

US005297279A

Patent Number:

Date of Patent:

[11]

[45]

5,297,279

Mar. 22, 1994

United States Patent [19]

Bannon et al.

[54] SYSTEM AND METHOD FOR DATABASE MANAGEMENT SUPPORTING OBJECT-ORIENTED PROGRAMMING

[75] Inventors: Thomas J. Bannon, Dallas; Stephen J.

Ford; Vappala J. Joseph, both of Plano; Edward R. Perez, Dallas; Robert W. Peterson; Diana M. Sparacin, both of Plano; Satish M. Thatte, Richardson; Craig W. Thompson, Plano; Chung C. Wang; David L. Wells, both of Dallas, all of

Tex.

[73] Assignee: Texas Instruments Incorporated,

Dallas, Tex.

[21] Appl. No.: 531,493

[22] Filed: May 30, 1990

[56] References Cited

U.S. PATENT DOCUMENTS

4,525,780	6/1985	Bratt et al	395/650
4,853,842	8/1989	Thatte et al	395/425
4,989,132	1/1991	Mellender et al	395/425
5,075,842	12/1991	Lai	395/425
5,075,845	12/1991	Lai et al	395/425
5,075,848	12/1991	Lai et al	395/425
5,079,695	1/1992	Dysart et al	395/700

OTHER PUBLICATIONS

Stephen Ford, et al., 'Zeitgeist: Database Support for Object-Oriented Programming'; Advances in Object-Oriented Database Systems, 27 Sep. 1988, Ebernburg, Germany, pp. 23-42.

R. Agrawal, et al., 'ODE (Object Database and Environment): The Language and The Data Model'; SIG-MOD RECORD, vol. 18, No. 2, 31 May 1989, Portland, Oreg., USA, pp. 36-45.

A Straw, et al., 'Object Management in a Persistent Smalltalk System', Software Practice & Experience, vol. 19, No. 8, Aug. 1989, CHICHESTER GB, pp. 719-737.

Peter Lyngbaek, et al. "A Data Modeling Methodology for the Design and Implementation of Information Systems", Int'l Workshop on Object-Oriented Databases Systems, 1986,p. 6+.

Kevin Wilkinson, et al. "The IRIS Architecture and Implementation", IEEE Trans. on Knowledge and Data Engineering, V2N1 Mar. 1990, pp. 63+.

David Maier, et al. "Development of an Object-Oriented DBMS", Object-Oriented Programming: Systems, Languages and Applications (OOPSLA) 1986. pp. 472+.

Timothy Andrews, et al. "Combining Language and Database Advances in an Object-Oriented Development Environment", Object-Oriented Programming: Systems, Languages and Applications (OOPSLA) 1987. pp. 430+.

Won Kim, et al. "Integrating an Object-Oriented Programming System with a Database System", Object-Oriented Programming: Systems, Languages and Applications (OOPSLA) 1988. pp. 142+.

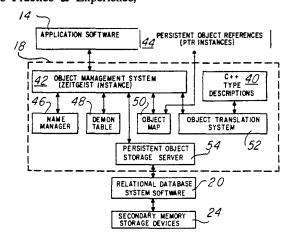
(List continued on next page.)

Primary Examiner—Paul V. Kulik
Assistant Examiner—John C. Loomis
Attorney, Agent, or Firm—Richard A. Stoltz; Richard L.
Donaldson; William E. Hiller

[57] ABSTRACT

A system and method for database management for providing support for long-term storage and retrieval of objects created by application programs written at least in part in object-oriented programming languages consists of a plurality of software modules. These modules provide data definition language translation, object management, object translation, and persistent object storage service. Such system implements an object fault capability to reduce the number of interactions between the application, the database management system, and the database.

4 Claims, 5 Drawing Sheets





Page 2

OTHER PUBLICATIONS

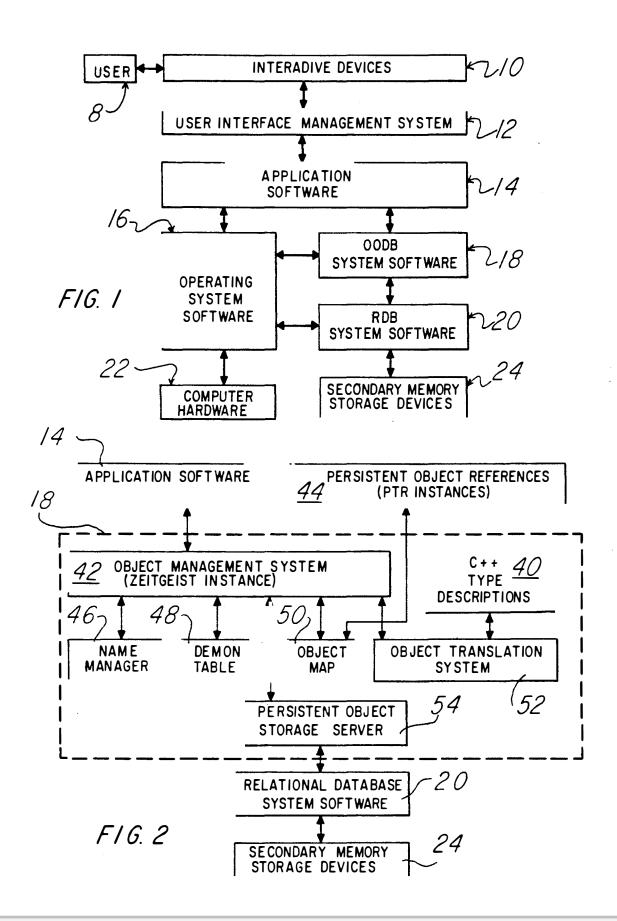
Won Kim, et al. "Architecture of the ORION Next-Generation Database System", IEEE Trans. on Knowledge and Data Engineering, V2Nl Mar. 1990. pp. 109+.

Michael Stonebraker, "Object Management in POST-GRES Using Procedures", Int'l Workshop on Object-Oriented Database (00DB) Systems 1986. pp. 66+. Michael Stonebraker, et al. "The Implementation of POSTGRES", IEEE Trans. on Knowledge and Data Engineering, V2N1, Mar. 1990. pp. 125+.

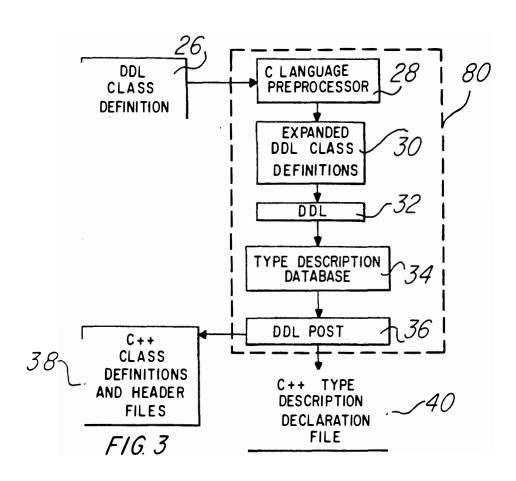
Puknraj Kachhwaha, et al. "An Object-Oriented Data Model for the Research Laboratory", Int'l Workshop on Object-Oriented Database (ODOB) Systems 1986. p. Puknraj Kachhwaha, "LCE: An Object-Oriented Database Application Development Tool", SIGMOD Int'l Conference on Management of Data 1988. p. 207. Laura M. Haas, et al. "Starburst Mid-Flight: As the Dust Clears", IEEE Trans. on Knowledge and Data Engineering, V2Nl Mar. 1990. [IBM's Starburst] pp. 143.

Ted Kaehler, "Virtual Memory on a Narrow Machine for an Object-Oriented Language", Object-Oriented Programming: Systems, Languages and Applications (OOPSLA) 1986. [Xerox PARC's LOOM]pp. 87+. Karen E. Smith, et al. "Intermedia: A Case Study of the Differences Between Relational and Object-Oriented Database Systems", Object-Oriented Programming: Systems, Languages and Applications (OOPSLA) 1987. [Brown's Intermedia System] pp. 452+.

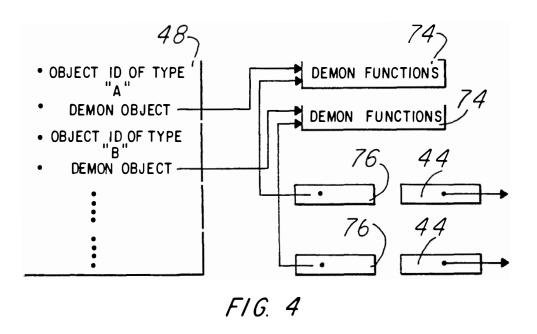




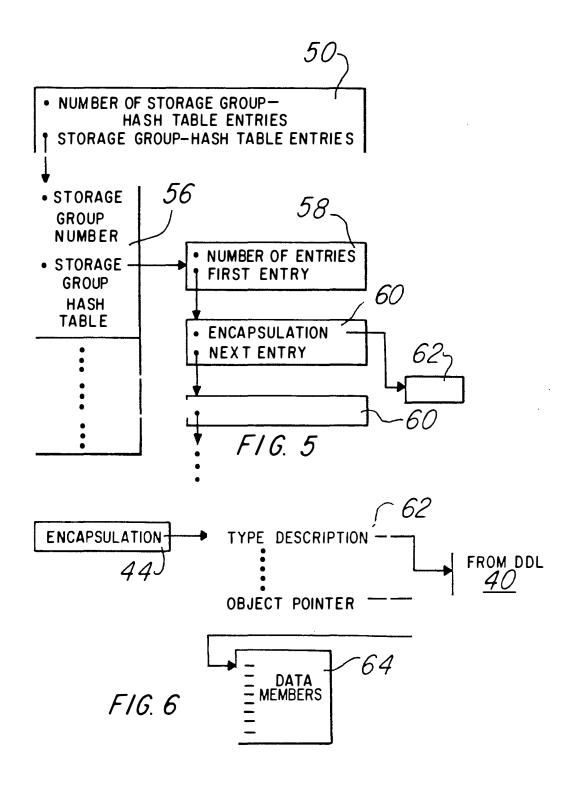




Mar. 22, 1994









DOCKET

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

