TRACK IV: Client/Server
Session 400

5 LINES OF CODE CAN "MAKE YOUR DAY"

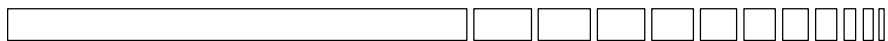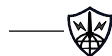## 5 LINES OF CODE CAN "MAKE YOUR DAY"

- Small Client/Server Routines That Improve Your System
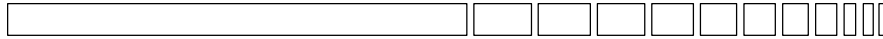- Routines Written Inside and Outside COMPOSER

- Supports Management of U.S. Army's $36 Billion Housing Investment
- 6 Modules
  - Assignments & Termination/Community Homefinding, Relocation & Referral Service -- IEF Block Mode
  - Lodging -- Composer Client Server
  - Furnishings -- C
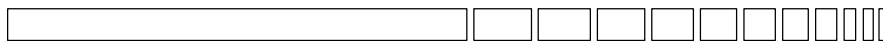 - HQ HOMES -- Informix 4GL

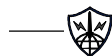**"Exceed Our Customers Highest Expectations Through Technical Excellence"**

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- To make traveling, and arriving at a new post easier for the soldier.
- To insure that the housing guidelines are followed.
- To provide local and nationwide reporting of usage information.
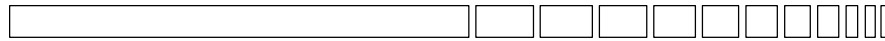- To Provide the operators of the transient housing an "easy to use" system with room for growth.

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LODGING IMPLEMENTATION

HOMES

- Stand-Alone UNIX Mini-Computer/IBM Workstations to be located at more that 100 sites.
- System supports Army Transient Housing Quarters.
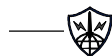 - Roughly equivalent to a Hotel Reservation System with very complex add-ons.

HOMES *LODGING ARCHITECTURE*

- COMPOSER generated.
- Windows 3.11 Client -- HP9000 Server with Informix
- Design is Fat Client Because of Lack of Report Writer
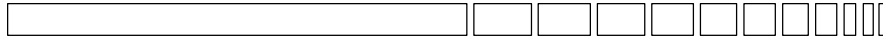- Routines That Follow Built to Support This Environment

THE SMALL ROUTINES

- Error Messages within COMPOSER
- Single Instance Windows for MS Windows
- Log-in with Visual Basic
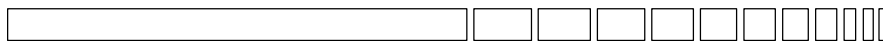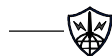- Calling Windows Desktop Applications
- The "HELP" System

ERROR MESSAGES WITH COMPOSER

- **Composer EXIT STATES are hard coded.**
- **System needed:**
  - **Dynamic messages**
  - **Customized error messages**
  - **Errors that "pop a box" recorded in one place**
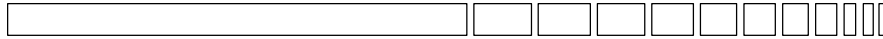   - » **Not hidden throughout the code**
  - **Archive, Log, Shutdown**

■ SIGNIFICANT ADVANTAGES

– Ability to Record Information When Error Occurs

– Easier to Maintain
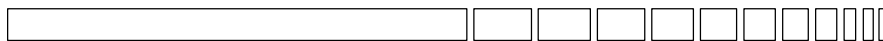
» One Database File

» Don't Have to Subset to Change
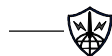
■ More Informative Messages

– Composer Allows

» "Customer Not Found"

– This Routine Allows

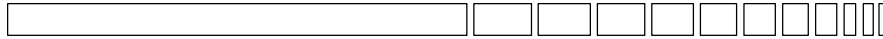» "Mr. Johnston Not Found"

» Guidance on Problem Correction

MESSAGE HANDLER

```
        ┌─────────────┐
        │  MESSAGE    │
        │  HANDLER    │
        │ COMPONENTS  │
        └──────┬──────┘
     ┌─────────┼─────────┐
┌─────────┐ ┌────────┐ ┌──────────┐
│DATABASE │ │ EXIT   │ │ VARIABLE │
│ TABLE   │ │ STATE  │ │ PASSING  │
│         │ │        │ │ ROUTINE  │
└─────────┘ └────────┘ └──────────┘
```
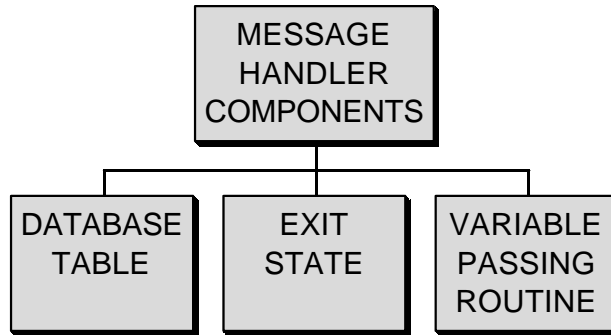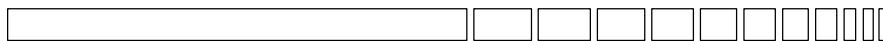
"Exceed Our Customers Highest Expectations
Through Technical Excellence"

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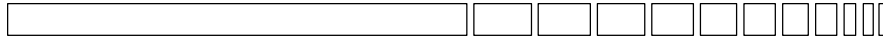| EXIT STATE	DESCRIPTION
NORMAL	Show Message to User, Return with 'OK'
ROLL BACK	Show Message to User, Roll Back Database to Last 'Commit'
ABORT	Exit Application

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Through Technical Excellence"

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■ HANDOUTS INCLUDE

– CALLING ROUTINE

– ACTION BLOCK

– COMPOSER DATABASE DECLARATIONS

– DATABASE STRUCTURE

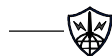**"Exceed Our Customers Highest Expectations Through Technical Excellence"**

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■ WHEN TWO APPLICATIONS ARE OPENED IN WINDOWS AND YOU CAN SWITCH BETWEEN THEM WITHOUT CLOSING THEM YOU ARE WORKING WITH MODELESS WINDOWS

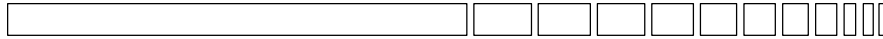**"Exceed Our Customers Highest Expectations Through Technical Excellence"**

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- WINDOWS, AS OBJECTS, HAVE PROPERTIES (Behavior)
  - MODELESS OR NON-MODELESS IS A PROPERTY
- MODELESS WINDOWS DO NOT REQUIRE A RESPONSE (THE 'OK' BUTTON) BE 'CLICKED' TO CLOSE THE WINDOW
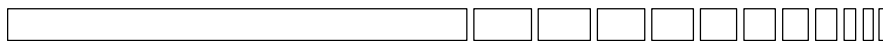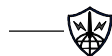
- COMPOSER DOES SUPPORT MODELESS WINDOWS, HOWEVER, IT ALLOWS MULTIPLE INSTANCES (2 VERSIONS OF THE SAME WINDOW OPENED TWICE)
- DANGER IS THAT OPENING MULTIPLE WINDOWS CAN CORRUPT DATABASE...ACCIDENTAL MULTIPLE "WRITES" TO THE DATABASE.
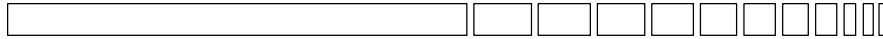
■ OBJECTIVE IS TO INSURE THAT WHEN MORE THAN ONE WINDOW IS OPENED ONLY ONE INSTANCE OF A WINDOW IS OPENED AT THE SAME TIME---NO DUPLICATES OF THE SAME WINDOW

■ EXTERNAL C ROUTINE THAT CHECKS TO SEE IF THE WINDOWS IS OPEN, IF IT IS, IT BRINGS IT TO THE FORE FRONT
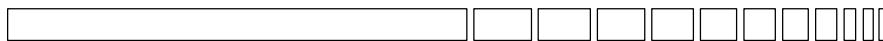
■ THE ROUTINE

– "GET MODULE HANDLE"

– USES TITLE AS IT APPEARS ON THE TITLE ON THE WINDOW
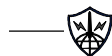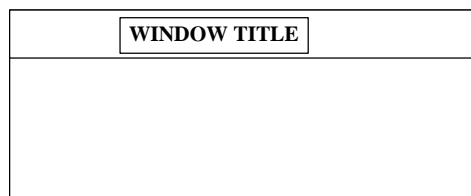
WINDOW TITLE

- OBJECTIVE -- PROVIDE A SPREAD SHEET TYPE APPLICATION BUT BLOCK WRITING CHANGES TO THE DATABASE.

- EXCEL ALLOWS CHANGES TO BE WRITTEN TO THE DATABASE

- VISUAL BASIC 'GRID' FUNCTION PROVIDES CAPABILITIES OF A SPREADSHEET USING 'READ-ONLY' DATA

COMPOSER ⬌ RDBMS

VISUAL BASIC GRID

COMPOSER EXTERNAL ACTION BLOCK

FLAT FILE FOR TEMPORARY DATA STORAGE
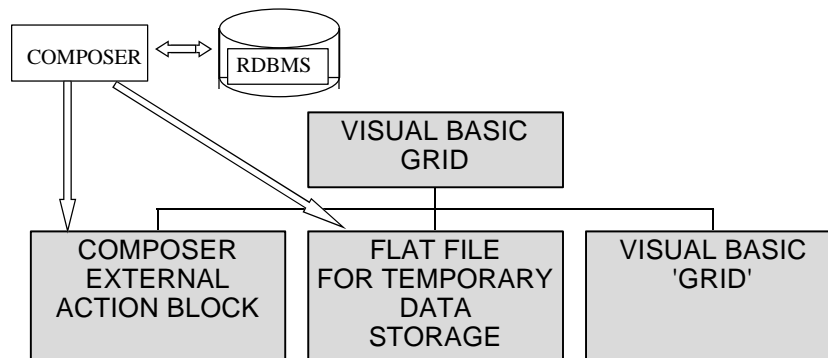
VISUAL BASIC 'GRID'

- ■ COMPOSER EXTERNAL ACTION BLOCK
  - – INITIATED BY SELECTION ON SCREEN
  - – READS DATABASE FOR PRE-DETERMINED DATA
  - – WRITES TO A FLAT-FILE USING EXTERNAL ACTION BLOCK
  - – REMAINS RESIDENT WHILE USER WORKS WITH VISUAL BASIC APPLICATION

- ■ BEFORE LAUNCHING IEF NEEDED TO
  - – LOGIN
  - – ESTABLISHE/VERIFY DATABASE CONNECTION
- ■ SUCCESSFUL LOG-IN LAUNCHES IEF

- VISUAL BASIC ROUTINE WRITTEN TO:
  - PERFORM LOG-IN,
  - ESTABLISH THE DATABASE CONNECTION,
  - LAUNCH COMPOSER APPLICATION
- CODE IS ON HAND OUT

- EXTERNAL C PROGRAM--C COMMAND TO WINEXE
- DESKTOP COMPONENT IS EMULATED AS A 'CHILD' OF THE COMPOSER APPLICATION
  - IF THE USER FAILS TO CLOSE THE DESKTOP COMPONENT WHEN THE COMPOSER APPLICATION CLOSED THE COMPOSER APPLICATION CLOSES THE DESKTOP COMPONENT
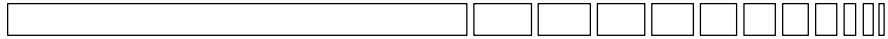
- COMPOSER STORES 'HELP' IDs AS A PROPERTY OF THE INDIVIDUAL WINDOW
  - HELP IDs STORED THROUGHOUT THE APPLICATION
- HOMES HAS OVER 100 SCREENS
  - NEEDED A SINGLE 'HELP' FILE
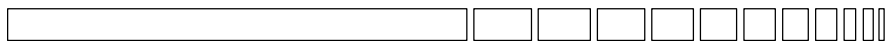 - COMPOSER SOLUTION DEEMED NOT 'MAINTAINABLE'

HOMES CREATED A SEPARATE 'HELP' FILE