

Windows Presentation Foundation

Graphical User Interface Design
Using .NET and WPF

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What is a User Interface?

- The space where interactions between humans and programs occur
 - Commands
 - Data
- Programs need input
- Humans need output

Command Line Interfaces (CLI)

- Textual commands in a specialized vocabulary
- Yes, CLI's are still in wide use today

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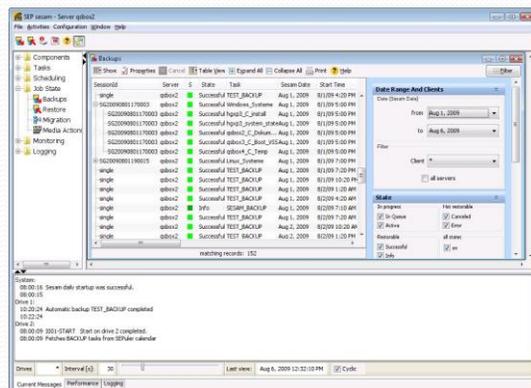
CARMAIN          A/R TRANSACTION PROCESSING          MLK          ARCTL
IH: 95-980-4834          TIV Aut: Y          Total Amt Owing:
GIBSON BARRETT, JOHN          TIV Dep: Y          Payment Due: 229.68
BARRETT          Waiver: 254.00          Fin. Aid Left: 2,412.60CR
Additional Person: Yes          04 2008

Tp IH / Acct # Description          Cur Balance          Pending          Payment
7 95-980-4834 HEALTH INSURANCE
17 95-980-4834 PARKING PERMITS/FINES          7.00          7.00
64 95-980-4834 SUMMER TUITION/FEES          1,565.00
90 95-980-4834 PELL GRANT          1,501.10CR
95 95-980-4834 STAFFORD LOANS          2,667.50CR
8 08-675-6467 EMPLOYEES          175.33CR
64 08-675-6467 SUMMER TUITION/FEES          508.00          286.00
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F1 A/R Dtl          F5 Pay All          F9 Add to ICard          SF2 A/R Smry          SF9 Refund ICard
F2 Tender/Post          F6 RA Tmfr          F10 TA Adv          SF4 2nd Party Auth          SF10 RA Rtn
F3 Exit          F7 Picture          SF6 Bal After FA          SF11 AR Types
F4 A/R Notes          F8 Spouse          F12 CC Pat          SF8 Addl People          SF12 Fee File
  
```

Graphical User Interfaces (GUI)

- A system which uses a mouse, pointers, hypertext, and multiple windows
 - Desktop
 - WinForms
 - WPF
 - Web
 - HTML
 - Mobile
 - Android
 - iOS



Desktop vs. Web Applications

- Thick/thin client
- Installation
- Latency
- Complexity
- Multitasking
- User experience



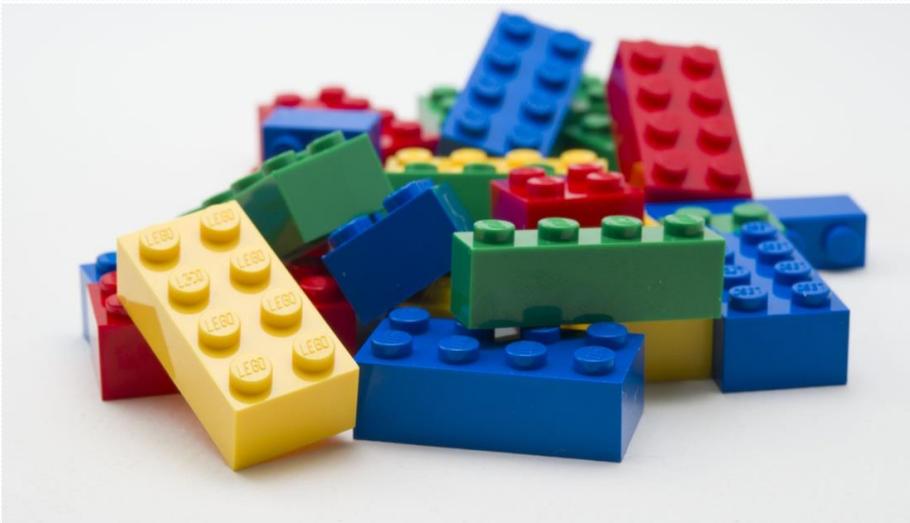
Windows Desktop Applications

- Visual Basic (6.0)
 - 1991
 - Still around, but losing support
- WinForms
 - 2001 (.NET 1.0)
 - VB upgradable
 - Most widely used for legacy applications
- WPF
 - 2006 (.NET 3.0)
 - Most widely used technology for new applications

Why WPF over WinForms?

- Extensibility
- Data binding
- Better performance
 - 2D/3D
 - Hardware acceleration
- Cross platform (Silverlight/XBAP)
- Learning curve

WPF vs. WinForms - Extensibility



WinForms - Extensibility

Click Me!!!

WPF - Extensibility



WPF - Extensibility

- The Lego pieces are called, “User Controls”
 - XAML
 - C# or VB in the background
- Containers vs. single child
- *Example...*

WPF - Data Binding

- Provides a simple and consistent way for applications to present and interact with data
- Modify the underlying data once
- All user controls consuming that data automatically update
- *Example...*

WPF - Designer

- “Visual Basic” style designing
 - More control with raw XAML
- Toolbox
 - Drag and drop
 - XAML automatically written for you
- Visualizes control as they’re written

- *Example....*

WPF - Examples

- TimeBlox