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(54) **OBJECT MODEL MAPPING AND RUNTIME ENGINE FOR EMPLOYING RELATIONAL DATABASE WITH OBJECT ORIENTED SOFTWARE**

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G06F 17/30 (2006.01)

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,525,780	A	6/1985	Bratt et al.
4,853,843	A	8/1989	Ecklund
4,864,497	A	9/1989	Lowry et al.
4,930,071	A	5/1990	Tou et al.
4,953,080	A	8/1990	Dysart et al.
4,989,132	A	1/1991	Mellender et al.
5,008,853	A	4/1991	Bly et al.
5,010,478	A	4/1991	Deran
5,079,695	A	1/1992	Dysart et al.
5,093,914	A	3/1992	Coplien et al.
5,113,522	A	5/1992	Dinwiddie, Jr. et al.
5,125,091	A	6/1992	Staas, Jr. et al.
5,129,083	A	7/1992	Cutler et al.
5,129,084	A	7/1992	Kelly, Jr. et al.
5,136,712	A	8/1992	Perazzoli, Jr. et al.

(Continued)

FOREIGN PATENT DOCUMENTS

CA	2147421	10/1995
WO	WO 97/07470	2/1997
WO	99/09494	2/1999

OTHER PUBLICATIONS

http://www.pcmag.com/encyclopedia_term/0,2542,t=runtime+engine&i=56079,00.asp.*

Microsoft Press. Computer Dictionary. 3rd Edition, pp. 448–449. 1997.*

Arthur M. Keller, Richard Jensen and Shailesh Agarwal, Persistence Software: Bridging Object–Oriented Programming and Relational Databases, pp. 523–528 (1993).

(Continued)

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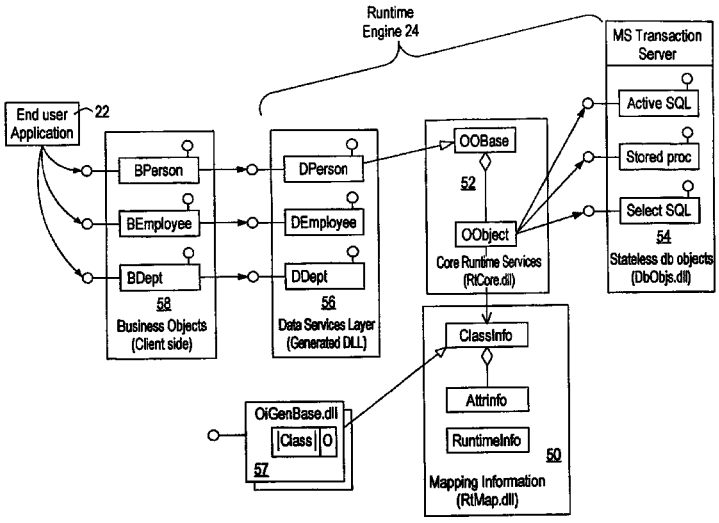
(57) **ABSTRACT**

A mapping between an object model and a relational database is generated to facilitate access to the relational database. The object model can be created from database schema or database schema can be created from the object model. Further, the mapping can be automatically generated. The Database schema, object model and mapping are employed to provide interface objects that are utilized by a runtime engine to facilitate access to the relational database by object oriented software applications.