figure 6.62 Days Sales Outstanding (KPI) App

In this section, we've explored how to provide user access to analytical apps using both an SAP standard role and a custom role. You've successfully created a KPI tile, completed the frontend tasks, and created user authorizations.

6.4 Analytical Apps without the SAP Smart Business Modeler

In the previous section, you created an analytical app using the SAP Smart Business Modeler. In this section, we'll show you how to enable an analytical app without using the SAP Smart Business Modeler with an example based on the Profit Analysis analytical app.

First, let's get the app-specific configuration details from the SAP Fiori apps reference library. Figure 6.63 show the configuration details of the Profit Analysis app.

SAPUI5 Application

The ICF nodes for the following SAPUI5 application must be activated on the front-end server:

Component	Technical Name
SAPUI5 Application	FIN_PRFTANLYS

SAP Fiori Launchpad

You require the following data to give users access to the app in the SAP Fiori launchpad.

Technical Configuration

Technical Catalog	SAP_SFIN_TC_A
TECHNICAL_PFCG_ROLE	SAP_SFIN_TCR_A
Semantic Object	ControllingDocument
Action	analyzeProfit
LPD_CUST Role	UIHSFIN1
LPD_CUST Instance	ANALYTICS
SAPUI5 Application	FIN_PRFTANLYS
Business Catalog (Launchpad)	SAP_SFIN_BC_SALESMANAGER
Business Group (Launchpad)	SAP_SFIN_BCG_SALESMANAGER
PFCG role for Business Catalog	SAP_SFIN_BCR_SALESMANAGER

Figure 6.63 App-Specific Configuration

In the sections that follow, we'll walk through the necessary tasks to complete this implementation.

6.4.1 Activate the SAPUI5 Application

The first step in implementing an analytical app without the SAP Smart Business Modeler is to activate the SAPUI5 application. We've discussed these steps in detail in Chapter 4, Section 4.1. You can follow along with the same steps to activate the FIN_PRFTANLYS service (see Figure 6.64).

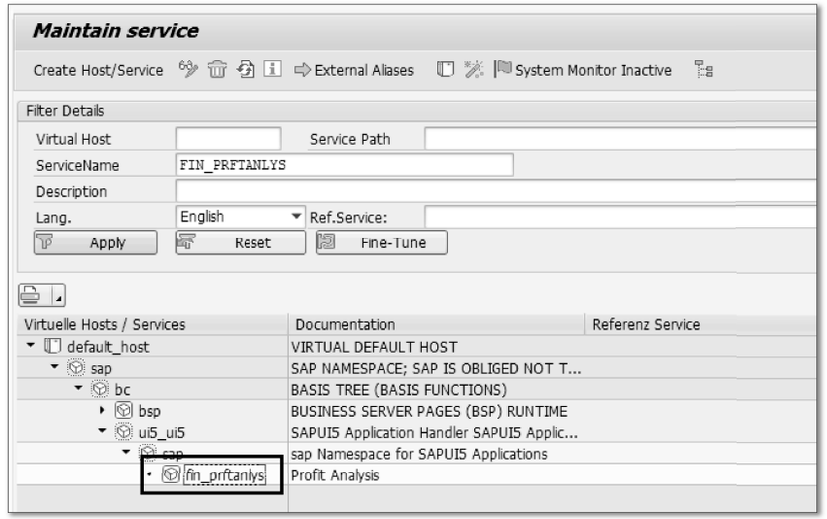

Figure 6.64 SAPUI5 Application

6.4.2 Assign the SAP HANA Role

In this section, we'll assign a product-specific SAP HANA role to the user. This role enables users to access KPI data (i.e., the SAP HANA Live views and the OData service of the specific app). Follow the same steps from Section 6.3.5, and grant access to the user for the role sap.hba.apps.sfin.s.roles::fiori_sfin (see Figure 6.65).

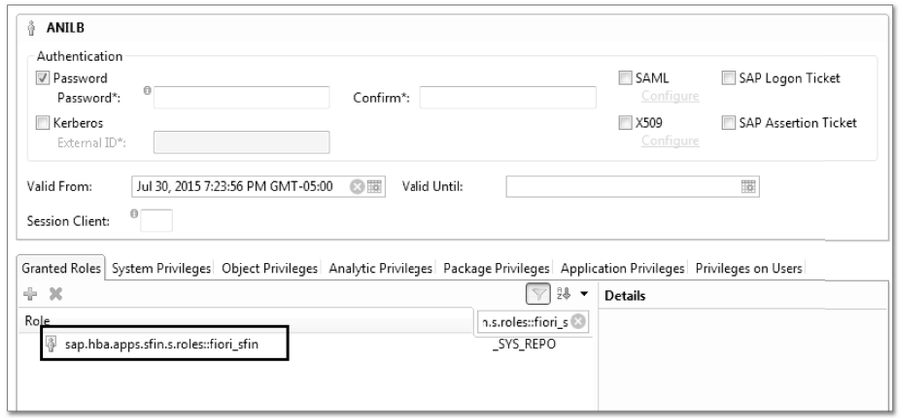

Figure 6.65 SAP HANA Role

6.4.3 Assign the App-Specific Catalog Role

The next step is to assign the app-specific PFCG role for the business catalog to the user. After this is enabled, the user will have access to the catalog in SAP Fiori Launchpad. Assign the SAP_SFIN_BCR_SALESMANAGER business catalog role to an end user (see Figure 6.66). Refer to Chapter 4, Section 4.3.3, for how to assign roles to users.

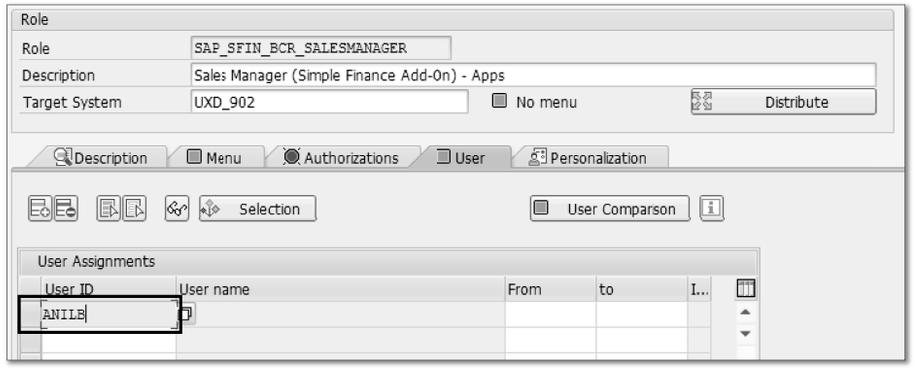

Figure 6.66 Assigning a User

6.4.4 Add the App to SAP Fiori Launchpad

After you've completed all the preceding steps, the last step is to add the app to a group. Follow the same steps you performed in Chapter 4, Section 4.6.6, to add the Profit Analysis app to the Sales Manager group. You'll then see the PROFIT ANALYSIS app under the SALES MANAGER group (see Figure 6.67).

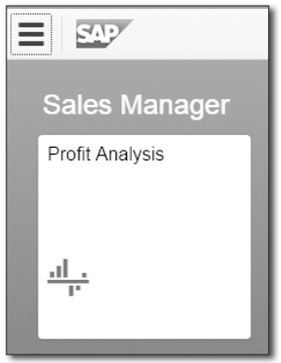

Figure 6.67 Profit Analysis App

Sales Order Fulfillment App

Typically, all SAP Smart Business apps drill down from one analytical app to another analytical app. However, there is one hybrid app, the Sales Order Fulfillment app, which drills down from an analytical app to a transactional app.

The Sales Order Fulfillment app is the only hybrid app that uses SAP Gateway (ABAP frontend server) and SAP HANA XS as well. It needs SAP Gateway because it sends requests to the backend server. After you configure the Sales Order Fulfilment app, it will be added as an analytical app tile in SAP Fiori Launchpad. When a user opens the app, a transactional app is opened. Hence, this is the only hybrid app that has a tile of an analytical app and launches with the features of a transactional app.

6.5 Summary

In this chapter, we provided the step-by-step instructions on how to create an analytical app using the SAP Smart Business Modeler for the Days Sales Outstanding app. We discussed everything from how to create a KPI to providing authorization to the user to an app and its drilldown views. In addition, we showed you how to enable an app with custom groups and catalogs. We then gave you an overview of how to enable analytical apps that don't use a KPI tile to launch (non-smart analytical apps).

In the next chapter, we'll explore OData services in depth. Understanding OData services is very important, as you'll be using this concept a lot during the extension or creation of transactional, fact sheet, and analytical apps, which we cover in the third part of this book.

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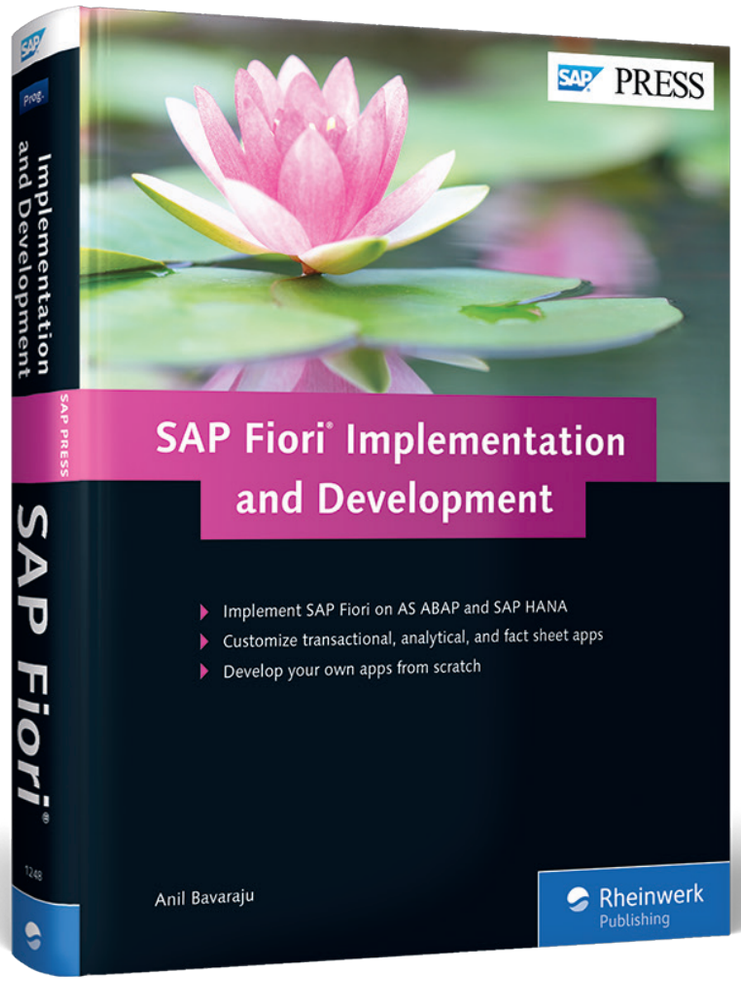

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