Cooperative Processing Data Bases
Juzar Hasta, Gupta Technologies Inc.

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

SQL DBMS
Minicomputer

SQL DBMS
Supermicro

SQL DBMS
Mainframe

Local or Wide Area Networks
Application Programs

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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

This diagram illustrates the connectivity between Windows Clients, SQLRouter/APPc, SQLGateway/APPc, OS/2 Clients, DB2 SQLHost, and PC NetBIOS LAN using SQLNetwork. The diagram shows how different clients and routers connect to the DB2 SQLHost through APPC links, facilitating SQLHost/APPc communication.
SQLNetwork for Oracle

Oracle

VAX or other platforms

SQL*Net

SQLNetwork Router/Oracle Application

OS/2 clients

DecNet or TCP/IP

Oracle Server

Windows clients

SQLGateway/Oracle

C or COBOL

SQLWindows

SQLGateway/Oracle

SQLGateway/Oracle

SQLRouter/Oracle Application

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

Form
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
      - 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
Title: Fast Car Auto
Icon File: (none)
Display Settings
Menu
Contents
- Data Field: fldCar
- Background Text
- Background Text
- Data Field: fldMake
- Background Text
- Data Field: fldModel
- Background Text
- Data Field: fldPrice
- 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 SalsHnfl fflListPrice
      - Call SalsMessageBox
        - 'Please enter: a price!!'
        - 'Fast Car, Button .Ok'
  - Else
    - Set flOurPrice = flListPrice
- Pushbutton: pbCancel
- Window Variables
Application Description: SQLWindows version

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:

Visible? Yes

Justify: Left

Background Text: Model:

Window Location and Size

Visible? Yes

Justify: Left

Window Variables

Message Actions

Dialog Box: dlgAbout
<table>
<thead>
<tr>
<th>City:</th>
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<tr>
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