

ABAP DICTIONARY USED IN WEB DYNPRO APPLICATION

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ABSTRACT:

This paper presents the most important ABAP Dictionary repository objects through an example application made in Web Dynpro ABAP. Web Dynpro ABAP applications are built using the Model View Controller design pattern where the User Interface can be defined without the need of HTML or JavaScript.

KEYWORDS:

ABAP Dictionary, Web Dynpro ABAP, framework, ABAP programming

1. INTRODUCTION

The ABAP Dictionary manages and describes the data definitions used in the system and this paper presents the most important ABAP Dictionary repository objects, from database tables, data elements, structure, domain, F1 Help until search-help. For a better understanding of this repository object, we use it to build a product presentation page developed in Web Dynpro ABAP on a SAP NetWeaver platform release 7.0 level 15.

Web Dynpro ABAP is the SAP technology to develop business applications where the model, the view together with the controller are the three fundamental building blocks from which an application can be constructed. The Web Dynpro main concept is to reduce development time and to maximize reusability, all Web Dynpro applications use the Model View Controller design pattern.

2. WEB DYNPRO ABAP

The Model View Controller pattern is probably the most famous of all patterns, used extensively for both serious and fun purposes [1].

The architecture of a typical MVC implementation is presented in fig.1 [2]

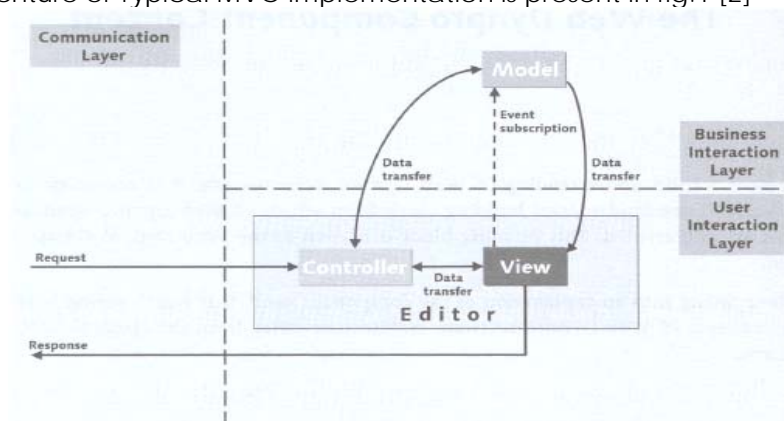


Fig. 1 The architecture of Typical MVC implementation

The Web Dynpro Model View Controller have some modification from the typical arhitecture. We mention: Web Dynpro Framework that it is responsible with the execution of our application, make the communication between the client and the server and communicate with our application through the Hook Methods.

Our Web Dynpro application have 4 sections: Home, Body Care, Nutrition and Skin Care. The home section presented general infos und make external lincks to the web site from other countrys, the Body Care section together with Nutrition and Skin Care present the adequately products. We have build this application to illustrate the use of ABAP Dictionary repository Objects and we make that in fallow sections.

3. ABAP Dictionary repository objects use in our application

For presentation of the most use repository ojects that we can create in ABAP Dictionary we have develop a example Web Dynpro application for Unicity product presentation. The images and the product information use to build this application are take from Reference [3].

We have to mention that ABAP Dictionary is completely integrated in the ABAP Workbench – transaction SE11.

3.1. Database Table

The most important ABAP Dictionary repository objects and concomitantly the most comun data storage for a Web Dynpro application are Tables. A table definition in the ABAP Dictionary contains the following components [4]: table fields, foreign keys, technical settings and indexes.

In fig. 1 we present the part from application that present the nutritional products.

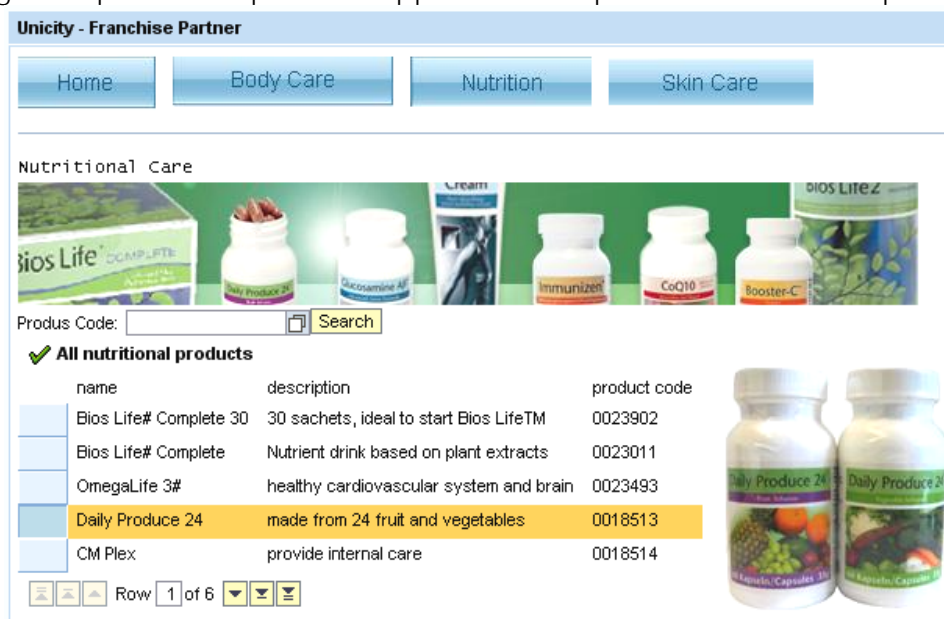


Fig. 1 Web Dynpro application, Nutrition products

The product presented are separated in three categorys: Body Care, Nutrition and Skin Care and the data show in our User Interface are storage in three Database Tables - fig. 2.

Database Tables	
YTAB_BODYCARE	body care products table
YTAB_NUTRITION	nutrition products table
YTAB_SKINCARE	skin care products table

Fig. 2 Database Tables use in our application

The Table ytab_nutrition was use to store nutrition products and have the structure present in fig. 3.

Field	Key	Initi...	Data element	Data Ty...	Length	Deci...	Short Description
CLIENT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3	0	Client
CODE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	YCODE_N	NUMC	7	0	nutrition product code
NAME	<input type="checkbox"/>	<input type="checkbox"/>	YNAME_N	CHAR	30	0	nutrition product name
IMAGE1	<input type="checkbox"/>	<input type="checkbox"/>	YIMAGE_N	CHAR	20	0	nutrition product image
DESCRIPTION	<input type="checkbox"/>	<input type="checkbox"/>	YNDESCRIPTION	CHAR	70	0	nutrition product description

Fig. 3 Structure of ytab_nutrition table

The first field it is a SAP specific field (client field) need to entry a three character client ID that represent the client that we use to login into system – Client Data element MANDT it is predefined of type CLNT, lenght 3 und schort description Client.

The others fields define the columns of our ytab_nutrition table: code – unique key, name, image1 and description.

3.2. Data elements

For the fields of the tables present in fig. 2 we have use types specific our application, repository objects that we have create in ABAP Dictionary with transaction SE11. We present in fig. 4 the structure of the Data Element YCODE_N.

	Length	Field Label
Short	5	code
Medium	15	product code
Long	22	nutrition product code
Heading	22	nutrition product code

Fig. 4. The structure of the Data Element YCODE_N

Using Predefined Type we may set properties such as data type –NUMC and Lenght – 7 and using the Field Label tab we may set the label that it is automatically show in the Label or Caption of the Web Dynpro application.

After activation the data element it is release for use.

3.3. Domain with fixed values

A domain defines a value range - fig. 5 a and to may use it in the Web Dynpro ABAP, in a DropDownByKey UI Element, we have to assigned to a data element – fig.5 b.

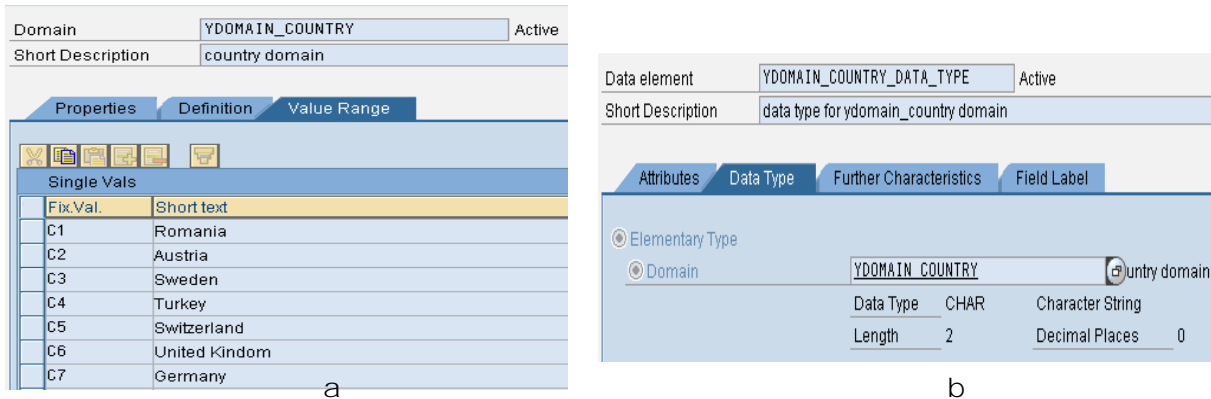


Fig. 5 Domain with fixed values

We use the data element YDOMAIN_COUNTRY_DATA_TYPE in the HOME section of our Web Dynpro application fig. 6. We create a attribut of this type and we make a data binding to the propertie SelectedKey of the DropDownByKey UI Element. When the user select a country from the list we open the proper external window.

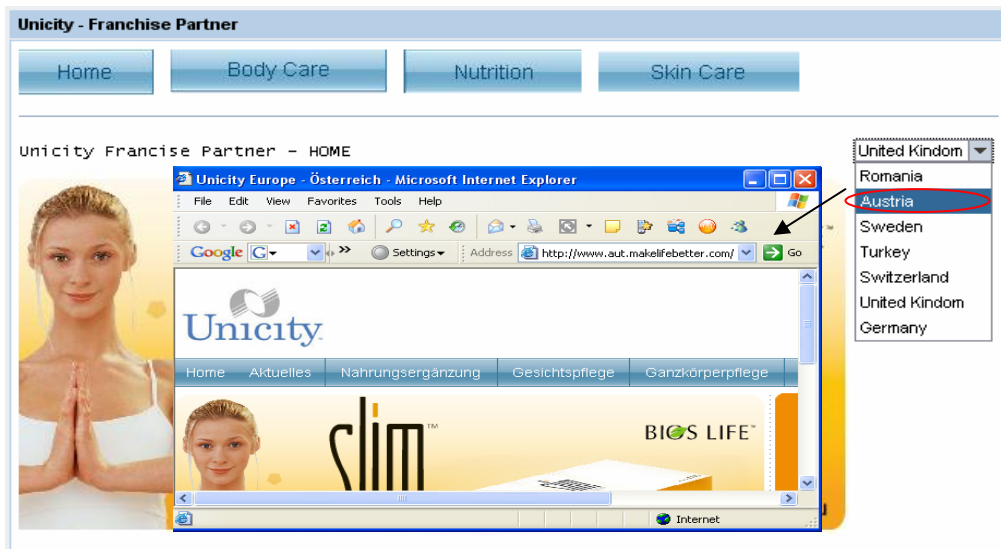


Fig. 6 The use of a Domain with fixed values

3.4. F1 Help

F1 Help it is use for show a help text for the user. We can store this help text in the ABAP Dictionary for each element. With the F1 key the user can show this text in a new window.

The data element YDOMAIN_COUNTRY_DATA_TYPE have the documentation show in fig. 7.

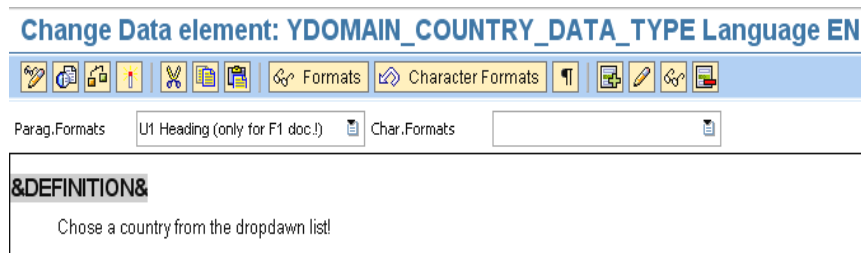


Fig. 7 Documentation for a data element

When the user press F1 for the DropDownByKey UI Element a window with the proper documentation it is open, fig. 8.

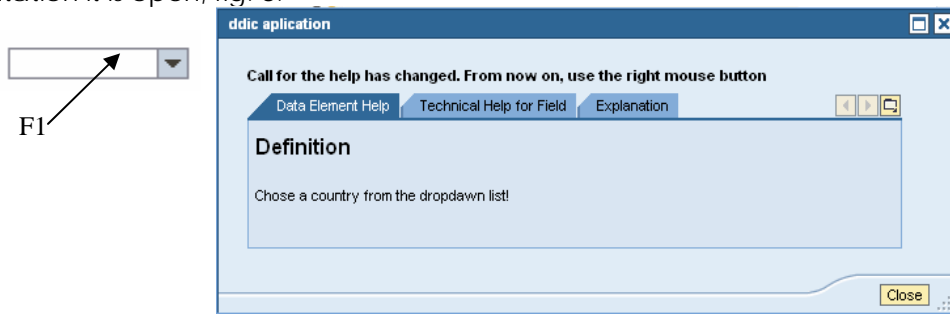


Fig. 8 Show documentation for DropDownByKey

3.5 Search Help

Search help or F4 help it is a function of R/3 System. We can have elementary search help and collectiv search help. In fig. 9 we present a elementary search help use for the table YTAB_BODYCARE.

We have use the code field for a search in Web Dynpro application. When we select a name and a description from the selection list, the associated product code from the table will be placed into the input fiel, fig. 10.

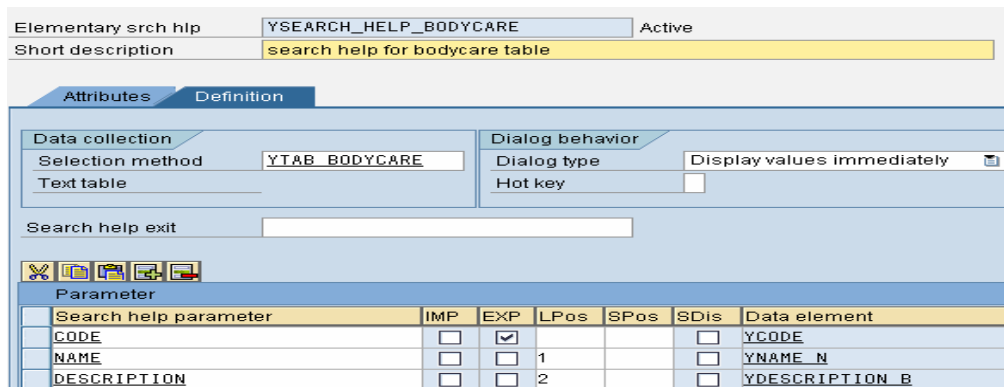


Fig. 9 Search Help for the table YTAB_BODYCARE

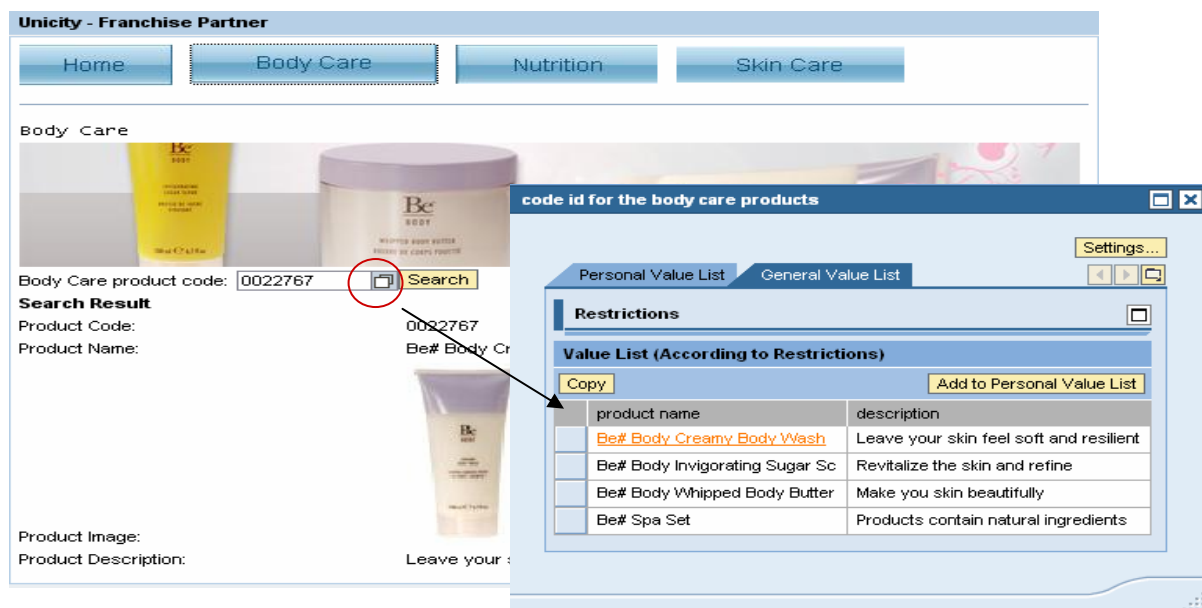
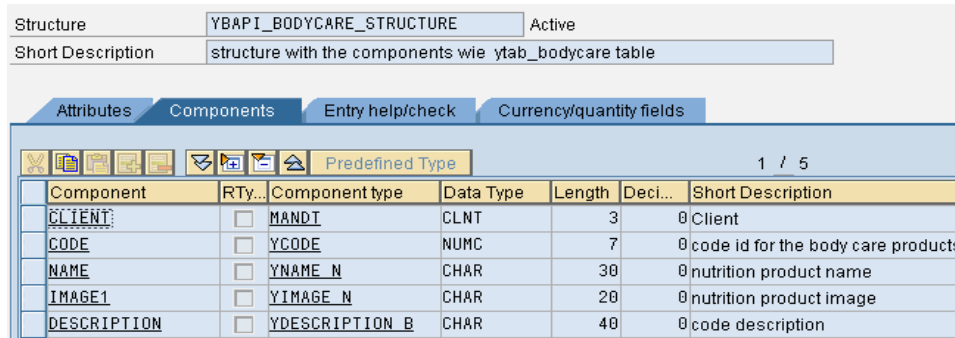


Fig. 10 Search Help in Web Dynpro ABAP

A collective Search Help it is a grouping of searches but each of individual search help must have at least one parameter in commun.

3.6. Structure

Structures are composed of any combination of other data types of ABAP Dictionary: data elements, views, table types, others structures, etc. In fig. 11 we present a structure with the same components as the table YTAB_BODYCARE.



Component	RTy...	Component type	Data Type	Length	Deci...	Short Description
CLIENT	<input type="checkbox"/>	MANDT	CLNT	3		Client
CODE	<input type="checkbox"/>	YCODE	NUMC	7		code id for the body care products
NAME	<input type="checkbox"/>	YNAME_N	CHAR	30		nutrition product name
IMAGE1	<input type="checkbox"/>	YIMAGE_N	CHAR	20		nutrition product image
DESCRIPTION	<input type="checkbox"/>	YDESCRIPTION_B	CHAR	40		code description

Fig. 11 The structure components

This structure was use for the BAPI, that was import als model in Web Dynpro application.

4. CONCLUSIONS

ABAP Dictionary have a important role becouse manages and describe the data definitions used in the system. With the help of Web Dynpro ABAP we have show the way we can build and use the most important ABAP Dictionary repository objects.

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