Functional Specifications as XML Data Type Schema

Assisted Living Application

For HealthWare Solutions International - Baltimore, MD   8/1 - 10/15/98

At the onset of the re-tooling of their **healthcare application, HealthWare Solutions** had a customer base of approximately 50 hospital users operating in a Unix environment with an Oracle database. They obtained additional funding from investors and entered into a partnership with the CNA Health Partner Management Services Organization to embark on the enhancement of their product to serve **assisted living and nursing home** venues. The new application would be cross-platform and would provide complete management of services - clinical, administrative and financial, with technology interfaces for HL7 and MDR requirements.

Java was chosen as the application framework, riding over the existing Oracle database, using XML as the publishing top layer. Traditional functional specifications had been written, working from defined user requirements provided by CNA and the prime beta tester, Boston Financial.

When we joined the organization as information design and database consultant, we revised the functional specification format to take advantage of XML's ability to define data types to suit an application. Healthcare industry standards could be incorporated if they existed.

The following is an example of that **schema** for a proposed **Pre-entrance Inquiry form for the Assisted Living** application. We used the proposed data element designations as pre-designed by the lead architect to incorporate data types and their attributes that directly addressed the defined user requirements. This document could be understood and edited by both the user and the programmer.

1 Organization Of This Document

This document follows the XML schema format to define the structure of data to be utilized by the Java application framework. DISPLAY, PROMPT and HEADING elements (shown in **Bold**) reflect the text the user will see. When the cursor is passed over the text, help information contained in the TIP element will be displayed. The Comments field is used to give additional directions to the programmer or to raise a question for the subject matter expert.

2 Data Table

SelectionScreen OPTIONS Block	
<GROUP>	Person Name Search
<PRIMARY>	Person
<DISPLAY>	**Name Search**
<NEWBUTTON/>	Yes
Comments	User types the name of the inquirer to determine if it is already in the system. If not, the information can be typed as new.

SelectionScreen CRITERIA Block	
<ELEMENT>	Last Name
<PROMPT>	**Type a last name to search for a person**

SelectionScreen COLUMN Block	
<ELEMENT>	Last Name
<TITLE>	**Name**

FORM <NAME>	Pre Entrance Inquiry
SECTION	
<NAME>	Pre-Entrance Inquirer Identifying Info
<DISPLAY>	**Pre-Entrance Inquirer Identifying Information**
<GROUP>	Person
<MULTIPLE/>	Yes
<NEWBUTTON/>	Yes
<H1>	**Identifying Information**
<H2>	**Name**
<H2>	**Relationship**
<L1>	**Type a relationship not listed**
<H2>	**Address**
<H2>	**Phone**
<H2>	**E-Mail**

FIELD for Pre-Entrance Inquirer Identifying Info	
ELEMENT <NAME>	Inquirer Name
<DATATYPE>	NameType
<REQUIRED/>	YES
<PROMPT>	**Name**
<TIP>	**Type last name, first name, middle name or initial. You can use a title and suffix if necessary.**
Comments	Include: LastName, FirstName, MiddleName or Initial, Title, Suffix

FIELD for Pre-Entrance Inquirer Identifying Info	
ELEMENT <NAME>	Inquirer Relationship
<DATATYPE>	ListType
<CODELIST>	Relationship
<COMPONENT>	ComboBox
<REQUIRED/>	YES
<PROMPT>	**Relationship**
<TIP>	**Select the relationship of the inquirer to the applicant, or type a relationship not listed**

CODELIST Block <Relationship>								
<CODE>	1	2	3	4	5	6	7	8
<DISPLAY>	**Cousin**	**Daughter**	**Daughter-in-Law**	**Friend**	**Grand-daughter**	**Grandson**	**Immediate Family**	**Niece**
<CODE>	9	10	11	12	13	14	15	
<DISPLAY>	**Nephew**	**Professional**	**Referral**	**Spouse**	**Son**	**Son-in-Law**	**Unknown**	
Comments	This is a generic Relationship code list used throughout the application ComboBox type allows text entry for a category not listed. • *Need to clarify what "Immediate Family" means.*							

FIELD for Pre-Entrance Inquirer Identifying Info	
ELEMENT <NAME>	Inquirer Address
<DATATYPE>	AddressType
<CODELIST>	State AddressCategory
<COMPONENT>	RadioGroup
<REQUIRED/>	Yes
<PROMPT>	**Address**
<TIP>	**Type the address of the inquirer and select the category**
Comments	Include: Street Line1, Street Line2, City, County, State, Zip Code, Category

CODELIST Block <State>	
<CODE>	1, etc.
<DISPLAY>	**Alabama, etc**
Comments	Include: all 50 states, territories and Canadian Provinces

CODELIST Block <AddressCategory>				
<CODE>	1	2	3	4
<DISPLAY>	**Permanent**	**Temporary**	**Work**	**Other**
Comments	"Permanent" is the default. Allow user to make a different selection.			

FIELD for Pre-Entrance Inquirer Identifying Info	
ELEMENT <NAME>	Inquirer Phone
<DATATYPE>	PhoneType
<CODELIST>	PhoneCategory
<COMPONENT>	RadioGroup
<REQUIRED/>	Yes
<PROMPT>	**Phone**
<TIP>	**Type the inquirer phone number and select the category. More than one phone number can be typed.**
Comments	Include AreaCode, PhoneNumber, space for extension. Allow for entry of more than one phone number.

CODELIST Block <PhoneCategory>					
<CODE>	1	2	3	4	5
<DISPLAY>	**Home**	**Work**	**Fax**	**Cellular**	**Other**
Comments	Home is the default. Allow user to make a different selection.				

FIELD for Pre-Entrance Inquirer Identifying Info	
ELEMENT <NAME>	Inquirer Email
<DATATYPE>	EmailType
<PROMPT>	**Email Address**
<TIP>	**Type the inquirer E-mail address**

FORM <NAME> Pre Entrance Inquiry	
SECTION	
<NAME>	Pre-Entrance Inquiry Contact Info
<DISPLAY>	**Pre-Entrance Inquiry Contact Information**
<GROUP>	Pre-Entrance Contact Information
<MULTIPLE/>	Yes
<NEWBUTTON/>	Yes
<H1>	**Contact Information**
<H2>	**Date/Time of Inquiry**
<H2>	**Marketing Staff Assignment**
<H2>	**Status of Contact**
<H2>	**How did the inquirer hear about us?**
<H2>	**Why is the inquirer interested in our facility?**
<H2>	**Others involved in decision**
<H2>	**Comments**

FIELD for *SECTION* Pre-Entrance Inquiry Contact Information	
ELEMENT <NAME>	DateTime Inquiry
<DATATYPE>	DateTimeType
<REQUIRED/>	Yes
<PROMPT>	**Date and Time of Inquiry**
<TIP>	**Accept the displayed date and time or type a change if necessary**
Comments	Current date/time is default. Allow user to modify.

FIELD for *SECTION* Pre-Entrance Inquiry Contact Information	
ELEMENT <NAME>	MktStaffAssign
<DATATYPE>	ListType
<CODELIST>	MktgStaff
<REQUIRED/>	Yes
<PROMPT>	**Marketing staff member assigned this contact**
<TIP>	**Choose the appropriate person from the list of Marketing staff**

* *