ABAP/4

ABAP Part III LAB BOOK

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Getting Started

1.1 Overview

This lab book is a guided tour for learning SAP ABAP. It comprises of assignments to be done. Refer the demos and work out the assignments given by referring the case studies which will expose you to work with Java applications.

1.2 Setup Checklist for SAP ABAP

Here is what is expected on your machine in order to work with lab assignment.

Minimum System Requirements

- Intel Pentium 90 or higher (P166 recommended)
- Microsoft Windows 2010 or higher.
- Memory: (8GB or more recommended)

Please ensure that the following is done:

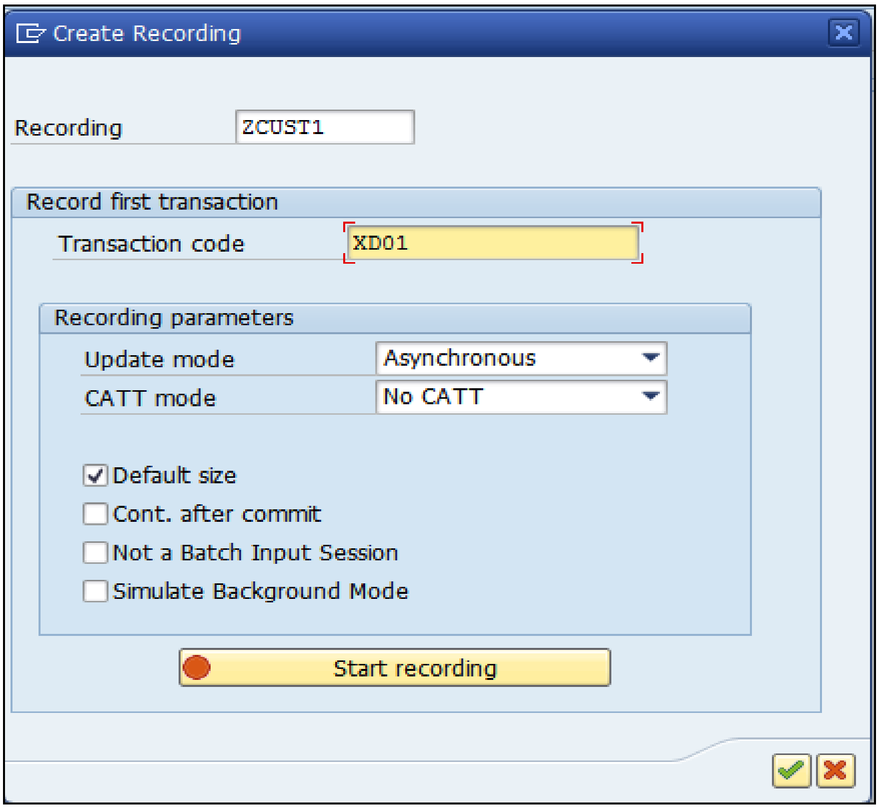
- SAP GUI is installed
- Connection to the SAP Server is present

Lab 1-1 BDC

Goals	• To know the data migration techniques and how to upload the data through the BDC Session method and Call Transaction Techniques. • Data upload through the LSMW tool
Time	4 Hours
Lab Setup	• Connectivity to SAP server • Login details for connecting SAP server

1. Perform the BDC Recording for Customer Master data and create a program for the same.

Step # 1. Go to SHDB T-code and start the recording for the customer master info using the transaction code XD01 as shown in the below screen.



Create Recording

Recording: ZCUST1

Record first transaction

Transaction code: XD01

Recording parameters

Update mode: Asynchronous

CATT mode: No CATT

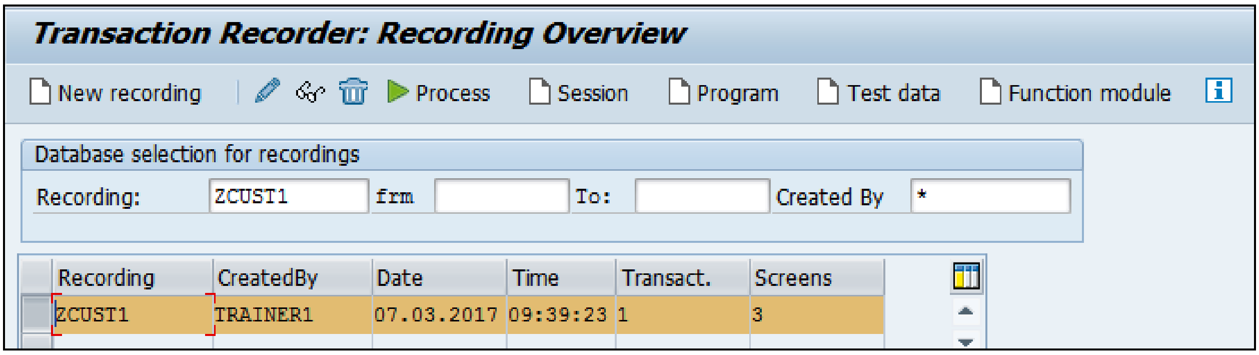
☑ Default size

□ Cont. after commit

□ Not a Batch Input Session

□ Simulate Background Mode

Step # 2. Select the recording and click on the program .



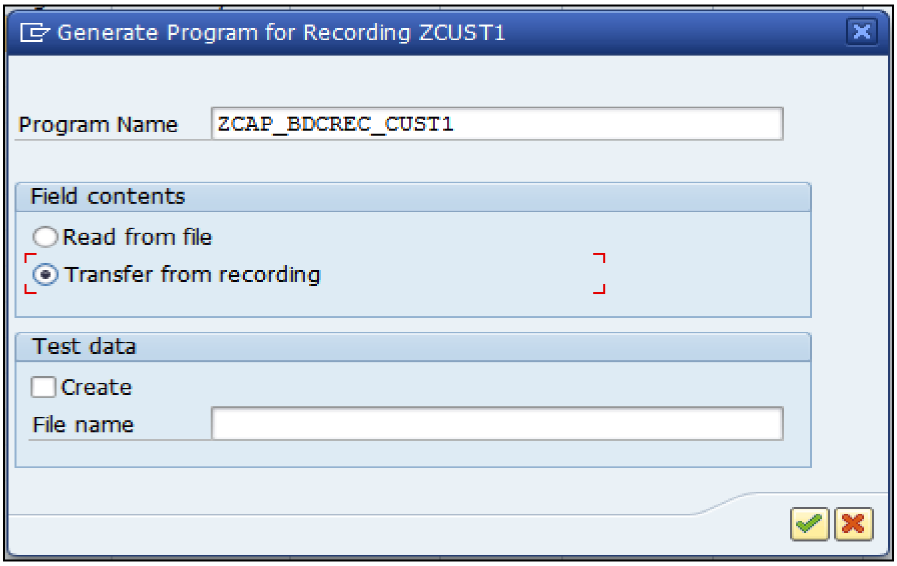
Transaction Recorder: Recording Overview

Database selection for recordings

Recording: ZCUST1 frm To: Created By *

Recording	CreatedBy	Date	Time	Transact.	Screens
ZCUST1	TRAINER1	07.03.2017	09:39:23	1	3

Step # 3. Select the Transfer from recording radiobutton and continue.



Generate Program for Recording ZCUST1

Program Name ZCAP_BDCREC_CUST1

Field contents

○ Read from file

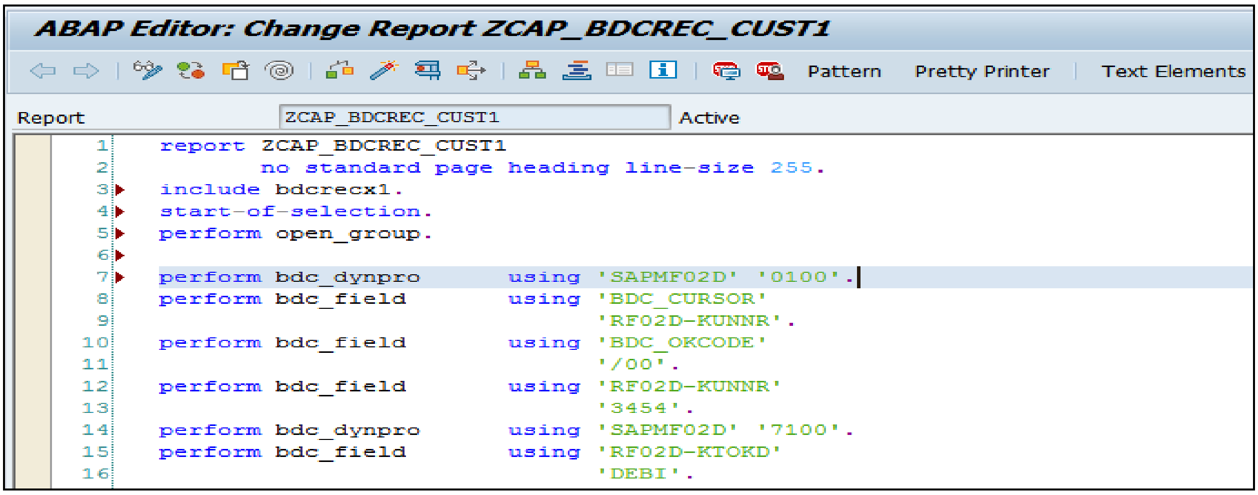
● Transfer from recording

Test data

□ Create

File name

Step # 4. Program created automatically with the bdc performs.



ABAP Editor: Change Report ZCAP_BDCREC_CUST1

Report ZCAP_BDCREC_CUST1 Active

```
report ZCAP_BDCREC_CUST1
       no standard page heading line-size 255.
include bdcrecx1.
start-of-selection.
perform open_group.

perform bdc_dynpro      using 'SAPMF02D' '0100'.
perform bdc_field       using 'BDC_CURSOR'
                              'RF02D-KUNNR'.
perform bdc_field       using 'BDC_OKCODE'
                              '/00'.
perform bdc_field       using 'RF02D-KUNNR'
                              '3454'.
perform bdc_dynpro      using 'SAPMF02D' '7100'.
perform bdc_field       using 'RF02D-KTOKD'
                              'DEBI'.
```

2. BDC Session Method for Material Master.

Create a BDC Session method program for Materail Master T-Code MM01.

Program Logic Hints:

- Call BDC_OPEN_GROUP, BDC_INSERT and BDC_CLOSE_GROUP Functions.
- Create the flat file in the presentation system to attach the data.
- Process the foreground sessions with SM35 T-Code or Process with background job using the Predefined program RSBDCSUB in SE38.

Reference T-Codes and Tables:

T-Codes: SE38 and MM01/02/03 **Tables: MARA, MARC and MAKT**.

Step # 1. Go to SHDB and enter the MM01 t-code to record the material master data.

Step # 2. Create an executable program and write the session method logic .

Step # 3. Process the BDC Session Method through the SM35 T-Code.

3. BDC Call Transaction Method for Vendor Master using the error handling.

Create a BDC calltransaction method program for the Vendor Master Transaction MK01 and handle the errors using BDCMSGCOLL.

Program Logic Hints:

- Create the flat file(Excel Format) in the presentation system to attach the data.

- Create an internal table IT_BDCMSGCOLL TYPE BDCMSGCOLL for the BDCMSGCOLL Structure.
- Call the FORMAT_MESSAGE Function Module and display the messages.
- Loop the IT_BDCMSGCOLL into WA_BDCMSGCOLL.

Reference T-Codes and Tables:

T-Codes: SE38 and MK01/02/03 **Tables: LFA1 and LFB1**.

Step # 1. Go to SHDB and enter the MK01 t-code to record the vendor master data.

Step # 2. Create an executable program and write the call transaction method logic.

Step # 3. Read the messages into IT_BDCMSGCOLL into WA_BDCMSGCOLL and display the messages for the user communication.

4. Create a BDC Session Method with Table Control for Customer Master XD01 transaction.

Create a BDC Session method program with table control for Customer Master data to upload the customer master general data(Address Tab in XD01) and customer master bank data (Payment Transaction Tab in XD01).

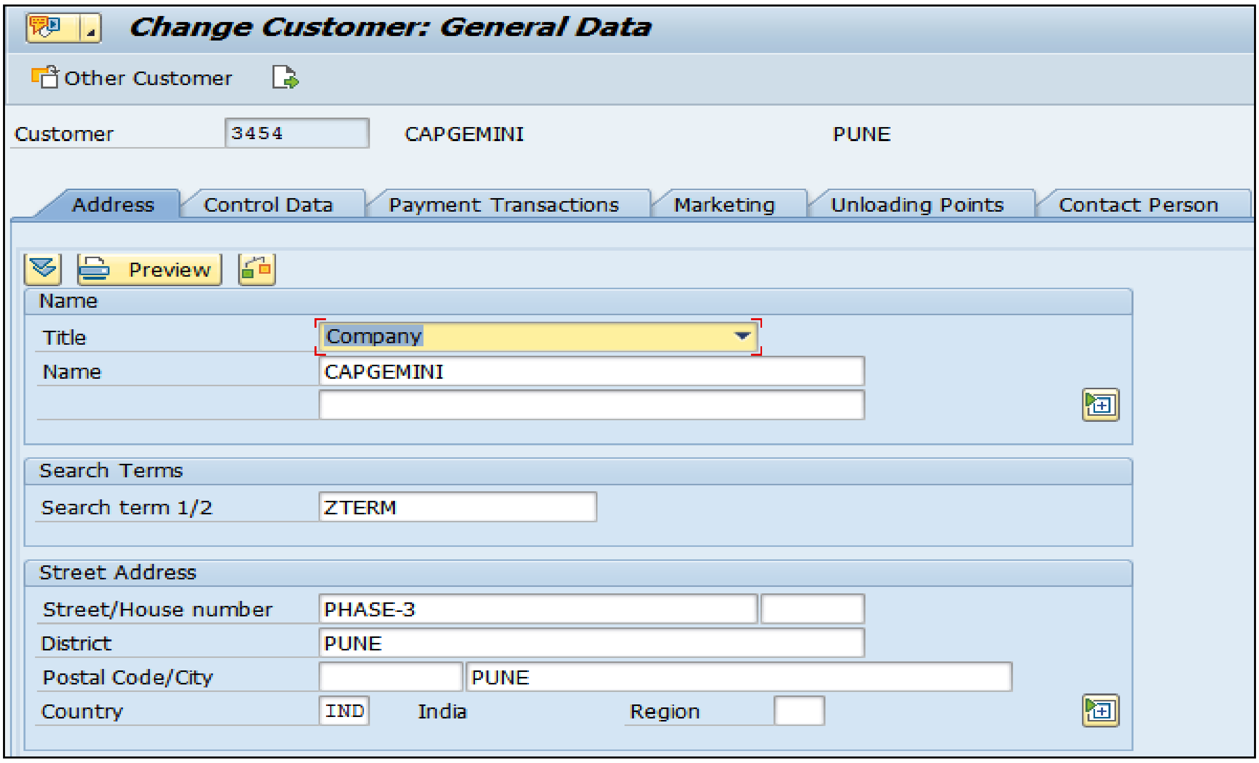
Program Logic Hints:

- Declare the two internal tables, First one is for the general data and second one is for the bank data.
- Call two GUI_UPLOAD function modules in the program.
- Create 2 Flat Files or 2 Excel Files in the presentation system to attach the data.
  1) Customer General Data.
  2) Customer Bank Data.
- Loop the **General Data** BDC performs to the first Internal table and **Bank Data** BDC performs to the Second Internal table.

Reference T-Codes and Tables:

T-Codes: SE38 and XD01/02/03. **Tables:** KNA1 and KNB1.

Step # 1. Go to SHDB and enter the XD01 T-Code to record the customer master general data in **Address Tab** and Bank data in **Payment Transaction Tab** as shown in the below screens.



Change Customer: General Data

Customer 3454 CAPGEMINI PUNE

Name

Title	Company
Name	CAPGEMINI

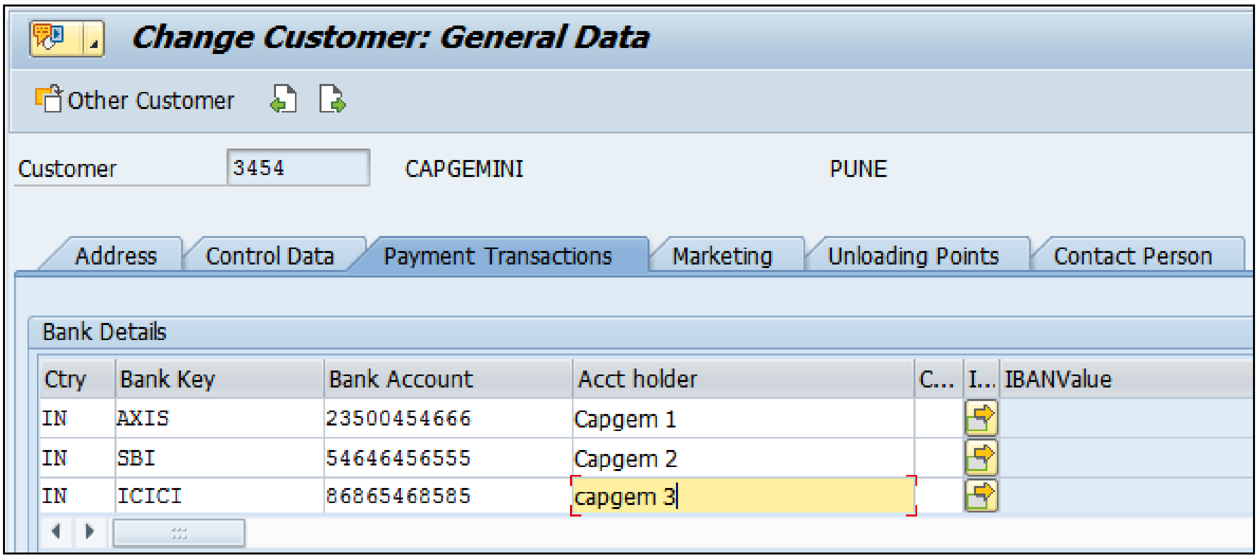
Search Terms

Search term 1/2	ZTERM

Street Address

Street/House number	PHASE-3		
District	PUNE		
Postal Code/City	PUNE		
Country	IND India	Region	

Step # 2. Click on the **Payment Transactions tab** to enter the multiple bank details .



Change Customer: General Data

Customer 3454 CAPGEMINI PUNE

Bank Details

Ctry	Bank Key	Bank Account	Acct holder	C...	I...	IBANValue
IN	AXIS	23500454666	Capgem 1			
IN	SBI	54646456555	Capgem 2			
IN	ICICI	86865468585	capgem 3			

Step # 3. Prepare the BDC Session Method based on the recording and upload the customer master data with multiple bank details.

Step # 4. Check the customer data in XD03 transaction and check the uploaded entries in KAN1 and KNB1 Tables.

Lab 2-1 Enhancements and Modifications

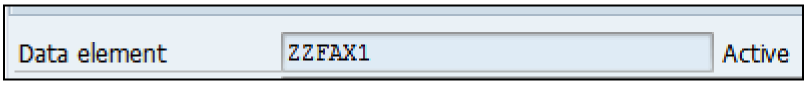
Goals	• How to use Enhancements and Modifications
Time	60 Minutes
Lab Setup	• Connectivity to SAP server • Login details for connecting to SAP server

1. ABAP Dictionary Table Enhancements Using the Append Structure.

ABAP Dictionary Table Enhancemetns for Vendor Master Table (LFA1) and add any Fields by using the Append structure.

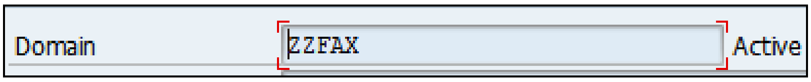
Create the Fields, Data Elements and the Domains should start with the customer name space Starting with ZZ or YY as shown in the below screens.

Step # 1: Go to SE11 T-Code to Crate the Data Element.



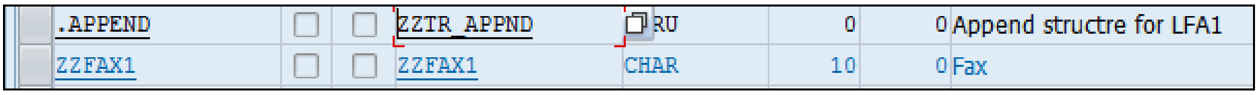
Data element ZZFAX1 Active

Step # 2: Go to SE11 T-Code to Crate the Domain. Activate the Domain and Data element.



Domain ZZFAX Active

Step # 3: Provide the data element and domain inside the append structure and back to table you can find the fields under .Append structure.



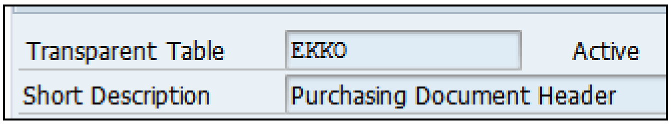
.APPEND	□	□	ZZTR_APPND	RU	0	0	Append structre for LFA1
ZZFAX1	□	□	ZZFAX1	CHAR	10	0	Fax

2. ABAP Dictionary Table Enhancements Using the CI (Customizing Includes).

ABAP Dictionary Table Enhancemetns for Purchase order Table (EKKO) :Add any ZZFields by using the CI_EKKODB Structure.

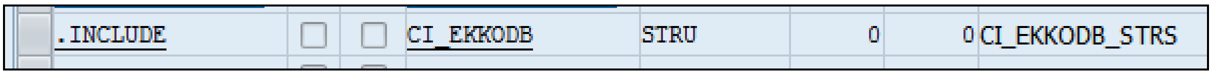
Create the Fields, Data Elements and the Domains should start with the customer name space starting with ZZ or YY as shown in the below screens.

Step # 1: Go to Table EKKO Purchase Order Header.



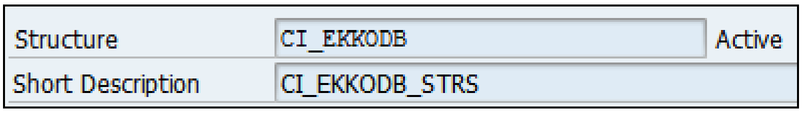
Transparent Table	EKKO	Active
Short Description	Purchasing Document Header	

Step # 2: Double click on the CI_EKKODB Structure.



.INCLUDE	□	□	CI_EKKODB	STRU	0	0	CI_EKKODB_STRS

Step # 3: Add the fields in CI_EKKODB Structure as shown in the below screen.



Structure	CI_EKKODB	Active
Short Description	CI_EKKODB_STRS	

Eg:

ZZFAX1 Types ZZFAX1 CHAR 10 0 Fax
NAME Types NAME CHAR 35 0 Employee's last name
ZZFAX123 Types ZZFAX123 CHAR 10 0 FAX
ZZTELNO Types ZZTELNO CHAR 10 0 TELEPHONE NO
ZZTAN Types ZZTAN CHAR 8 0 DFHGTFRGH
ZZSOUTypes ZZSOUACH_INCLUDE1 CHAR 5 0 ZZSOUACH_INCLUDE1

Lab 3-1 Smartforms

Goals	• How to design the Smartforms , Smart Styles and Text Modules
Time	120 Minutes
Lab Setup	• Connectivity to SAP server • Login details for connecting to SAP server

1. Design the smartform to display the Flight booking details.

Step # 1. Go to smartforms t-code and design the smartforms with tables and templates based on the windows.

Step # 2. Go to smartstyles t-code and assign the same to the smartforms.

Step # 3. Go to smartforms t-code and create the textmodules and assign the same to the smartforms.

Step # 4. Go to SE38 t-code and write the main program logic for the smartforms and call the smartform from the driver program.

Smartform Code Logic:

Reference T-Codes and Tables:

Tables: SFLIGHT,SPFLI,SBOOK.

1) Input of the Adobe form should be the Customer Number ,Flight date and Airline Code(From table SBOOKS).

2) Title window : Hardcoded Text.

3) Address window : Get the **Flight details** from table SFLIGHT for the Connection Number(CARRID) and Airline Code no(CARRID) and Flight date(FLDATE)

4) Template window : Get the **Flight schedule details** from table SPFLI for the Connection Number(CARRID) and Airline Code no(CARRID) .

5) Main window : Get the line item booking details from table SBOOKS and display the data in tabular format display the data for the table format in the MAIN WINDOW.

6) Footer Window : Provide the system fields for the Date, Time and Page no.

Note: as shown below output of the smartform data may not be same in all the clients or servers.

Expected Output of the Smartform :

FLIGHT BOOKING DETAILS

CONSULTING.TECHNOLOGY.OUTSOURCING

Flight Details:

Airline Code: XXX
Connection XXX
Flight Date: XXX
Planetype: XXX
MaxCapacity: XXX
Frequency: XXX
Price:.XXX

FLIGHT SCHEDULE DETAILS:	
AirlineCode	XXXX
Name	XXX
Departure City	XXX
Destination Airport	XXX
FlightTime	XXX
Departure Time	XXX
ArrivalTime	XXX

Customer ID	Name of passenger	Customer Type	Weight of Luggage	Weight unit	Flight class	Travel Agency No

```
Date: 11.01.2017 Time: 15:19:18 Page No:1
```

2. Design the smartform to display the Customer-Flight Details

Step # 1. Go to smartforms t-code and design the smartforms with tables and templates based on the windows.

Step # 2. Go to smartstyles t-code and assign the same to the smartforms.

Step # 3. Go to smartforms t-code and create the textmodules and assign the same to the smartforms.

Step # 4. Go to SE38 t-code and write the main program logic for the smartforms and call the smartform from the driver program/Print Program.

Smartform Code Logic:

Reference T-Codes and Tables:

Tables: STRVELAG,SBUSPART,SCUSTOM

1. Input of the smartform should be Customer No from table SCUSTOM

2. Title window : Hardcoded text "CUSTOMER-FLIGHT DETAILS".

3. Address window : Get the BusPartner Details from table SBUSPART for customer no where SCUSTOM-ID = SBUSPART-BUSPARTNUM

4. Template window : Get the Customer Flight details from table SCUSTOM for customer no

5. Main window : Get the Customer booking line items details from table SBOOK for the customer number into the main window and display the data into the table format.

6. Footer Window : Provide the system fields for the Date, Time and Page No.

Note: as shown below output of the smartform data may not be the same in all the clietns or the servers.

Expected Output of the Smartform :

CUSTOMER-FLIGHT DETAILS

CONSULTING.TECHNOLOGY.OUTSOURCING

BusPartner Details:

Flight Partner Number: XXX
Business partner ID :XXX
Contact person : XXX
Telephone number: XXX

Customer Flight DETAILS:	
Customer No	XXXX
Customer Name	XXX
Street/City	XXX
Country	XXX
Telephone	
Email	

Airline Code	Connection Number	Flight date	Booking number	Weight	Flight Class	Agency no	Booking price(Local currency)

```
Date: 11.01.2017 Time: 15:19:18 Page No:1
```

Lab 4-1 Adobe Forms

Goals	• Understand and use the Adobe Interfaces and Forms.
Time	120 Minutes
Lab Setup	• Connectivity to SAP server • Login details for connecting to SAP server

1. Design the Adobeform to display the Flight Booking details.

Step # 1. Go to SFP t-code and creaet the Adobe Form Interface.

Step # 2. Go to SFP t-code and design the Adobe Form with tables and other properties as shown in the below screen.

Step # 3. Go to SE38 t-code and write the main program logic for the Adobe form and call the Adobe form from the driver program/Print program.

<u>Adobe Form Design Logic:</u>

<u>Reference T-Codes and Tables:</u>
Tables: SFLIGHT,SPFLI,SBOOK.

1. Input of the Adobe form should be the Customer Number ,Flight date and Airline Code(From table SBOOKS)

2. Hardcoded text "MY FLIGHT DETAILS " for Form Heading .

3. Get the corresponding Airline Code from table SBOOKS.

4. **"Flight Details"** and**"Flight schedule"** are Hardcoded text and data to be displayed based on the Airline Code and Connection

5. **Logic:**
   a) Get the **Flight details** from table SFLIGHT for the Connection Number(CARRID) and Airline Code no(CARRID) and Flight date(FLDATE)
   b) Get the **Flight schedule details** from table SPFLI for the Connection Number(CARRID) and Airline Code no(CARRID) .

6. Get the line item booking details from table SBOOKS and display the data in tabular format

7. As the footer display the message '**Refund will be made to you subject to applicable cancellation charges. No refunds will be made for cancellations inside 24 hours(Twenty-Four) prior to departure'**

8. Logo should be displayed only on the first page.(Use java script for this)

9. Footer should be displayed only on the last page.(Use Java Script for this)

Note: As shown below output of the Adobe form data may not be the same in all the clietns or the servers.

FLIGHT BOOKING DETAILS

Customer
No:XXXX

Flight
date: XXXX

Flight Details:

Airline Code: XXX
Connection XXX
Flight Date: XXX
Planetype: XXX
MaximumCapacity: XXX
Frequency: XXX
Price:.XXX

Flight Schedule details:

AirlineCode: XXXX
Name: XXX
Departure City : XXX
Destination Airport: XXX
FlightTime: XXX
Departure Time:XXX
ArrivalTime: XXX

Customer ID	Name of passenger	Customer Type	Weight of Luggage	Weight unit	Flight class	Travel Agency No

Terms and Conditions:
Refund will be made to you subject to applicable cancellation charges. No refunds will be made for cancellations inside 24 hours(Twenty-Four) prior to departure

Lab 6-1 Transports

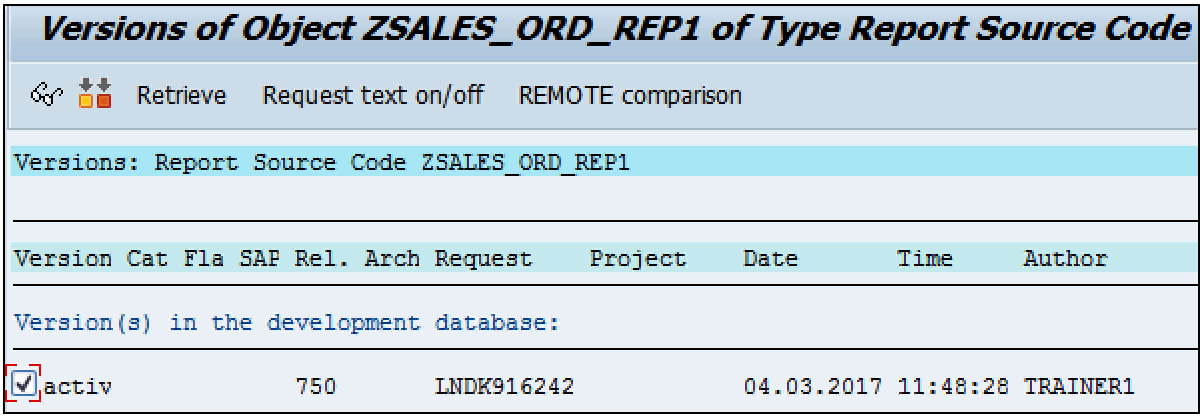
Goals	• How to Release the Objects from the DEV to QAS to PRD and to Understand the Version Management. DEV - Development System. QAS - Quality Assurance System. PRD - Production System.
Time	30 Minutes
Lab Setup	• Connectivity to SAP server • Login details for connecting to SAP server

1. Develop the ZObjects in DEV (Developmet) System and release the same to QAS(Quality) System by using the Trasportation.

Step # 1. Create a user defined package Eg: **ZCAP_PACKAGE** by using the T-Code SE21.

Step # 2. Create a user defined ZObject Eg **ZSALES_ORD_REP1** (Executable Program) and assign the same object to the package Eg:**ZCAP_PACKAGE**.

Step # 3. Go to the program and Navigate →Utilities and select the Versions→ Version Management to know the object request.



Versions of Object ZSALES_ORD_REP1 of Type Report Source Code

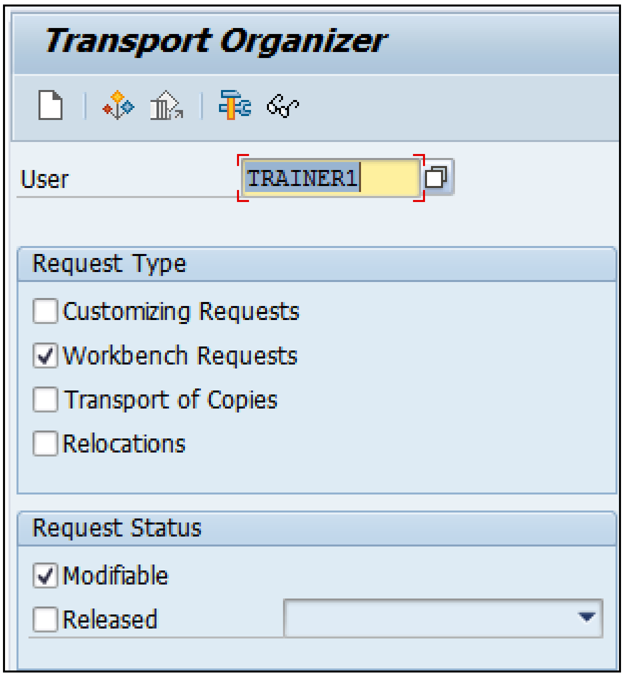
```
Versions: Report Source Code ZSALES_ORD_REP1

Version Cat Fla SAP Rel. Arch Request     Project     Date        Time     Author

Version(s) in the development database:

☑activ             750        LNDK916242              04.03.2017 11:48:28 TRAINER1
```

Step # 4. To see the modifiable objects, Select the Workbench Requests and Modifiable status check box by using the T-Code SE01/SE09/SE10.



Transport Organizer

User TRAINER1

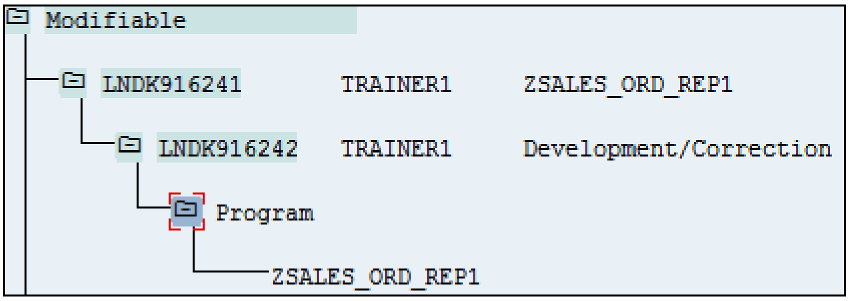
Request Type

☐ Customizing Requests
☑ Workbench Requests
☐ Transport of Copies
☐ Relocations

Request Status

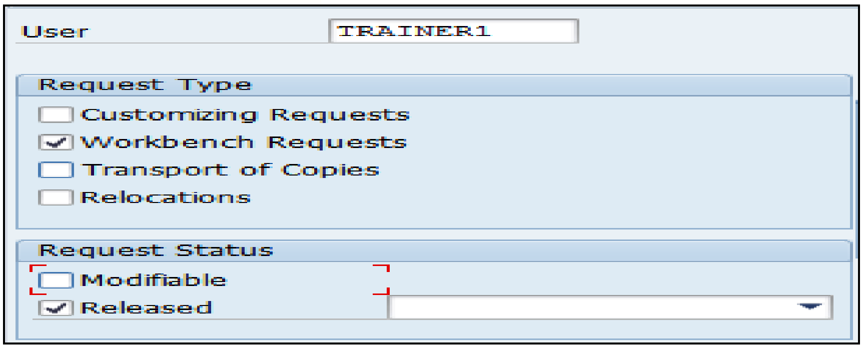
☑ Modifiable
☐ Released

Step # 5. Release the object task Eg: LNDK916242 and request number LNDK916241 by using the
T-Code SE01/SE09/SE10.



```
Modifiable
  LNDK916241      TRAINER1     ZSALES_ORD_REP1
    LNDK916242    TRAINER1     Development/Correction
      Program
        ZSALES_ORD_REP1
```

Step # 6. To see the Released objects, Select the Workbench Requests and Released status check box by using the T-Code SE01/SE09/SE10.



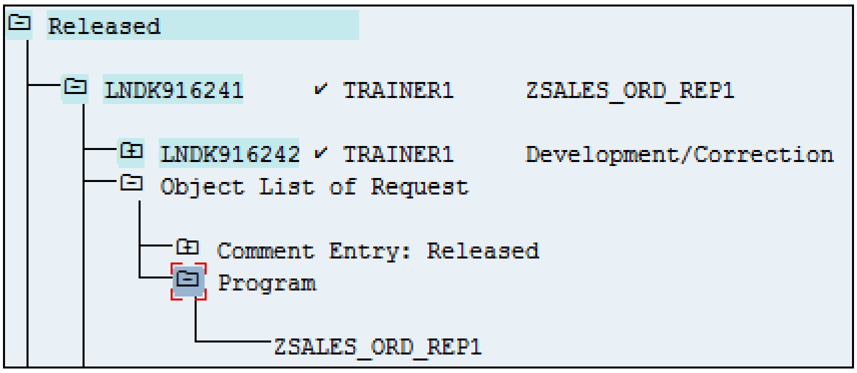
User TRAINER1

Request Type

- □ Customizing Requests
- ☑ Workbench Requests
- □ Transport of Copies
- □ Relocations

Request Status

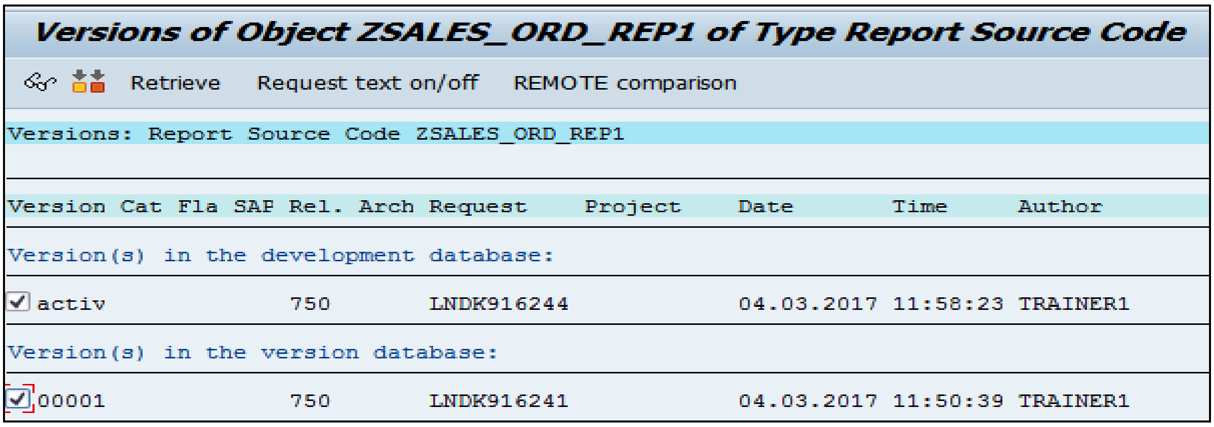
- □ Modifiable
- ☑ Released



```
Released
  LNDK916241      ✔ TRAINER1     ZSALES_ORD_REP1
    LNDK916242    ✔ TRAINER1     Development/Correction
    Object List of Request
      Comment Entry: Released
      Program
        ZSALES_ORD_REP1
```

Step # 7. Modify the program code(V2) after release and create the new task and repeat the above steps.

Go to the program and Navigate →Utilities and select the Versions→ Version Management to compare the two versions of V1 and V2 Code.



Versions of Object ZSALES_ORD_REP1 of Type Report Source Code

```
Versions: Report Source Code ZSALES_ORD_REP1

Version Cat Fla SAP Rel. Arch Request     Project     Date        Time     Author
Version(s) in the development database:
☑ activ             750       LNDK916244              04.03.2017 11:58:23 TRAINER1
Version(s) in the version database:
☑ 00001             750       LNDK916241              04.03.2017 11:50:39 TRAINER1
```