

Microsoft Visual Basic

- Dynamic Memory Allocation
 - No Pointers in VB
 - Just Dynamic Arrays
 - LBound(), UBound()
 - Used to check array bounds
 - Redim(), Redim() Preserve
 - Used to resize arrays

Array Example

```
- ' Wrapper function to add elements to a string-based array
- Public Sub AddStrList(ByVal vsString As String, ByRef raData()
  As String)
-   Dim lIndex As Long
-   On Error GoTo FirstElement
-   lIndex = UBound(raData) + 1
-   ReDim Preserve raData(lIndex)
-   raData(lIndex) = vsString
-   Exit Sub
- FirstElement:
-   ReDim raData(0)
-   raData(0) = vsString
- End Sub
```

Microsoft Visual Basic

- Variable Scope
 - Public (g)
 - Public gnLivesRemaining as Integer
 - Private (m)
 - Private mnScore as Integer
 - Procedure Level
 - Dim nCnt as Integer


Stack Class Example

Microsoft Visual Basic


- Class Files
 - Stack Example
 - Public vs. Private methods
 - A sub is function without return data (void)
 - Instantiating Classes
 - Assigning Object variables requires keyword "Set".

Microsoft Visual Basic

- Control Arrays
 - Used for Dynamic Allocation of controls.
 - Index property identifies instances.
 - Must have a parent (Index Instance 0) already defined.
 - Use Load, Unload command to allocate/deallocate




Control Array Example




Microsoft Visual Basic

- Using OCX Controls
 - Project | Components
- Using DLL Libraries
 - Project | References




Microsoft Visual Basic

- Making EXE files
 - P-code
 - Native-Code
 - Optimizations
 - Fast Code
 - Small Code
- Install Utility
 - Application Setup Wizard
 - InstallShield
 - www.installshield.com




User Control Example

- Color Control
- NumericTextBox Control
 - Only Accepts Numeric Input
 - On Focus auto selects all text
 - Essentially sub-classes the “Intrinsic” VB Text Box.



Socket Example

- MS Winsock Control
 - Alternate method: Use Windows API Calls



Calling Windows API Calls

- API Text Viewer
 - Provides declarations
 - Possibly a few typos.
- API Help
 - <http://msdn.microsoft.com/library/>
 - Platform SDK

Calling Windows API Calls

- Constants
 - Public Const WM_KEYDOWN = &H100
- Declares
 - Declare Function GetLastError Lib "kernel32" Alias "GetLastError" () As Long
- Types
 - Type RECT
 - Left As Long
 - Top As Long
 - Right As Long
 - Bottom As Long
 - End Type

Windows API Example

- Playing WAV files
- Common Dialog Control