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
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.
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>

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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 SQLWindows

COBOL and C

Excel and Lotus 1-2-3

Third Party front-ends

Gupta SQLNetwork to DB2 and Oracle

Gupta SQLBase Server

Third Party Database Servers
PC to DB2 Connectivity with SQLNetwork
SQLNetwork for Oracle

Oracle

VAX or other platforms

SQL*Net

SQLGateway/Oracle

DecNet or TCP/IP

Oracle Server

SQL*Net

SQLGateway/Oracle

SQLGateway/Oracle

SQLGateway/Oracle

SQLRouter/Oracle Application

OS/2 clients

SQL*Net

C or COBOL

Windows clients

SQLWindows

SQLVision

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## 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
      - **Background Text**: Our Price:
  - **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**

### Form Edit
- **Make**: [Field]
- **Model**: [Field]
- **List Price**: [Field]Our Price: [Field]
Title: Fast Car Auto
Icon File: (none)
Display Settings
Menu
Contents
- Data Field: fldCa
- Background Text
- Background Text
- Data Field: fldMo
- 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

- Data Field
- Multiline Text
- Background Text
- Push Button
- Radio Button
- Check Box
- Group Box
- Table Window
- List Box
- Horizontal Scroll Bar
- Vertical Scroll Bar

Price:  
Our Price:  

Options

Transmission
- Automatic
- Stick

- Electric Windows
- Air Bags
- Turbo Charger

- Air Conditioning
- Sun Roof

- Horizontal Scroll Bar
- Vertical Scroll Bar
Pushbutton: pbPrice
- Title: Estimate Prices
- Window Location and Size
- Visible? Yes
- Keyboard Accelerator: (none)
- Message Actions
  - On SAM Click
    - If SallisNull (fldListPrice)
      - Call SallmessageBox
        - 'Please enter a price!'!
        - 'Fast Car', Button 'Ok'
  - Else
    - Set fldOurPrice = fldListPrice
- Pushbutton: pbCancel
- Window Variables

Please enter a price!
Application Description: SQLWindows ver

- Design-time Settings
- Global Declarations
- Form Window: frmMain
  - Title: Fast Car Auto Brokers
  - Icon File: [none]
  - Display Settings
  - Menu
  - Contents
    - Data Field: fldCarMake
      - Data
      - Display Settings
      - Message Actions
    - Background Text: Make:
      - Window Location and Size
      - Visible? Yes
      - Justify: Left
  - Background Text: Model:
    - Window Location and Size
    - Visible? Yes
    - Justify: Left
    - Window Variables
    - Message Actions
    - Dialog Box: dlgAbout
City: Woodside
Area: Skyline
Asking Price: $1,200,000.00

Property #: N24680
Lot Size: 40X85

Bedrooms: 4
Baths: 2
Age: 20

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

Description:

Database/Query Status
DEMO
DB2DEMO