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## Typographic Conventions

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Represents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example Text</strong></td>
<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Emphasized words or phrases in body text, graphic titles, and table titles.</td>
</tr>
<tr>
<td><strong>EXAMPLE TEXT</strong></td>
<td>Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
</tr>
<tr>
<td><strong>&lt;Example text&gt;</strong></td>
<td>Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.</td>
</tr>
<tr>
<td><strong>EXAMPLE TEXT</strong></td>
<td>Keys on the keyboard, for example, F2 or ENTER.</td>
</tr>
</tbody>
</table>

## Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️</td>
<td>Caution</td>
</tr>
<tr>
<td>💡</td>
<td>Example</td>
</tr>
<tr>
<td>✍️</td>
<td>Note</td>
</tr>
<tr>
<td>💡💡</td>
<td>Recommendation</td>
</tr>
<tr>
<td>💡💡💡</td>
<td>Syntax</td>
</tr>
</tbody>
</table>
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>About This Document</td>
<td>1</td>
</tr>
<tr>
<td>Scenario Overview</td>
<td>1</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>2</td>
</tr>
<tr>
<td>Recommended Readings</td>
<td>2</td>
</tr>
<tr>
<td>Disclaimer</td>
<td>2</td>
</tr>
<tr>
<td>Creating a Folder</td>
<td>3</td>
</tr>
<tr>
<td>Creating an HTML Start Page</td>
<td>3</td>
</tr>
<tr>
<td>Creating an Input Data Form</td>
<td>7</td>
</tr>
<tr>
<td>Setting Up Mail Templates</td>
<td>8</td>
</tr>
<tr>
<td>Replacements</td>
<td>9</td>
</tr>
<tr>
<td>Creating an Approval Callable Object</td>
<td>11</td>
</tr>
<tr>
<td>Creating a Simple Process</td>
<td>13</td>
</tr>
<tr>
<td>Initiating a Process</td>
<td>15</td>
</tr>
</tbody>
</table>
Introduction

About This Document

This tutorial is a part of a series that describes how to implement a composite application using SAP Composite Application Framework (CAF) capabilities.

The tutorial describes how to create a simple job application process using the CAF Process Layer (Guided Procedures).

Scenario Overview

Purpose

With Guided Procedures you can model complex processes that consist of multiple phases and steps. To be able to create a real-life business process, you need to be familiar with the basics of process modeling in GP.

This tutorial is a quick guide through the GP design time. It provides you with an overview of GP basic features, which are described in detail in the Business Expert Guide.

Implementation Considerations

The example that is used in the tutorial presents a simple process that consists of three steps, as illustrated in the figure below.

Filing a Job Application

Although the process is simple, it can be implemented in a more complex business process – for example, as the first phase of a hiring process with requirements for the education of the applicants.
Features
To create the process template, you go through the following steps:

1. You define the process flow – that is, you decide on the business logic that the process implements, and the steps the users execute.
2. You create the functions that build up the process flow – in GP terms, you create the callable objects, actions, blocks, and additional components that you need to implement the process template.
3. You create the process template itself – the components that you have already created are ordered and you configure the mappings between their parameters, the security-related aspects, such as role assignment, and so on.
4. Finally, you can initiate the process to see how it works.

Prerequisites
The following table describes the prerequisites for running this tutorial.

<table>
<thead>
<tr>
<th>Software</th>
<th>The tutorial is compliant with:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Sneak Preview SAP NetWeaver 04 – Web Application Server 6.40 Java. You can download the sneak preview at <a href="http://sdn.sap.com">http://sdn.sap.com</a></td>
</tr>
<tr>
<td></td>
<td>• SAP NetWeaver 2004s SPS04</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Documents</th>
<th>Before you start with this tutorial, see:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• The Guided Procedures Design Time (PPT)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Authorizations</th>
<th>You must hold the following Guided Procedures roles:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• GP Administrator</td>
</tr>
<tr>
<td></td>
<td>• GP Business Expert</td>
</tr>
<tr>
<td></td>
<td>• GP User</td>
</tr>
</tbody>
</table>

Recommended Readings
After you have completed this tutorial, you can familiarize yourself with the following documents:

- Enhancing the Job Application Process

Disclaimer
Any software coding and/or code lines / strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.
Creating a Folder

Use
Folders are used in the GP gallery to help you organize the objects that you create.

Prerequisites
You must have the required permissions for working in the gallery.

Procedure
1. Launch GP design time and open the gallery.
2. Choose Create folder.
3. Enter the required data as follows:
   - Name – for example, My First Process
   - Description – enter a brief description
4. Choose Create.

Result
You have created the folder where you can store the elements that you create.

See also:
Creating an HTML Start Page [Page 3]

Creating an HTML Start Page

Use
The first step of the simple HR process that you will create is an HTML page that presents for example, the requirements the applicant should meet to be eligible for the vacancy.

You can design the HTML in an appropriate editor, and then upload it as a content package object in Guided Procedures, and expose it as a callable object. Then you create an action and attach the callable object to it, thereby enabling its use in a process template.

Prerequisites
- You must have the appropriate permissions for creating objects in the gallery.
- You must have created a plain HTML page. You do not need to implement any specific logic in it.
For the position of **Financial Analyst**, we are looking for a motivated and competent person who is willing to work in a dynamic international environment.

Our requirements for the applicant are:

- Master Degree in Finance
At least two years of experience on a similar position.

Fluent English; knowledge of German is an advantage.

Procedure

Creating a Content Package Object

1. Launch the GP design time, and choose Create Content Package Object from the contextual panel.
2. Enter the required data as follows:
   - Name – enter Start Page
   - Description – enter a brief description; for example, Content package for start page
   - Original Language – select English
   - Folder – select folder My First Process
3. Choose Save and Open.
   The design time of the content package object opens. You must add content to it.
4. Choose Maintain Content from the contextual panel, or click the link under Content.
5. Choose Add File and browse to select the HTML file that you have previously created. Choose Add.
6. Choose Done.
7. Choose Activate content package.

**Creating a Callable Object**

1. Open the gallery, and choose Create Callable Object from the contextual panel.
2. Enter the following data:
   - Type – select Content Package
   - Name – enter CO 1: Start page
   - Description – enter a brief description; for example, Start page
   - Original Language – select English
   - Folder – select folder My First Process
3. Choose Next.
   To select the content package that you have created, choose Browse…. Then choose Select.
5. Choose Next.
   Do not insert any input parameters.
6. Choose Next.
   For Button Label enter Apply.
7. Choose Next and then Finish and Open.
   The design time for the callable object opens.
8. Choose Activate Callable Object from the contextual panel, and confirm that you want to activate the object.

**Creating an Action**

1. Choose Create Action from the contextual panel in the gallery.
2. Enter the following data:
   - Name – for example, Display Start Page
   - Description – enter a brief description for the action; for example, Display start page
   - Original Language – select English
   - Folder – select folder My First Process
3. Choose Save and Open.
   The design time for the action opens.
4. Choose Attach Callable Objects from the contextual menu, or follow the link under Callable Objects in the Overview screen.
   You must attach an object for execution.
5. To select an object for execution, click Choose… and then browse to CO 1: Start page.
6. Choose Save.
7. Choose *Activate Action* from the contextual menu, and confirm that you want to activate the action.

**Result**

You have created the start page of the process. Go on with [creating the data input form][Page 7].

**Creating an Input Data Form**

**Use**

In the second step of the process the user enters data, which is used in the next step of the process. For example, the input form can contain fields for the first and the last name of the applicant, and for his or her education and spoken languages.

To provide the input form, you can use one of the Web Dynpro components that Guided Procedures (GP) provides. You expose it as a callable object, and then attach it to an action.

**Procedure**

**Creating a Callable Object**

1. Launch GP design time and choose *Create Callable Object* from the contextual panel.
2. Enter the following data:
   - Type – extend node *Data Forms*, and select *Data input form*
   - Name – enter *CO 2: Data Input*
   - Description – enter a brief description of the callable object; for example, *Data input*
   - Original Language – choose *English*
   - Location – choose folder *My First Process*
3. Choose *Next*.
   Make sure interface `com.sap.caf.eu.gp.ui.wdco.dataform.WDCODataForm` is selected.
4. Choose *Next*.
   Choose *Insert* to enter an output parameter for the form. Add the following parameters:
   - First Name – a parameter of type *String*; its value is required
   - Last Name – a parameter of type *String*; its value is required
   - Education – a parameter of type *String*
   - Languages – a parameter of type *Structure*
   - The next parameters that you define are stored as sub-entries for this structure. For example, you can define entries for English and German, as well as an additional field *Other* where the applicant can enter what other languages he or she knows.
5. Choose Next and then Finish and Open.
   The design time for the callable object opens.

6. Choose Activate Callable Object from the contextual menu, and confirm that you want to activate the object.

**Creating an Action**

7. Choose Create Action from the contextual menu.

8. Enter the following data:
   - Name – for example, Enter Data
   - Description – enter a brief description of the action; for example, Enter Data
   - Original Language – select English
   - Folder – select folder My First Process

9. Choose Save and Open.
   The design time of the action opens.

10. Choose Attach Callable Objects from the contextual menu, or follow the link under Callable Objects on the Overview screen.

11. To select an object for execution, click Choose… and then browse to CO 2: Data Input.

12. Choose Save.

13. Choose Activate Action from the contextual menu, and confirm that you want to activate the action.

**Result**

You have implemented the action that will represent the second step in the process.

Before you implement the last step of the process, you must set up the templates [Page 8] that will be used when the system sends e-mails.

**Setting Up Mail Templates**

**Use**

For the last step of the process that is implemented in this tutorial, you can choose to send e-mails upon approval or rejection of the application.

In Guided Procedures (GP) you can configure e-mail templates using workset Administration.

**Prerequisites**

You must have GP administrator permissions to create mail templates.

**Procedure**

1. Launch workset Administration and choose General → Maintain E-Mail Templates.
2. Choose New → HTML Template… from the contextual panel.

3. Enter the following data:
   - Master Language – select English
   - Technical Name – for example, approve
   - Language – select English as well
   - Title – for example, Approval
   - Content – enter HTML code with the text of the e-mail that will be sent

   You can personalize the sent e-mail by defining replacements. For more information, see Replacements [Page 9].

4. Choose Save.

5. Repeat steps 2 to 4 to create a template for the rejection e-mail.

   Choose a different technical name and title for the template – for example, reject and Rejection.

Result

You have created the templates that you will use for the last step of the process. Now you can create the approval callable object [Page 11].

Replacements

Definition

A replacement is a parameter that you can enter in a MIME template at design time, and gets replaced by a custom value at runtime.

Use

You can use replacements when you want to personalize the e-mails that are sent by Guided Procedures. For example, if you want to address the recipient directly in the e-mail, you can enter a replacement in the beginning of the e-mail, and at runtime the system will enter the relevant name there.

Structure

You can use the following replacement parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Replacements</td>
<td></td>
</tr>
</tbody>
</table>
role.initiator.firstname  Replaced by the first name of the process initiator
role.initiator.lastname  Replaced by the last name of the process initiator
role.initiator.accountname  Replaced by the user identifier of the process initiator in UME
role.processor.firstname  Replaced by the first name of the processor for the action that sends the e-mail
role.processor.lastname  Replaced by the last name of the action processor
role.processor.accountname  Replaced by the user identifier of the action processor in UME
role.recipient.firstname  Replaced by the first name of the process contributor that has been specified as a recipient of the e-mail
role.recipient.lastname  Replaced by the last name of the e-mail recipient
role.recipient.accountname  Replaced by the user identifier of the e-mail recipient in UME

For the Approval callable object (Web Dynpro component com.sap.caf.eu gp.ui.wdco.approval.WDCOApproval) you can define the following replacements:

**Replacements for the Approval Callable Object**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>co.comment</td>
<td>Replaced by the comment that has been entered by the processor of the approval action</td>
</tr>
<tr>
<td>sy.currenttime</td>
<td>Replaced by the date when the approval action has been completed</td>
</tr>
</tbody>
</table>

**Integration**

To enable the replacement of the parameters, you must use the following syntax.

```java
if( exists(<replacement_parameter>) ) \optional
{
  writeln(<replacement_parameter>);
}
```
Example

You can personalize an e-mail that is sent to an approved applicant as follows. It is assumed that the applicant has initiated the process – for example, by completing an application form.

```html
<html>
<head>
<title>Approval</title>
</head>

<body>

<p>
Dear Mr/Ms

{ writeln (role.initiator.lastname) }

, 

</p>

<p>Your application has been accepted.</p>

<p>Best regards,</p>

<p><i>HR Manager</i></p>

</body>
```

At runtime the system replaces the parameters with the last name of the applicant.

Creating an Approval Callable Object

Use

Guided Procedures provides a callable object that enables the processor to approve or reject a previous action, thereby sending a mail to selected recipient(s).

To use this function, you must create a callable object of this type, and attach it to an action.

Prerequisites

- You must have the required permissions to create callable objects in the Gallery.
If you want to use the function for sending e-mails, you must have set up e-mail templates [Page 8].

Procedure

Creating a Callable Object

1. Launch GP design time and choose Create Callable Object from the contextual panel.
2. Enter the following data:
   - Type – extend node Process Control, and select Visual Approval
   - Name – enter a name for the callable object; for example, CO 3: Approve or Reject
   - Description – enter a brief description for the object
   - Original Language – select a language from the dropdown list; for example, English
   - Folder – choose a folder to store the callable object; for example, My First Process
3. Choose Next.
   Make sure Web Dynpro component com.sap.caf.eu.jp.ui.wdco.approval.WDCOApproval is selected.
4. Choose Next.
   To define input parameters, choose Insert.
   For the purposes of the process that you create, define the same input parameters as the output parameters that you have defined for the data input form. For more information, see Creating an Input Data Form [Page 7].
5. Choose Next.
   The output parameters for the callable object are pre-defined. You can only change their order using Move Up or Move Down.
6. Choose Next.
   Set the configuration parameters of the callable object as follows:
   - Approve E-Mail – choose a template for the e-mails to be sent in case that the processor of the action chooses Approve; for example, choose the predefined template Approval
   - Recipients for Approval – choose who will receive the approval e-mail; for example, you can choose to send the e-mail to the initiator of the process, to the processor of the action, to the administrator, owner, or overseer of the process, or to all process contributors
   - Reject E-Mail – choose a template for the e-mails to be sent in case the processor of the action chooses Reject; for example, choose template Rejection
   - Recipients for Rejection – choose who will receive the rejection e-mail
The system sends e-mails only if you select an e-mail template. If you leave the default option *No MIME Selected*, e-mails are not sent.

7. Choose *Finish and Open*.
   - The design time for the callable object opens.

8. Choose *Activate Callable Object* from the contextual menu, and confirm that you want to activate the object.

**Creating an Action**

9. Open the gallery and choose *Create Action* from the contextual panel.

10. Enter the following data:
    - Name – for example, *Approve or Reject*
    - Description – enter a brief description of the action; for example, *Approve or Reject*
    - Original Language – choose *English*
    - Location – choose *My First Process*

11. Choose *Save and Open*.
    - The design time for the action opens.

12. Choose *Attach Callable Objects* from the contextual menu, or follow the link under *Callable Objects* on the *Overview* screen.
    - To select an object for execution, click *Choose…* and then browse to *CO 3: Approve or Reject*.

13. Choose *Save*.

14. To activate the action, choose *Activate Action*, or follow the link under *Callable Objects* on the *Overview* screen.

**Result**

You can now use the approval callable object in a process. To create the process template, you can use the simple process wizard, as described in *Creating a Simple Process* [Page 13].

**Creating a Simple Process**

**Use**

The design time of Guided Procedures provides a wizard for creating simple processes – that is, processes that consist of a single phase. The wizard guides you through the procedure of creating the process template and the block that represents the phase of the process, configuring the input and output context, the role assignments, and so on.

**Prerequisites**

You must have the required permissions to create objects in the gallery.
Procedure

1. Launch the GP design time and open the gallery.
2. Choose Create Simple Process from the contextual panel.
3. In step Basic Data fill in the required fields as follows:
   - Process Name – for example, My First Process
   - Process Description – enter a brief description for the process
   - Block Name – for example, Application
   - Block Description – enter a brief description for the block
   - Original Language – for example, English
   - Location – choose a folder for the process template and for the block; for example, My First Process
4. Choose Next.
   To add the items that build the process, choose Insert…. Select an item from the gallery, and confirm your selection using Insert. Repeat the procedure for all items that you want to add.
   Insert the items in the order, in which you want them to be executed – for example:
   a. Display Start Page
   b. Enter Data
   c. Approve or Reject
5. Choose Next.
   In step Consolidate Parameters you must group the parameters, so that the output of the second action is automatically entered as an input for the third action.
   To group the parameters, select those that you want to include in a single group, enter a name for the group in field Consolidate To, and choose Go.
   In the example, the following parameters are consolidated:
   - First Name – the group includes the output parameter First Name from action Enter Data, and the input parameter First Name from action Approve or Reject
   - Last Name – the group includes the output parameter Last Name from action Enter Data, and the input parameter Last Name from action Approve or Reject
   - Education – the group includes the output parameter Education from action Enter Data, and the input parameter Education from action Approve or Reject
   - Languages – the group includes the output parameter Languages from action Enter Data, and the input parameter Languages from action Approve or Reject
6. Choose Next.
   In step Consolidate Roles, you can group the available process roles. To do it, select the roles that you want to consolidate, enter a name for the group in field Consolidate To, and choose Go.
   For example, if the first two actions are to be completed by the same person, you can group them into a single role Applicant. You can also create role HR Manager for the processor of the third action.
7. Choose *Next*.
   In the last step, you can choose to activate the process template and the block that have been created.
   To be able to activate them, you must have activated the actions that you have added to the process template.

8. Choose to activate the objects and then choose *Finish*.

**Result**
You can now [initiate the process](Page 15) to see how it works.

**Initiating a Process**

**Use**
In Guided Procedures runtime you can initiate a process from a process template that you have created using the GP design time.

**Prerequisites**
- You must have the required permissions to work with the GP runtime.
- The process template must have been released.

**Procedure**
1. Launch the GP runtime and choose *Start a process* from the contextual menu.
2. Browse the gallery to select *My First Process*.
3. Choose *Next*.
   You must associate an existing user to each of the process roles. In addition to the roles that you have defined when you created the process template, you must also assign users to the default process roles – Administrator, Owner, Overseer.
   To associate a user, select a role, and choose *Add User*. The user picker is displayed in the right-hand part of the screen. Use function *Find* to search for the required user.
   To associate the user to the role, select it and choose *Add*. Repeat the procedure for all process roles.
4. Choose *Next*.
5. Choose *Initiate*.

**Result**
You have started a process from the process template that you created.

To complete the first and the second actions, log in to the GP runtime as the user that you have associated to role *Applicant*.

To complete the third action, log in to the GP runtime as the user you have associated to role *HR Manager*. 