

**REPRESENTING DOCUMENT OPTIONS,
PROPERTIES AND BACKWARDS
COMPATIBILITY SETTINGS USING A
MARKUP LANGUAGE**

RELATED APPLICATIONS

This patent application is a continuation-in-part application under 35 United States Code § 120 of U.S. patent application Ser. No. 10/187,060 filed on Jun. 28, 2002, which is incorporated herein by reference. An exemplary schema in accordance with the present invention is disclosed in a file entitled Appendix.txt in a CDROM attached to an application entitled "Mixed Content Flexibility," Ser. No. 10/726,077, filed Dec. 2, 2003, which is hereby incorporated by reference in its entirety.

COMPUTER PROGRAM LISTING APPENDIX

A computer listing is included in a Compact Disc appendix in the attached CD ROM (quantity of two) in IBM-PC using MS-Windows operating system, containing file Appendix.txt, created on Nov. 2, 2006, containing 85,282 bytes (Copy 1 and Copy 2) and is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

Markup Languages have attained wide popularity in recent years. One type of markup language, Extensible Markup Language (XML), is a universal language that provides a way to identify, exchange, and process various kinds of data. For example, XML is used to create documents that can be utilized by a variety of application programs. Elements of an XML file have an associated namespace and schema.

In XML, a namespace is a unique identifier for a collection of names that are used in XML documents as element types and attribute names. The name of a namespace is commonly used to uniquely identify each class of XML document. The unique namespaces differentiate markup elements that come from different sources and happen to have the same name.

XML Schemata provide a way to describe and validate data in an XML environment. A schema states what elements and attributes are used to describe content in an XML document, where each element is allowed, what types of text contents are allowed within it and which elements can appear within which other elements. The use of schemata ensures that the document is structured in a consistent manner. Schemata may be created by a user and generally supported by an associated markup language, such as XML. By using an XML editor, the user can manipulate the XML file and generate XML documents that adhere to the schema the user has created. XML documents may be created to adhere to one or more schemata.

Electronic documents are often edited by using various applications that are different from each other. For example, a document can be written by using a first application, and then saved in a native format of the first application. When a second application that is different from the first application reads the saved document, it must "understand" the native format of the first application in order for the saved document to be used by the second application. When (as in the present) the numbers of different applications increase, the authoring and maintenance of the multiple import schemes quickly becomes burdensome.

SUMMARY OF THE INVENTION

The present invention is directed towards representing the native document settings of an application in a markup language such as XML. Applications that are capable of parsing the markup language are then able to parse the saved document settings and handle the document accordingly. Document settings saved in XML are human-readable, which simplifies maintenance of the document by humans.

According to one aspect of the invention, a computer-readable medium having computer-executable components comprises three components. The first component is arranged to edit an electronic document comprising automatically generated document properties. The second component is arranged to prompt and receive custom properties for the electronic document from a user. The third component is arranged to encode in an ML format the electronic document, the automatically generated document properties, and the custom properties received from the user.

According to another aspect of the invention, a method for handling properties of electronic documents comprises editing an electronic document comprising automatically generated document properties. Custom properties for the electronic document are prompted and received from a user. The electronic document, the automatically generated document properties, and the custom properties received from the user are encoded in an ML format.

According to yet another aspect of the invention, a system for displaying and modifying electronic documents comprises an electronic document file, an editor, and an encoder. The electronic document file comprises automatically generated document properties. The editor is arranged to prompt and receive custom properties for the document from a user. The encoder is arranged to encode in an ML format the electronic document, the automatically generated document properties, and the custom properties received from the user.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates an exemplary computing device that may be used in one exemplary embodiment of the present invention.

FIG. 2 is a block diagram illustrating an exemplary environment for practicing the present invention.

FIG. 3 illustrates an exemplary ML file in accordance with aspects of the present invention.

FIG. 4 illustrates an exemplary document properties element, in accordance with aspects of the present invention.

FIG. 5 illustrates an exemplary custom document properties element, in accordance with aspects of the present invention.

FIG. 6 illustrates an exemplary compatibility element, in accordance with aspects of the present invention.

FIG. 7 illustrates an exemplary document properties element having user-defined arbitrary strings, in accordance with aspects of the present invention.

FIG. 8 illustrates an exemplary document preservation element, in accordance with aspects of the present invention.

FIG. 9 illustrates of a process flow for representing document options, properties and backwards compatibility settings using XML, in accordance with aspects of the invention.

DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENT

Throughout the specification and claims, the following terms take the meanings explicitly associated herein, unless the context clearly dictates otherwise.