IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Karol Doktor

Assignee: Financial Systems Technology Pty. Ltd.

Title: DATA RELATIONSHIPS PROCESSOR WITH UNLIMITED
                 EXPANSION CAPABILITY

Serial No.:   08/439,013   Filed: 05/11/95

Examiner: P. Lintz   Group Art Unit: 2307

Attorney Docket No.:   M-1226-4D US

                                     San Jose, California
                                     February 20, 1996

COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D. C.   20231

                              AMENDMENT

Sir:

        This is a response to the office action dated August 24,

1995.

                               REMARKS

        Claims 15-30 are pending and remain at issue.

Rejection of Claims 15,18,21,24, and 27-30 under 35 U.S.C. §103

        The Examiner rejected Claims 15, 18, 21, 24, and 27-30

under 35 U.S.C. §103 as being unpatentable over Shimaoka et al.

(US Patent No. 4,893,232) and Korth and Silberschatz (Database

System Concepts). Specifically, the Examiner stated that

Claims 15, 18, 21, 24, and 27-30 "essentially claim breaking a

compound query into subqueries and then merging the subqueries

in retrieval of information from a relational database."

Applicant respectfully submits that the Examiner is in error.

The claims of the present application recite specific elements

for a novel method and system of data retrieval which does not

encompass breaking a compound query. Furthermore, Applicant

respectfully submits that the system and method recited by the

claims are radically different from the example cited by the

Examiner in Korth and Silberschatz.

        For example, Claim 15 recites

> ... retrieving from said relational
> database a second entity wherein said
> second entity is related to said first
> entity by said first relation; ...

> retrieving from said relational database
> said selected entity wherein said selected
> entity is related to said second entity by
> said second relation.

Therefore, Claim 15 involves multiple queries by "retrieving ... a second entity which is related to a first entity by a first relationship" and then "retrieving ... said selected entity" by using a second relationship to the second entity.

As stated by the Examiner, Korth and Silberschatz discloses a compound query to "select all customers who have a deposit AND the deposit is from the 'Perryridge branch' with the intersection of the second entity all customers who have a loan and the loan is at the 'Perryridge' branch." For this query, the "selected entity" must be the customer names since that is the desired result. The method described by Korth and Silberschatz retrieves a set of customers with a deposit at Perryridge Branch and then narrows this list by using an intersect command with a set of customers who have a loan at the Perryridge branch. Thus Korth and Silberschatz teach to retrieve two sets of customers, each of which is a superset of the "selected" entity or entities, and then find the intersection of the two sets to obtain the "selected" entity or entities. In Korth and Silberschatz, there is no second entity since the customers are the selected entities which are then reduced by intersection with a separate query.

The Examiner also cited Korth and Silberschatz pages as showing "that a method of 'Query Optimization' involved breaking down a compound query into multiple subqueries **(page 303-305)** by a selection operation on each subquery. Applicant respectfully submits that the examples given on pages 303-305 of Korth and Silberschatz do not teach or suggest the specific system recited in Claim 15.

The first example on page 303 is to "Find the assets and name of all banks who have depositors living in Port Chester." The search is given as project (or print) the branch-name and assets of the result of the selection that customer-city = Port Chester in the natural joining of the customer relation, the deposit relation, and the branch relation. In other words, the customer relation, the deposit relation, and the branch relation are combined, then those tuples (in this case each tuple would include customer-name, street, customer-city, branch-name, account-number, balance, and assets) in which the customers lives in Port Chester are selected and their branch name and assets are printed. Thus in this example only one retrieval is performed. Consequently, this example can not disclose "retrieving ... a second entity" and "retrieving ... said selected entity" as recited in Claim 15.

In the example given on page 304, the example above is modified "to restrict attention to customers with a balance over $1000." Korth and Silberschatz, p. 304. Through the optimization techniques outlined on page 304 the final query becomes the natural joining of the subset of the customer relation in which the customer city is Port Chester and the subset of the deposit relation in which the balance is greater than 1000. The goal of the optimization and indeed the end result is that the two queries are completely independent. The final entity is arrived by joining the results of the two separate queries. Therefore this example does not teach or suggest "retrieving ... a second entity which is related to a first entity by a first relationship" and then "retrieving ... said selected entity" by using a second relationship to the second entity.

Therefore, Applicant respectfully submits that the Examiner has failed to cite a reference which teaches "retrieving .. a second entity [which] is related to said first entity by said first relation" and "retrieving ... said

selected entity [which] is related to said second entity" as recited in Claim 15. Consequently, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 15.

Applicant respectfully requests the withdrawal of the objection to Claims 16 and 17, which are dependent upon Claim 15, due to the patentability of Claim 15 as explained above.

Claim 18 is similar to Claim 15 except that a first group of entities and selected group of entities are retrieved. Applicant respectfully submits that the arguments given above with regards to Claim 15 are equally applicable to Claim 18. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 18.

Applicant also respectfully requests the withdrawal of the objection to Claims 19 and 20, which are dependent upon Claim 18, due to the patentability of Claim 18 as explained above.

Claims 21 and 24 are method claims which correspond to Claims 15 and 18, respectively. Applicant respectfully submits that the arguments given above with respect to Claims 15 and 18 are equally applicable to Claims 21 and 24. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejections of Claim 21 and 24.

Applicant also respectfully requests the withdrawal of the objection to Claims 22, 23, 25, and 26, which are dependent upon Claims 21 or 24, due to the patentability of Claims 21 and 24 as explained above.

Claims 27 and 29 are very similar to Claims 15 and 18, respectively, except that the first search path record does not necessarily identify a first entity. However Claims 27 and 29 recites "retrieving ... a first entity" and "retrieving ... said selected entity wherein said selected entity is related to said first entity by said second relation." As explained above with respect to Claim 15, the Examiner has not cited any reference which teaches or suggest this feature of Claims 27
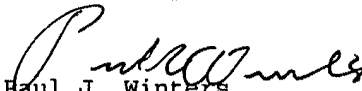
and 29. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 27 and 29.

Claims 28 and 30 are similar to Claims 27 and 29 except that a first group of entities and selected group of entities are retrieved. Applicant respectfully submits that the arguments given above with regards to Claims 27 and 29 are equally applicable to Claims 28 and 30. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejections of Claims 28 and 30.

Conclusion

Therefore, Applicant respectfully submits that all claims at issue, i.e. Claims 15-30, are patentable over Shimaoka et al. in light of Korth and Silberschatz and that Claims 15-30 are in a condition for allowance. Accordingly, allowance of Applicant's Claims 15-30 is respectfully requested. If the Examiner's next action is other than entry of this amendment and allowance of all pending claims, the Examiner is requested to telephone Applicant's attorney at (408) 453-9200.

Respectfully submitted,

Raul J. Winters
Attorney for Applicant
Reg. No. 25,246

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C., 20231, on _Feb 20_ 19 _96_

Feb 20, 1996 _____
Date of Signature   Attorney for Applicant(s)

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