Training for Report Accounts

RA in action

"The classic strategic edge"

Introduction

Seven tables in RA are shown

Sample data in three tables is shown

Resulting data in four other tables is shown

Performance features of RA are shown

What this course explains

The compact design of RA

The processing sequence of transactions

How data changes through processing

Why RA is so fast

Why RA scales to anysize application

How RA is portable and maintainable

How RA is implemented so rapidly

Professional skills in attendance

Data entry specialists

Production managers

Accounting specialists

Financial managers

Software engineers

Information managers

Corporate managers

Agenda

Topics

1. Design of RA in seven tables
2. Description of data in read-only tables
3. Sample data processed in read/write tables
4. RA performs, scales maintains, implements

Times, respectively

1. 5 minutes
2. 10 minutes
3. 10 minutes
4. 5 minutes

What is RA

High performance accounting software for the financial industry.

The reusable, core accounting database

Runs on every major platform

Supports the major RDBMS vendors

Scales tomany users, accounts, transactions

Code resides in a business rules repository

How the topics interconnect

1. Design of RA in seven tables shows which tables connect and talk to each other.

2. Description of data in read-only tables shows what is repeatedly looked up to make the system flow as a veritable symphony.

3. Sample data processed in read/write tables shows how data changes from input to manipulationto final storage or output.

4. As a result, RA performs, scales, maintains, and implements very well.

Special words used by RA

List of terms here

1. RDBMS: tables, columns, rows
2. Read-only, read-write, write-only
3. Debits, credits, trebits

Definitions of terms, respectively

1. SQL92: files, fields, records
2. Read, update, insert
3. Dr -, Cr +, Tr

Design of RA in seven tables

RA uses only seven relational database tables

1. Type of transaction
2. Transactions
3. Logic
4. Progress
5. Balances
6. Accounts
7. Type of account

Data description: read-only tables

Type of transaction

Trans type number Description Transtype ID

1126 RECORD TANSFER FROM TRUST FUNDTO BUDGT 31

1130 BORROWING FROM TREASURY & PUBLIC DEBT 32

1131 RECORD SALE OF PARTICIPATION CERTIFICATES 33

Logic

Account number Transaction typeID switches [31][32][33]

1010 -- Dr --

4450 Tr -- --

4590 -- Cr --

Type of account

Account type number Description Account type

1010 FUND BALANCE WITH TREASURY P

4450 AUTHORITY AVAILABLE FOR APPORTIONMENT B

4590 APPORTIONMENT AVAILABLE FOR DISTRIBUTN B

Type of transaction

Trans type number DescriptionTrans type ID

1126 RECORD TANSFER FROM TRUST FUNDTO BUDGT 31

1130 BORROWING FROM TREASURY & PUBLIC DEBT 32

1131 RECORD SALE OF PARTICIPATION CERTIFICATES 33

Consecutive trans type numscan have *gaps*.

The transaction type ID is a *consecutive* number which indexes trans type numbers.

The *sub range* value of the transaction type number shows exactly what its purpose is:

1000-9999 Accounting transactions

0100-0999 Reporting transactions

0000-0099 RA system transactions

Logic

Account number Transactiontype ID switches [31][**32**][33]

1010 -- **Dr** --

4450 Tr -- --

4590 -- **Cr** --

Each account number has a series of switches composed of Dr, Cr, Tr, or **--**blank.

The relative positional location of the switches within the series corresponds to the transaction type ID number affecting that particular account number.

Type of account

Account type number Description Account type

1010 FUND BALANCE WITH TREASURY P

4450 AUTHORITY AVAILABLE FOR APPORTIONMENT **B**

4590 APPORTIONMENT AVAILABLE FOR DISTRIBUTN **B**

Each account has an account type number which describes it for the user and system.

The account type is proprietary (P) or budgetary (B), according to the Standard General Ledger (SGL) of the government.

The account type is used for reporting.

Data processed: read/write tables

Type of transaction

Trans type number Description Transtype ID

1130 BORROWING FROM TREASURY & PUBLIC DEBT **32**

Transaction

Trans ID	Transaction type ID	Transaction amount	Post/Reverse
93	**32**	$ 4,300	Post

Logic Progress

Account number	Trans type ID switch[**32**]	Account number	Action
1010	**Dr**	**1010**	**Dr**
4450	--	**4590**	**Cr**
4590	**Cr**		

Balances (before), Accounts, Balances (after)

Acct num	Bal amount	TransID	Acct amt	Acct num	Entry	Acct num	Bal amount
1010	$ 100	93	< $ 4,200>	**1010**	P	**1010**	<$ 4,200>
4590	$ 0	93	$ 4,300	**4590**	B	**4590**	$ 4,300

Input the transaction

Type of transaction

Trans type number	Description	Transtype ID
1130	BORROWING FROM TREASURY & PUBLIC DEBT	**32**

The trans type number is chosen, here 1130.

The trans type ID is looked up, here 32.

Transaction

Trans ID	Transaction type ID	Transaction amount	Post/Reverse
93	**32**	$ 4,300	Post

The amount and post status are input.

A trans ID is automatically generated, 93.

The transaction record is then committed.

Look up logic for that transaction

Transaction

Trans ID	Transaction type ID	Transaction amount	Post/Reverse
93	**32**	$ 4,300	Post

The transaction record above is committed.

Logic

Account number	Transaction typeID switches [31]	[**32**]	[33]
1010	--	**Dr**	--
4450	Tr	--	--
4590	--	**Cr**	--

Transaction type ID 32 is looked up in the logic table as column-32.

Write logic to the progress table

Logic Progress

Account number	Trans type ID switch[**32**]	Account number	Action
1010	**Dr**	**1010**	**Dr**
4450	--	**4590**	**Cr**
4590	**Cr**		

Column 32 in the logic table is searched for any rows having Dr, Cr, or Tr present.

The rows found are the equivalent account numbers affected by the transaction.

The account numbers and switch actions are written to the progress table.

Processing the progress table

Progress

Account number	Action
1010	**Dr**
4590	**Cr**

Each account number is processed, then removed for the progress table.

When the progress table is empty, all of the account have been processed, andthe transaction is completed.

Which tables are processed

Progress

Account number	Action
1010	**Dr**
4590	**Cr**

Balances (before), Accounts, Balances (after)

Acct num	Bal amount	TransID	Acct amt	Acct num	Entry	Acct num	Bal amount

1010 $ 100 93 < $ 4,200>**1010** P **1010** <$ 4,200>

4590 $ 0 93 $ 4,300 **4590**B **4590** $ 4,300

Balances contains an entry for each account.

Accounts contains all account entries as they are processed, sequentially intime.

How each account is processed

Progress Transaction

Account number Action Trans ID Transaction amount Post/Reverse

1010 Dr 93 $ 4,300 Post

4590 Cr

Balances (before), Accounts, Balances (after)

Acct num Bal amount TransIDAcct amt Acct num Entry Acct num Bal amount

1010 $ 100 **93** < $4,200> **1010** P **1010** <$4,200>

4590 $ 0 **93** $ 4,300 **4590**B **4590** $ 4,300

The account&rsquo;s running balance is looked up.

The transaction amount adjusts the balance.

The account&rsquo;s running balance is updated.

Logic = "procedural" SQL

Logic Progress

Account number Trans type ID switch[**32**] Account number Action

1010 Dr 1010 Dr

4450 -- **4590 Cr**

4590 Cr

Table loaded logic defines the business rules of all transactions.

Transaction logic emulates procedural processing in non procedural SQL.

The benefits are great simplicity and speed.

Reporting transactions

The logic of reporting transactions is identical to that of accounting transactions.

Reports are quickly derived from the running balance entry of each account.

The logic of reporting

Logic

Account number Transaction typeID switches [8][**9**][10]

1010 -- **A** --

4590 -- **L** --

For report id 9, the current balance for account 1010 is to be reported as an asset.

For report id 9, the current balance for account 4590 is to be reported as a liability.

Importance of the balance table

Balances (after)

Acct num Bal amount

1010 <$ 4,200>

4590 $ 4,300

Each account number has only one running balance entry.

Reports are quickly derived from simple lookups of the running balance entries.

Maintenance transactions

The logic of maintenance transactions is identical to that of accounting transactions and reporting transactions.

Maintenance is quickly performed using the decision() function in USoft Developer.

Audit trail and error recovery

Transaction

Trans ID Transaction type ID Transaction amount Post/Reverse

94 32 $ 4,300 **Reverse**

Records in Transactions and Accounts can not be changed, only reversed.

Progress

Account number Action

1010 Dr

4590 Cr

Interrupted transactions are reconstructed from the last state of the progress table.

RA performs, scales, maintains, and implements very well

RA performs so well because it has only seven relational tables.

RA scales to any number of users because it supports the major RDBMS vendors.

RA is portable and easy to maintain because its business rules are in ANSI SQL92.

RA can be implemented rapidly because its rules repository is in USoft Developer.

Important points to remember

RA uses only seven simple relational tables.

RA uses table-loaded logic for accounting transactions *and* reporting transactions.

RA in non embedded, non procedural SQL code rivals the speed of embedded SQL.

The specific principles learned here are reusable on any real world, realtime database problems as universal solutions.

For more information

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Viewer feedback makes us better

Please submit anonymous comments about the training session before departing.

Thanks very much, and best of luck.