GUI Controls defined

Purpose

The purpose of that page is to clarify the understanding of the GUI controls and their relevance when used in a client-server model.

Overview

This WIKI discusses what client controls are and their function within the client/server model SAP uses. It also provides information to find out and test a specific control in a SAP system.

What are GUI Controls?

"GUI controls are independent software components that run on the presentation server and are not part of the ABAP runtime environment of the application server."

A more practical definition of a GUI control would be: A GUI control is visual an element on the GUI screen which allows the user to enter, change or delete data. In that regards, a typical example can be: calendar control, the ALV, the tree control or a HTML control. These controls allow users to enter, edit or delete data.

The functions contained within GUI controls, such as scrolling through the texts (html control) or lists (ALV Grid), is performed on the presentation server (client) and free the application server of that work. On the other hand, GUI controls often work with large amounts of data, which is why frequent data transfers between the ABAP program (application server) and the GUI control (presentation server) can increase the load on the network (performance issue). From the developers perspective this means that the logic of a ABAP program should ensure that most of the work can be performed on the client and that synchronization with the backend (application server) is limited to the minimum.

There much more other GUI controls which unfortunately do not meet our practical definition, but they are at least visual elements which can alter or control the visual appearance of the GUI screen: Custom Container, Docking Container, Splitter Container, or a Tab-Strip. The technology of independent software components is the same like in all other GUI Controls, but these controls are not intended to carry any data -- They are intended to display a picture (like the Picture Container) or to control the alignment of other controls (Splitter Container).

Digression: The Control Framework

The definition of a GUI control states that "GUI controls are independent software components" -- independent in what way? We have to understand that communication between the GUI control and the ABAP program: In classical screen processing (not using any GUI control) an ABAP program communicates with the SAP-specific screen elements on the layout of a screen. GUI controls, on the other hand, are software objects with independent interfaces that are not connected to the classical data flow between the application server and presentation server. Communication between the ABAP program and the control is provided instead by the Control Framework (CFW), which contains components in the runtime environment of the application server as well as in an Automation Controller on the presentation server. The main feature of the CFW is that there is a global class in the class library for each GUI control supplied. The CFW forwards its method calls to the actual GUI control objects and informs the objects of the ABAP program by triggering events about the user actions on the GUI control.

The Control Demo Center:

To differentiate between controls in a SAP system, the following can be used:

- Enjoy Demo center: Transaction dwdm
- Style Guide: Transaction bibs

The Enjoy Demo Center provides numerous show case transactions and reports that have been created in ABAP using GUI Control techniques. Many user interfaces including the ABAP Workbench itself have been redesigned for the new EnjoySAP Release. These examples demonstrate how to divide up a screen into different areas using docking and splitter GUI controls, and how to use tree control to display hierarchies.
Welcome to the Enjoy Demo Center.
To start a demo, simply double-click on its title.
To display the corresponding code, drag the title and drop it in the editor window right here.