



US006915301B2

(12) **United States Patent**
Hirsch

(10) **Patent No.:** **US 6,915,301 B2**
(45) **Date of Patent:** **Jul. 5, 2005**

(54) **DYNAMIC OBJECT PROPERTIES**

(75) Inventor: **Peter Douglas Hirsch, Danville, CA (US)**

(73) Assignee: **International Business Machines Corporation, Armonk, NY (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 669 days.

(21) Appl. No.: **09/139,808**

(22) Filed: **Aug. 25, 1998**

(65) **Prior Publication Data**

US 2002/0059293 A1 May 16, 2002

(51) **Int. Cl.⁷** **G06F 7/00**

(52) **U.S. Cl.** **707/102; 717/100**

(58) **Field of Search** 707/102, 103, 707/104, 904, 907, 911; 345/112, 116, 123, 127, 133, 141, 150, 153, 333, 334, 335, 352, 356, 357, 961, 968; 717/100-167

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,555,365	A	*	9/1996	Selby et al.	395/159
5,603,025	A		2/1997	Tabb et al.	395/602
5,603,034	A	*	2/1997	Swanson	717/1
5,619,708	A	*	4/1997	Ho	395/767
5,694,608	A	*	12/1997	Shostak	395/767
5,740,455	A	*	4/1998	Pavley et al.	707/515
5,809,266	A	*	9/1998	Touma et al.	345/340
5,809,297	A	*	9/1998	Kroenke et al.	707/102
5,918,053	A	*	6/1999	Graham	717/4
5,956,479	A	*	9/1999	McInerney et al.	395/183.14

5,999,944	A	*	12/1999	Lipkin	707/104
6,002,867	A	*	12/1999	Jazdzewski	395/701
6,052,693	A	*	4/2000	Smith et al.	707/104
6,067,548	A	*	5/2000	Cheng	707/103
6,088,698	A	*	7/2000	Lipkin	707/1
6,263,339	B1	*	7/2001	Hirsch	707/102
6,282,547	B1	*	8/2001	Hirsch	707/102

OTHER PUBLICATIONS

Peter Wright, "Working with Visual Modeler," Beginning Visual Basic 6 Objects, Wrox Press Ltd., 398-433.

* cited by examiner

Primary Examiner—Mary Cheung

(74) *Attorney, Agent, or Firm*—Michael J. Buchenhorner; Ray Strimaitis

(57) **ABSTRACT**

A computer operated apparatus for generating a visual information system is disclosed. A virtual world associated with an application is built using building blocks such as scenes, data sources, global parameters, and resources. A scene is a visual display of information much like a presentation slide, except that the information may be linked to data stored in a database or other data storage systems. Within a scene, values resulting from a data source are represented graphically as user-defined data elements. Data sources are built with a block diagramming tool which generates one or more database queries. The queries may be SQL queries. Scenes are created with a drawing editor which transparently binds data sources to the graphical elements of the scenes. When the virtual world is completed, an execution image of the virtual world may be represented as byte code. The byte code representing the virtual world may be executed by a runtime control to provide desired information to users.

24 Claims, 16 Drawing Sheets

