System And Method For Building Wireless Applications With Intelligent Mapping Between User Interface And Data Components

ABSTRACT

A system and method is described for effective management of a User Interface (UI) of a wireless device by implementing direct mapping between the application data domain and UI screens and controls. The device has an intelligent wireless device runtime environment (Device Runtime) that provides a set of basic services to manage the wireless application, including a series of linked screen and data component definitions, and their interactions can simplify the development effort and reduce resource allocation. The data domain for this category of applications is defined using the atomic data component definitions. The communication between a device user interface and data components is defined using atomic screen component definitions. Both screen and data component definitions are described in metadata using a structured definition language such as XML. The relationships between the screen and data component definitions are embedded in the XML definitions in the form of screen/data mappings. Typically, rendered screens for display are derived from some underlying data component and screens controls affected by user events impact the current state (or data representation) of the application Changes to the application domain data are automatically synchronized with the user interface, and user-entered data is automatically reflected in the application domain data. The primary mechanism behind this synchronization is the mapping of screens and data. This mechanism enables creation of dynamic and interactive screens. All changes to the data component can be immediately reflected on the screen and vice versa. This model allows building effective wireless applications based on server-to-device notifications. The data updates asynchronously pushed from the server are instantaneously reflected at the UI screen.

Figure 1