Enhancements (User Exits and Customer exits)

Link to Content’s target Space :
http://wiki.sdn.sap.com/wiki/x/

Applies to:
SAP ABAP, my SAP ECC 6.0, for more information, visit the ABAP homepage.

Summary
The enhancement concept allows you to add your own functionality to SAP’s standard business applications without having to modify the original applications. To modify the standard SAP behavior as per customer requirements, we can use enhancement framework. This document explains about User exits and Customer Exits.

Author(s): Tutun Nandy

Company: Infosys Technology Ltd
Created on: 20 May 2010

Author(s) Bio
Tutun Nandy is working with Infosys Technology Ltd since 2008. His expertise includes SAP ABAP.

Table of Contents
1) Overview of this document........................................................
2) User Exit with example............................................................
3) Customer Exit........................................................................
4) Types of Customer Exits..........................................................
5) Function Module exits............................................................
6) Screen Exist........................................................................
7) Menu Exits........................................................................
8) Methods to find out customer Exits...........................................
9) CMOD and SMOD transactions................................................

Overview of this document
The enhancement concept allows you to add your own functionality to SAP’s standard business applications without having to modify the original applications. To modify the standard SAP behavior as per customer requirements, we can use enhancement framework.

There are different ways to implement custom functionality in the SAP standard code. ex: User exits, customer exits, BADI etc. This document explains about User exits and Customer Exits.

User exits
These are implemented in the form of subroutines and hence are also known as FORM EXITs. The user exits are generally collected in includes and attached to the standard program by the SAP.

User exits are a type of system enhancement that was originally developed for the R/3 SD (Sales and distribution) module. User-exits are empty subroutines that SAP Developers have provided for you. You can fill them with your own source code. Technically this is a modification.

All User exits start with the word USEREXIT_
FORM USEREXIT_ XXXX....
INCLUDE ZZUSEREXIT......
ENDFORM.

User exits can be found in the following ways:
Go to Object Navigator (SE80), select Package and put VMOD (Application development R/3 SD customer modification) and press enter. You will find all the includes for user exits in SD. You will get User exits for Sales order, Delivery, Billing, Pricing etc. Most of the time documentation is maintained for each subroutine which helps developer for better understanding of the subroutine. Select the subroutine according to the requirement and start coding within the subroutine.

Examples:
- In User exits MV45AFZZ(Sales Order Exit), we have subroutine
  USEREXIT_PRICING_PREPARE_TKOMK
  USEREXIT_PRICING_PREPARE_TKOMP
  This user exit can be used to move additional fields into the communication table which is used for pricing. TKOMK for header fields and TKOMG for item fields. The fields which are not in either of the two tables KOMK and KOMP cannot be used in pricing.

  zvendpgm (Vendor Program), zpricegrp (Price Group), kvgr5(Airport Code)
  fields value moving from VBAP to KOMP table.

- In User exits MV50AFZ1( Delivery Exit), you have subroutine
  USEREXIT_SAVE_DOCUMENT_PREPARE_TKOMP
  This user exit can be used for changes or checks, before a document is saved.

Customer exits
SAP creates customer exits for specific programs, screens, and menus within standard applications. These exits do not contain any functionality. Instead, the customer exits act as hooks. You can hang your own add-on functionality onto these hooks. Customer exits are nothing but a include in customer name space will be provided in the function module which starts with CALL CUSTOMER. You can fill them with your own source code. Technically this is an enhancement. User exits generally refer to SD module while customer exits refer to all modules like MM, SD, PP, FICO etc.

Advantage:
- They do not affect standard SAP source code
- They do not affect software updates
Disadvantage:
- Customer exits are not available for all programs and screens found in the SAP System. You can only use customer exits if they already exist in the SAP System.

Types of Customer Exits
1. Function Module exits
2. Screen exits
3. Menu exits

1. Function Module exits
Function module exits are exits developed by SAP. The exit is implemented as a call to a function module. The code for the function module is written by the developer. You are not writing the code directly in the function module, but in the include that is implemented in the function module.
Format: CALL CUSTOMER-FUNCTION '910'
The naming standard of function modules for function module exits is:
  EXIT_<program name>_<3 digit suffix>
Examples:

Before User exits using: No error comes for any Country code.
Below Function Module Exits: EXIT_SAPMF02K_001.

We are writing our code in the Include ZXF05U01.

Country code like ‘IN’. Only permissible country code is ‘US’.

After User exits using: Error comes for any

logic. Format: CALL CUSTOMER-SUBSCREEN CUSTSCR1

3. Menu exits:
Menu exits allow you to add your own functionality to menus. Menu exits are implemented by SAP and are reserved menu entries in the GUI interface. The developer can add his/her own text and logic for the menu.
Function codes for menu exits all start with “+”.
Format: +CUS (additional item in GUI status)
Methods to find out customer Exits:
There are numbers of way by using we can find out Customer Exits.

Method # 1: Call customer
If you are searching customer exits based on particular transaction.

Go to Transaction. Ex: VA01.

Then system-> status

Double click on Program(screen).
Find (Ctrl+F)

Then use Call

customer and select in main program radio button tab and press Enter.

We can find out all the possible Customer exits based on this transaction.

Method # 2:
SMOD
Go to Transaction SMOD (SAP Enhancement).

Then Utilities-> Find
Packa
gage name and Execute (F8).

For Purchase Order package is ME.

We can find out all the possible Enhancement (Customer exits) based on this package.

Method # 3: SE84

Go to Transaction SE84.
Select Enhancements -> Customer Exits -> Enhancements

Give Package and Execute. We can find out all the possible Enhancement (Customer exits) based on this Package.

Method # 4: SE81
Go to Transaction SE81.

Click on Module name (ex: SD).
Then from top menu select Edit -> Select sub tree +/-.
Select Information System.

A new Screen will appear, it looks like SE84:
Then select Enhancements -> Customer Exits -> Enhancements.

Double click on Enhancements and Execute. We can find out all the possible Enhancement (Customer exits) based on this Module.

Method # 5:
ST05 Go to Transaction ST05. Select Table Buffer Trace & Activate Trace.

Then go to the transaction, based on which you want to see the customer exits. Come back to ST05, Deactivate Trace & display Trace. Then go to FIND & write text EXIT_ & press ENTER.

We can find out all the possible Enhancement (Customer exits) based on this Transaction. This is not a good technique to find out customer exits because all the possible exits may not be found out using this technique.
SAP Enhancements (SMOD): This transaction is used to see the list of objects in an enhancement. It is a container which holds many related objects within it.

If you double click on TEST button, you will get below screen.

From the above screen shot we can say that the Function Exit is already implemented (Green light) but in Inactive stage (Red light).

Project Creation (CMOD):
This transaction is used to create a project. Project is also a container, which holds several Enhancements. If we identify the User Exits and write down the code only within it, then the functionality will not be worked. That is why we require adding the enhancement into a project & making it active.

CMOD Transaction is used to create a project.

Select Enhancement assignments and you add your Enhancement in this project.

You can add multiple Enhancements in one project. But you can’t add one enhancement in multiple projects. Then error message will be generated.
Error message generate, because Enhancement 1 V45A0002 is already exist in other project.

From screen short no: 2 of CMOD description, if we click on Components, we will get the list of Customer exits belongs to these enhancements.

Both green light shows that the exit is already implemented & is Active stage.

Related Content

Not Applicable