Cooperative Processing Data Bases
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Abstract

This presentation will be about cooperative processing for the 90's using client-server technology; concepts of downsizing from mainframes and minicomputers to workstations on a LAN will be the main theme.
Graphical Front-Ends for SQL Back-Ends

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Traditional Online Applications

DBMS
Micro, Mini or mainframe
Application Programs

DumbTerminals
Cooperative Processing Applications

Local or Wide Area Networks

SQL DBMS
Minicomputer
Application Programs

SQL DBMS
Superserver
Application Programs

SQL DBMS
Mainframe
Application Programs

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SQL Cooperative Processing

When application programs run on PC workstations but transparently access SQL databases which reside on mainframes, minis, or micro based data servers.
Graphical Front-Ends for SQL Back-Ends

What makes an application graphical?
Elements of a Graphical Application

- Bit Map Graphics
- Dialog Boxes
- Point Devices
- Windows & Scroll Bars
- Color & Fonts
- Text & Graphics
### Graphical Programming for SQL

- Visual display of code
- Point & click drawing of objects
- Events & messages
- Procedural actions
- Explicit SQL coding
- Reusable functions
- Animated debugging
Graphical Front-Ends for SQL Back-Ends

Graphical programming for Windows and OS/2 PM
End-User Graphical Tools

- Primarily for decision support
- Ad-hoc query and reporting
- SQL must be invisible
- Integration with spreadsheets/WP
- Easy application generation
# PC DBMS Software in the Nineties

<table>
<thead>
<tr>
<th>Software</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphical PC tools for SQL databases</td>
<td>Improved people productivity</td>
</tr>
<tr>
<td>PC LAN client/server SQL systems</td>
<td>Downsize from minis and mainframes</td>
</tr>
<tr>
<td>Enterprise-wide PC to SQL cooperative processing</td>
<td>True integration of PCs into corporate data processing</td>
</tr>
</tbody>
</table>
Future of Graphical Interfaces

- Most PCs will go graphical within 3 to 5 years.
- Windows and OS/2 PM will be the dominant graphical environments.
- Graphical Front-Ends will drive Cooperative-Processing applications.
- Programmer tools will become more sophisticated, yet simpler.
- End-User tools will become more powerful.
The Significance of SQL

- SQL makes it possible to develop LAN database servers.
- SQL enables development of engine-independent application tools.
- SQL provides unified access to micro, mini, and mainframe databases.
We Open Windows to SQL

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Gupta SQL System

Gupta SQLBase Server

Gupta SQLNetwork to DB2 and Oracle

COBOL and C

Excel and Lotus 1-2-3

Third Party Database Servers

Third Party front-ends

Application

LAN
PC to DB2 Connectivity with SQLNetwork

- SQLHost
- DB2
- SQLGateway
- SQLRouter
- OS/2 Server
- PC NetBIOS LAN
- C or COBOL
- SQLWindows
- SQLVision
- Windows Clients
- OS/2 Clients
- SQLRouter
- APPC
- SQLNetwork
SQLNetwork for Oracle

Oracle

VAX or other platforms

DecNet or TCP/IP
Oracle Server

SQL*Net

OS/2 clients

SQLGateway/Oracle

C or COBOL

SQLWindows

Windows clients

SQLGateway/Oracle

SQLRouter/Oracle Application

SQLRouter/Oracle Application

SQLGateway/Oracle

SQL*Net

SQL*Net

SQL*Net

SQLVision

SQLWindow
Title: Estimate Prices
Window Location and Size
Visible? Yes
Keyboard Accelerator: (none)

Message Actions
On SAM, Click
Set fldOurPrice = fldListPrice - 5000

Make: Plymouth
Model: Oasis
List Price: $20,000.00
Our Price: $15,000.00
Form Window: frmMain
- Title: Fast Car Auto Brokers
- Icon File: (none)
- Display Settings
- Menu
- Contents
  - Data Field: fldCarMake
  - Background Text: Make:
  - Data Field: fldModel
  - Background Text: Model:
  - Data Field: fldListPrice
  - Background Text: List Price:
  - Data Field: fldOurPrice
  - Data
    - Maximum Data Length: Dynamic
    - Data Type: Number
    - Editable? Yes
- Display Settings
- Window Location and Size
- Visible? Yes
- Border? Yes
- Format: Currency
- Country: Default
- Message Actions
Title: Fast Car Auto
Icon File: (none)
Display Settings
Contents
Data Field: fldCar
Background Text
Data Field: fldModel
Background Text
Data Field: fldList
Background Text
Data Field: fldOut
Group Box: Options
Check Box: ck1
Check Box: ck2
Check Box: ck2
Check Box: c3
Check Box: c4
Group Box: Transmission
Radio Button: rb1
Radio Button: rb2
Pushbutton: pbPrice

Title: Estimate Prices
Window Location and Size
Pushbutton: pbPrice
  Title: Estimate Prices
Window Location and Size
  Visible? Yes
  Keyboard Accelerator: [none]
Message Actions
  On SAM Click
    If SallsNull (fldListPrice)
      Call SallymessageBox
        'Please enter a price!!'
        'Fast Car', Button OK
  Else
    Set fldOurPrice = fldListPrice
Pushbutton: pbCancel
Window Variables

Please enter a price!

List Price: 
Our Price: 

City: Woodside  

Askng Price: $1,200,000.00  

Broker: Houlihan Lawrence  
Agent: William Betts  
Listed: 10/14/88 Thru: 12/14/89  

Property #: N24680  
Lot Size: 40X85  
Bedrooms: 4  
Baths: 2  
Age: 20  