The New Kid on the Block

A project by Wayne Phillips

creator of vbWatchdog and other fine products at everythingaccess.com

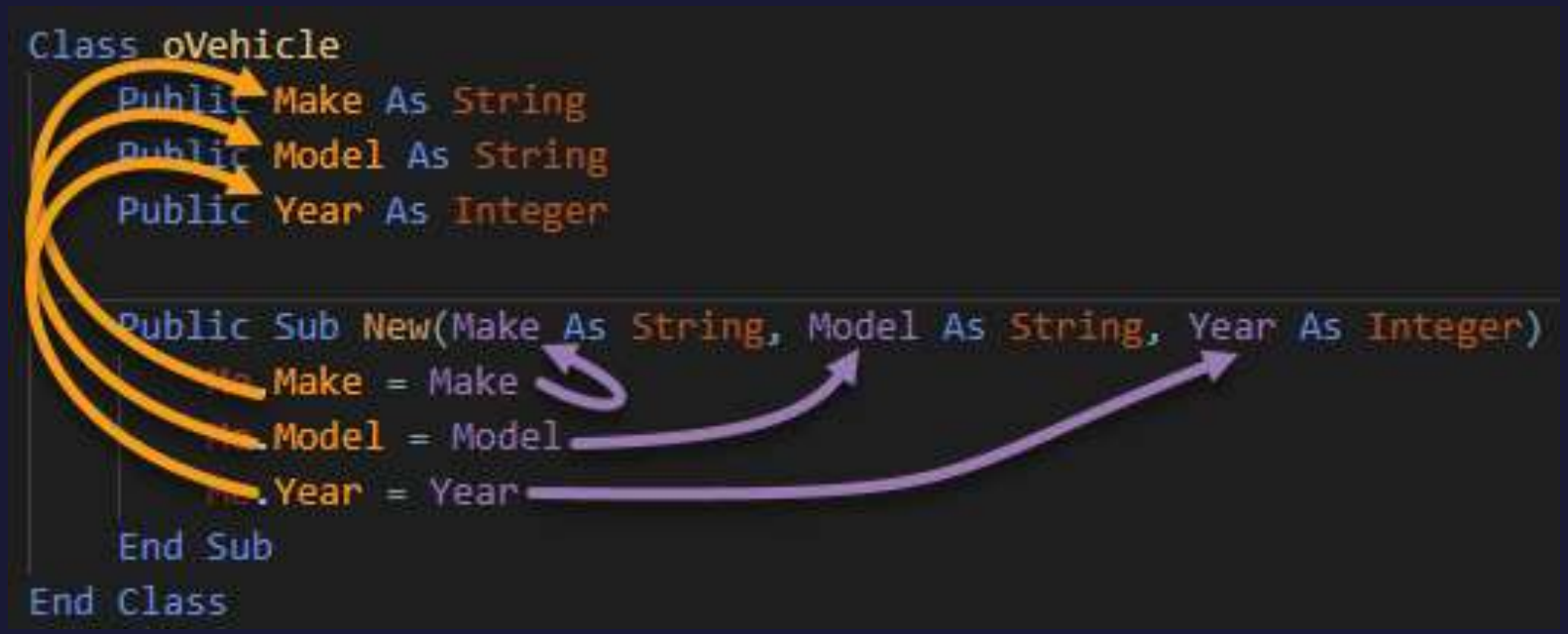
Presented by Mike Wolfe of nolongerset.com

Outline

- IDE (VS Code)
- Debugging
- Compatibility
- New features
- Compilation benefits
- Current limitations
- Future plans
- **My bold prediction**

IDE (Visual Studio Code)

- Semantic highlighting



IDE (Visual Studio Code)

- Semantic highlighting
- Inline parameter hints

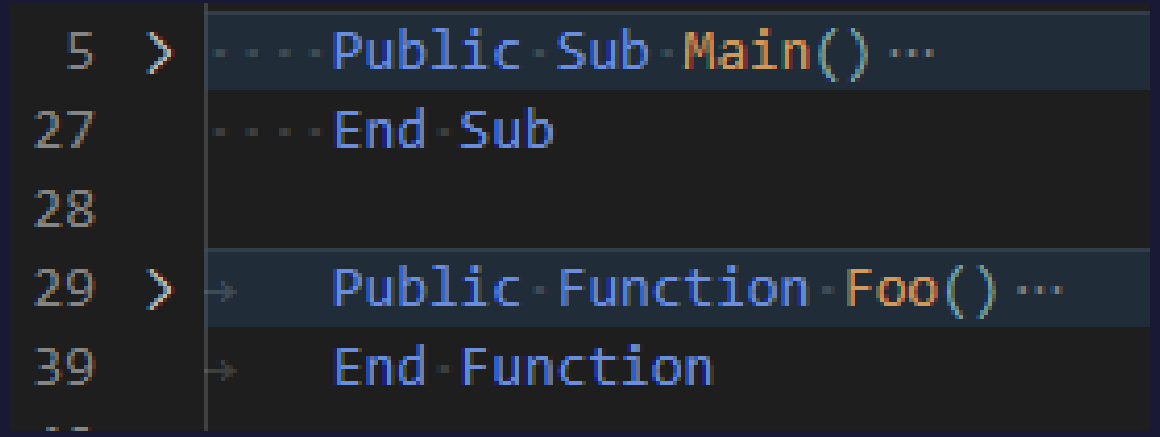
```
MsgBox "Hello world!", vbInformation, Title:="Greetings"
```

```
MsgBox "Hello world!", vbInformation, "Greetings"
```


```
MsgBox prompt:="Hello world!", buttons:=vbInformation, title:="Greetings"
```

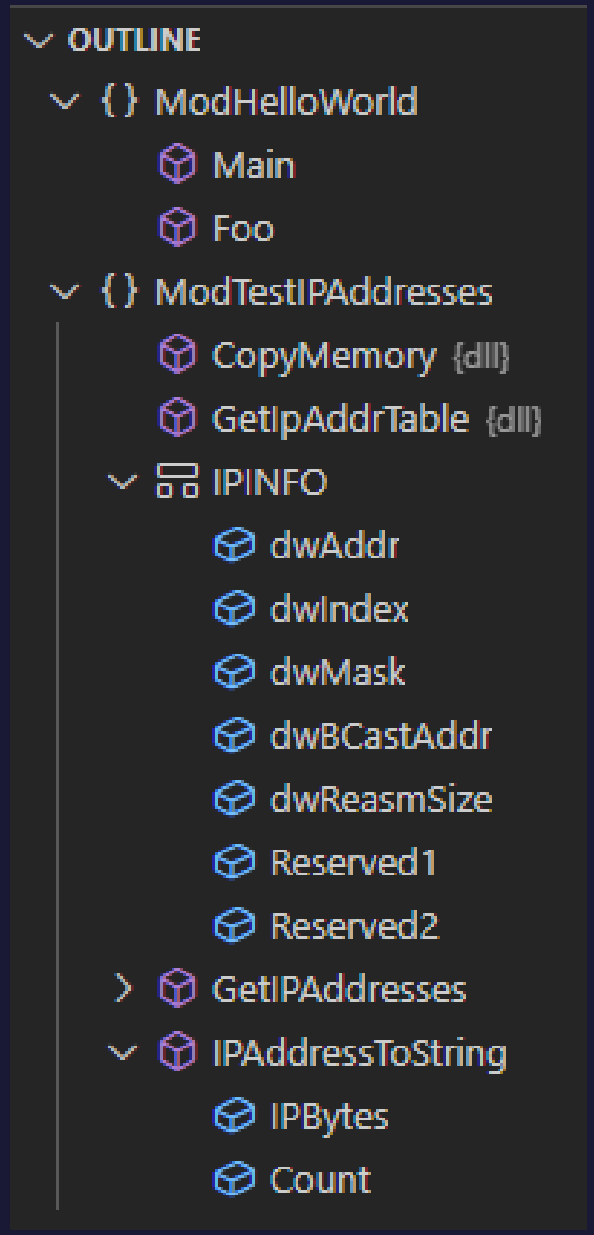
IDE (Visual Studio Code)

- Semantic highlighting
- Inline parameter hints
- Code folding



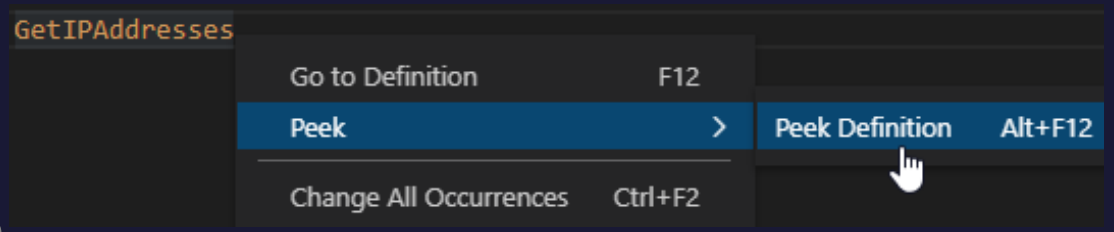
IDE (Visual Studio Code)

- Semantic highlighting
- Inline parameter hints
- Code folding
- Outline view



IDE (Visual Studio Code)

- Semantic highlighting
- Inline parameter hints
- Code folding
- Outline view
- Peek definition

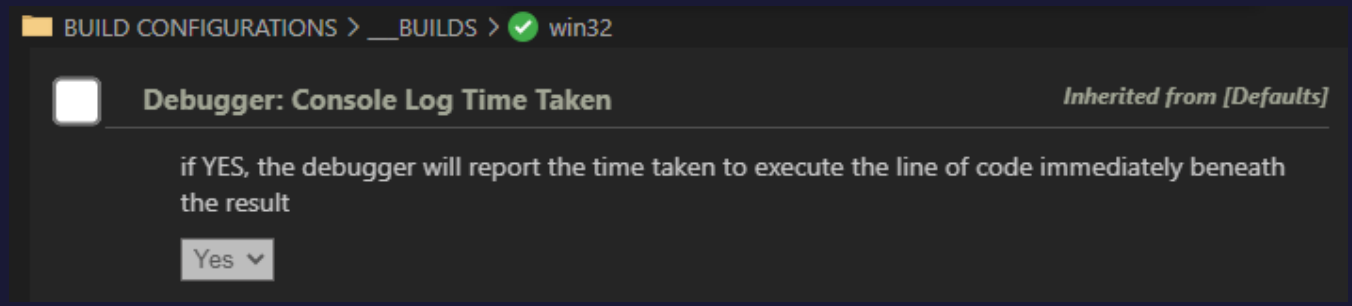


Debugging

- Debug Console

```
DEBUG CONSOLE
→ ?123
  123
  (time taken: 0.0001244s)
→ ?123 * 2
  246
  (time taken: 0.0001346s)
→ ?GetAccessVersionInfo
  Microsoft Access 16.0
  (time taken: 0.4862512s)

> ?"Next command to run"
```



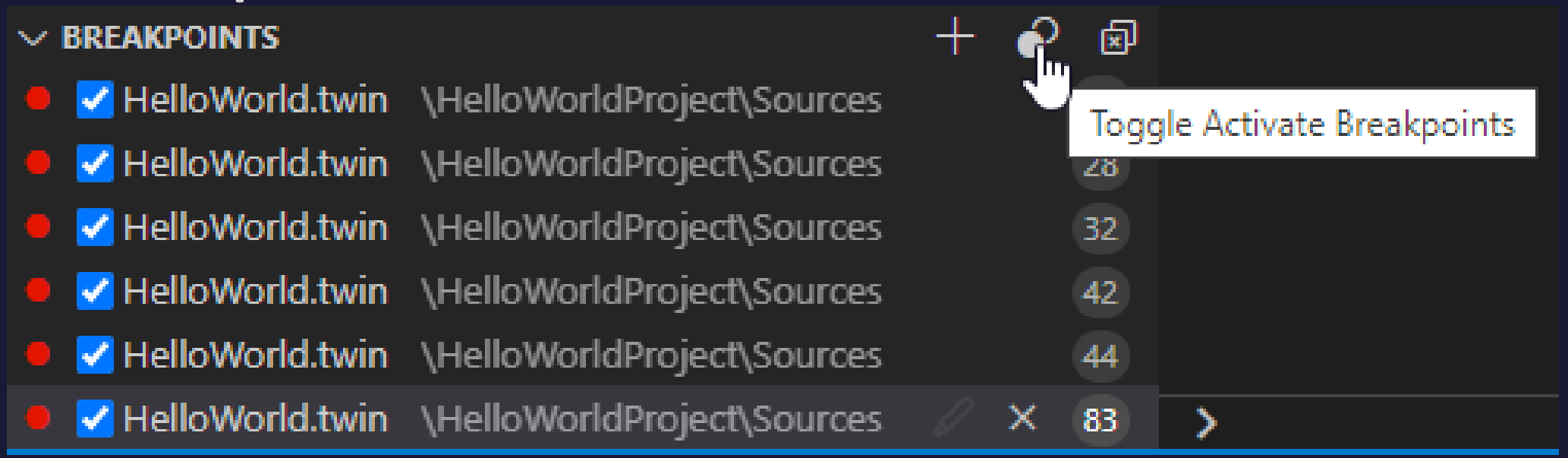
Debugging

- Debug Console
- Breakpoints

```
21  Public Sub TestBreakpoints()
22
23      Debug.Print "A"
24  End Sub
```

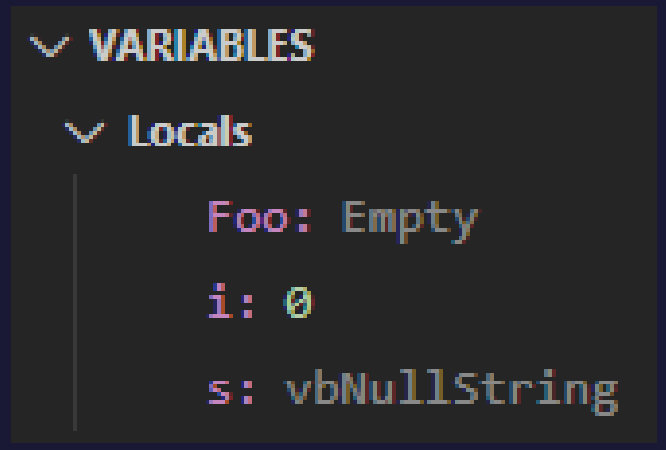
Nothing to break on here!

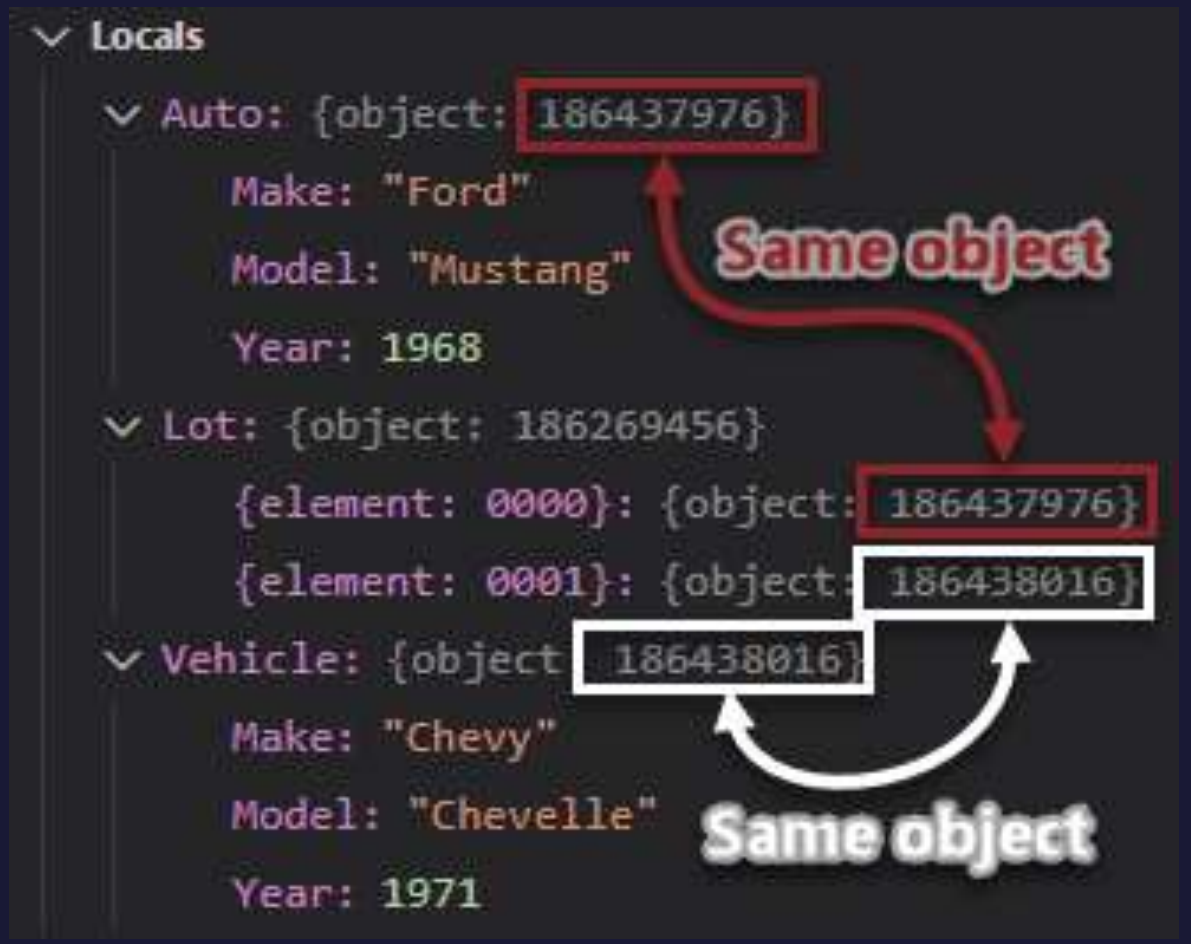
```
155     Sub InlineBreakpoints()
156         Const FeatureIsWorking As Boolean = False
157
158         If FeatureIsWorking Then IWillNotBreak
159     End Sub
```



Debugging

- Debug Console
- Breakpoints
- Locals window

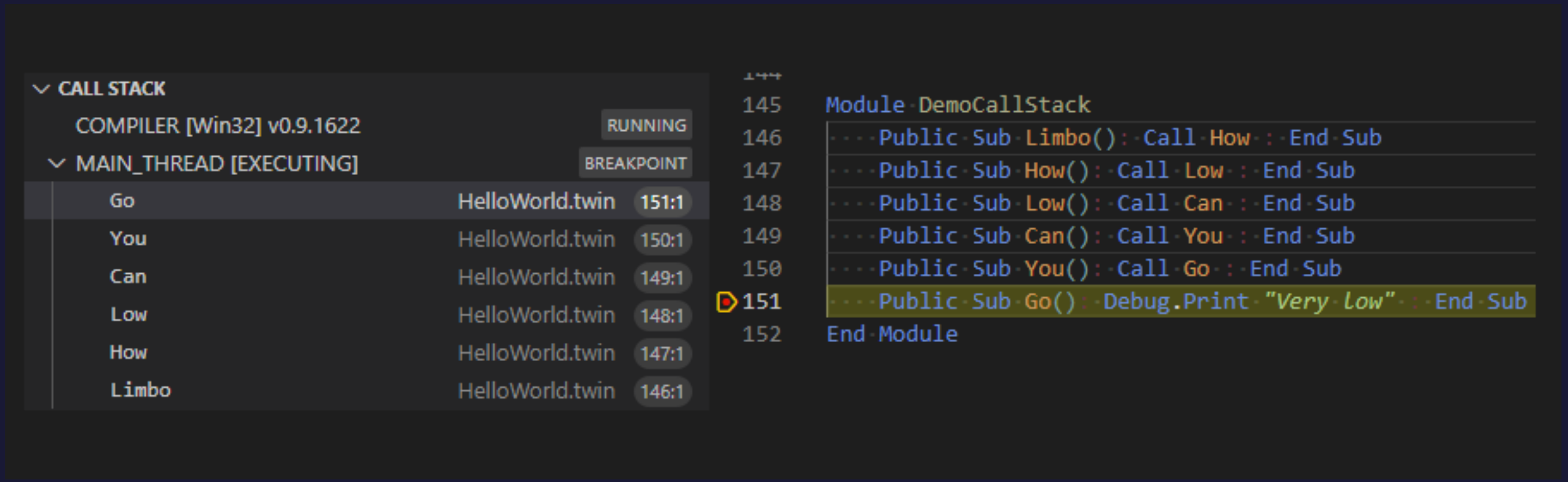




Debugging

- Debug Console
- Breakpoints
- Locals window
- Watch window

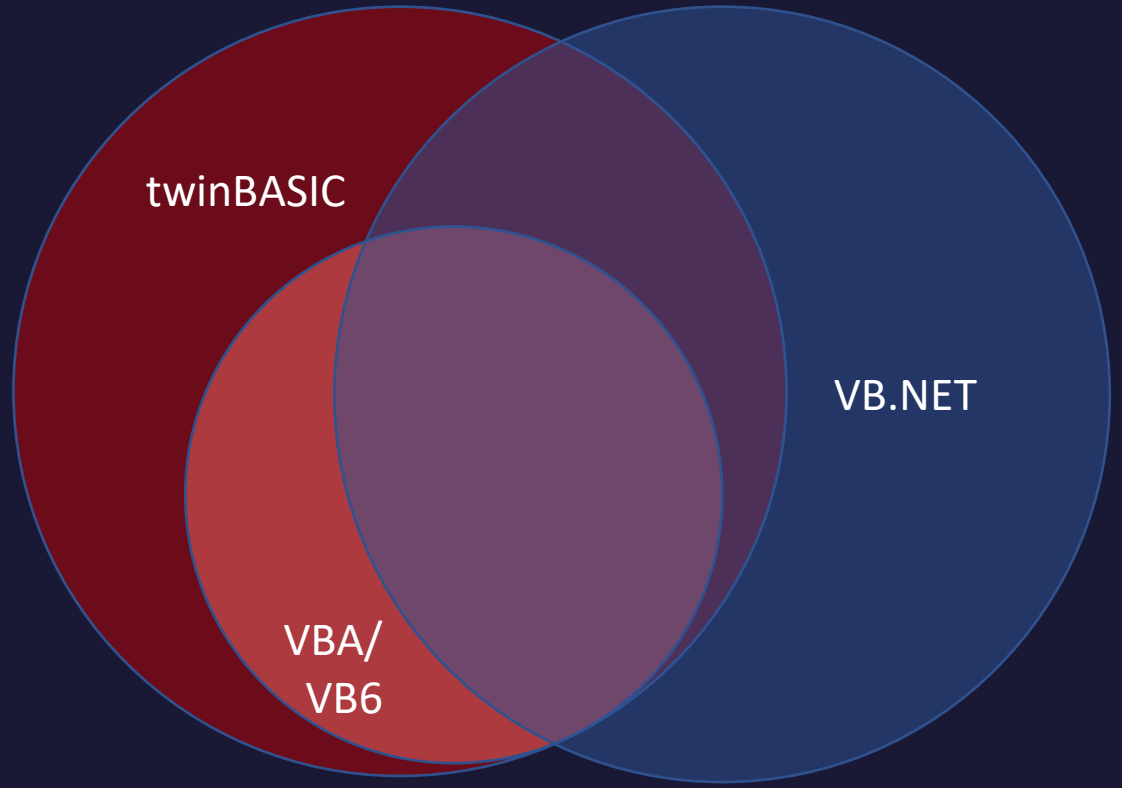
Debugging



- Call stack window

Compatibility

- VBA/VB6 vs. VB.NET vs. twinBASIC



Compatibility

- VBA/VB6 vs. VB.NET vs. twinBASIC
- Pareto Principle: the 80/20 Rule

The difference between 100% compatible and 99% compatible is way more than 1%.

Compatibility

- VBA/VB6 vs. VB.NET vs. twinBASIC
- Pareto Principle: the 80/20 Rule
- Quirks Preserved

Compatibility

- VBA/VB6 vs. VB.NET vs. twinBASIC
- Pareto Principle: the 80/20 Rule
- Quirks Preserved
- Test, Test, Test

Compatibility

- Report Bugs

New Features

- Initialize on declare

```
Dim i As Integer = 1
Dim s As String = "Default"
Dim d As Date = Now()
```

New Features

- Initialize on declare
- Return syntax in functions

```
Function GetCurrentHour() As Byte
    Return Hour(Now)
End Function
```

```
74  Module TestReturnCalls
75      Function Traditional() As String
76          Traditional = "Traditional Function Syntax"
77          Debug.Print "Some cleanup code"
78      End Function
79
80      Function NewReturnSyntax() As String
81          Return "New Return Syntax"
82          Debug.Print "Some more cleanup"
83      End Function
84
85      Sub TestReturnSyntax()
86          Debug.Print Traditional()
87          Debug.Print NewReturnSyntax()
88      End Sub
89  End Module
```

This line never executes!

```
DEBUG CONSOLE
TestReturnSyntax
Some cleanup code
Traditional Function Syntax
New Return Syntax
(time taken: 0.000119s)
```

New Features

- Initialize on declare
- Return syntax in functions
- Parameterized constructors

Not compatible with COM-visible classes!

```
Class oVehicle
    Public Make As String
    Public Model As String
    Public Year As Integer

    Public Sub New(Make As String, _
                   Model As String, _
                   Year As Integer)
        Me.Make = Make
        Me.Model = Model
        Me.Year = Year
    End Sub
End Class
```

```
Sub CtorTest()
    Dim Vehicle As oVehicle
    Set Vehicle = New oVehicle("Ford", "Mustang", 1968)
End Sub
```

```
New ( ByRef Make As String, ByRef Model As String,
ByRef Year As Integer )

New
    in _oVehicle
no further information available.  to add documentation here,
add Attribute VB_Description = "" inside the declaration
of the procedure.
```

1/2

New Features

- Initialize on declare
- Return syntax in functions
- Parameterized constructors
- Method overloading

```
Function Halve(Text As String) As String
    Return Left(Text, Len(Text)\2)
End Function

Function Halve(Value As Single) As Single
    Return Value / 2
End Function

Function Halve(Value As Currency) As Currency
    Return Round(Value/2, 2)
End Function
```

```
DEBUG CONSOLE
?Halve("twinBASIC")
twin
?Halve(CSng(0.51))
0.255
?Halve(CCur(0.51))
0.26
```

New Features

- Initialize on declare
- Return syntax in funct
- Parameterized constr
- Method overloading
- Short circuiting Booleans

```
Sub ShortCircuit()

    AndAlso
    If False And 1/0 Then Debug.Print "I will error at runtime"
    If False AndAlso 1/0 Then Debug.Print "No runtime error"

    OrElse
    If True Or 1/0 Then Debug.Print "I will error at runtime"
    If True OrElse 1/0 Then Debug.Print "No runtime error"

    Ternary If() statement
    Debug.Print IIf(True, "I will error at runtime", 1/0)
    Debug.Print If(True, "No runtime error", 1/0)

End Sub
```

New Features

- Initialize on declare
- Return syntax in functions
- Parameterized constructors
- Method overloading
- Short circuiting Booleans
- Syntax conveniences

```
• obj IsNot Nothing
```

```
• Continue For
• Continue While
• Continue Do
• Exit While
```

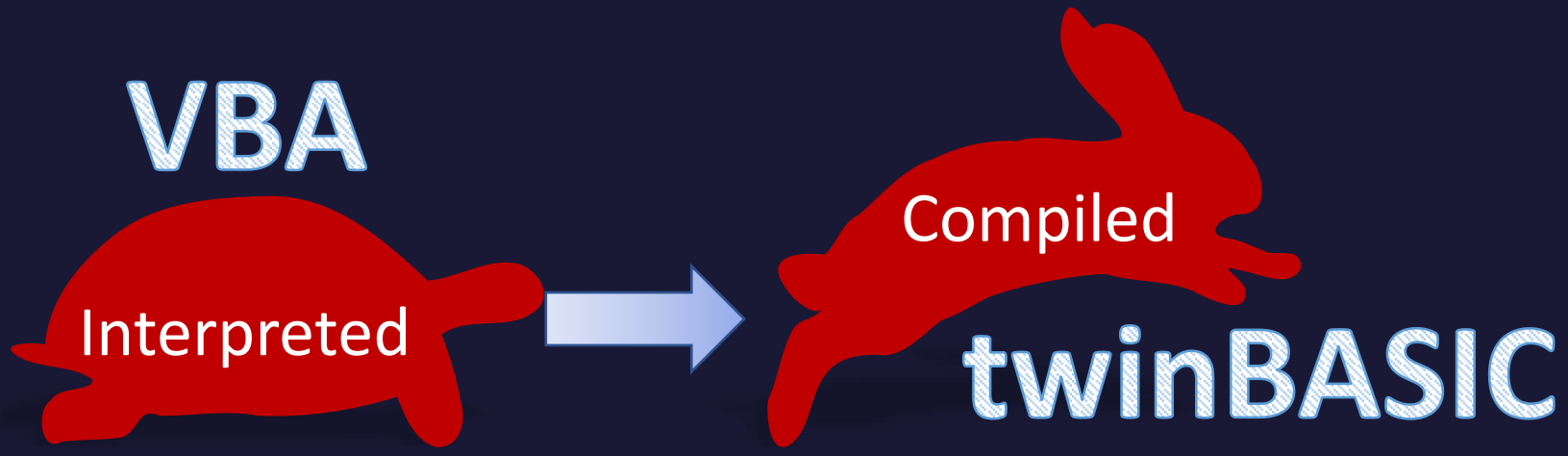
```
• i += 42
• i -= 26
• s &= "a"
```

…and then some

- Generics
- Unicode everywhere (DeclareWide)
- WebEx/vbWatchdog libraries (coming soon)
- Per-procedure Handles/Implements
- Multiple modules in one file
- New datatypes: LongLong, LongPtr, Decimal

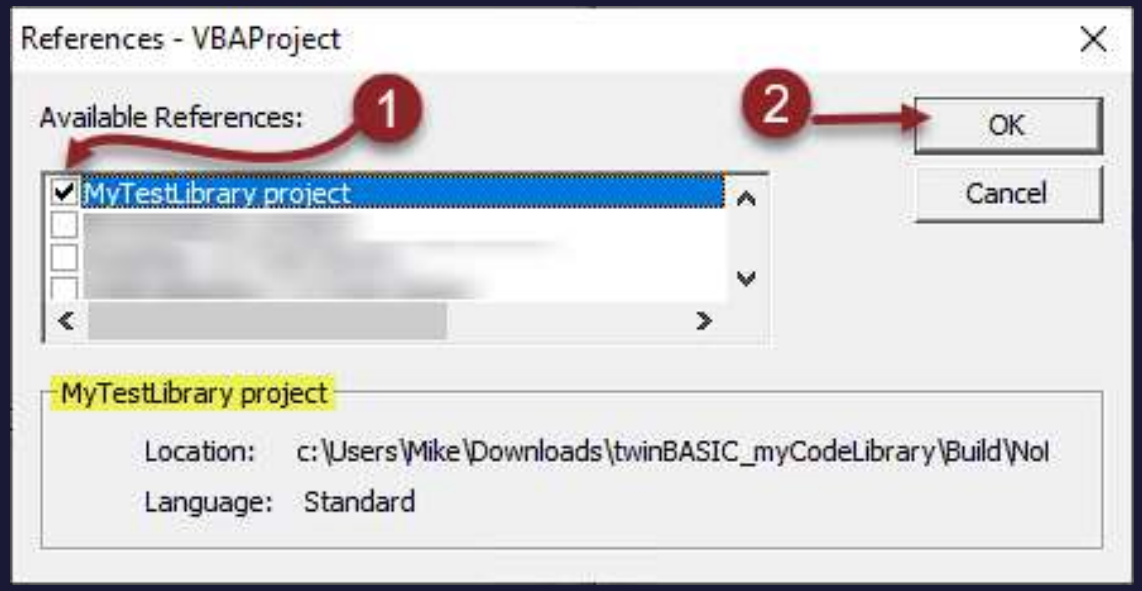
Compilation Benefits

- Native code is faster



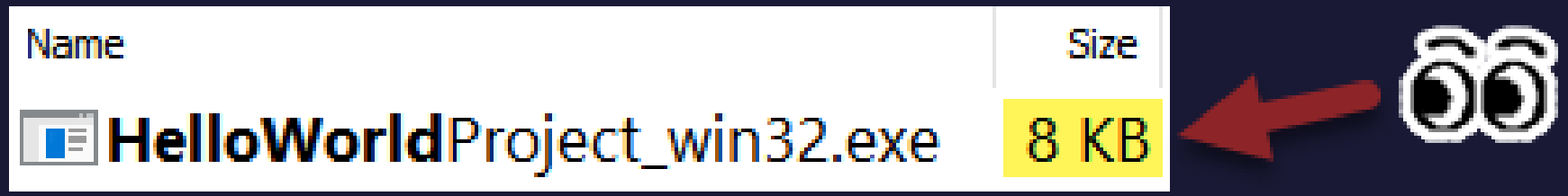
Compilation Benefits

- Native code is faster
- Create ActiveX DLLs



Compilation Benefits

- Native code is faster
- Create ActiveX DLLs
- Lightweight executables



Compilation Benefits

- Native code is faster
- Create ActiveX DLLs
- Lightweight executables
- Requires no runtime

	Runtime (MB)	Hello, world (KB)
MS Access	315.6	*N/A*
Java	69.74	*N/A*
.NET Framework	58.7	*N/A*
.NET Core	52.4	*N/A*
Python	8.03	*N/A*
VB6	1	*N/A*
Go	0	1,900
AutoHotkey	0	1,082
twinBASIC	0	8

Current Limitations

- Generic Error Descriptions

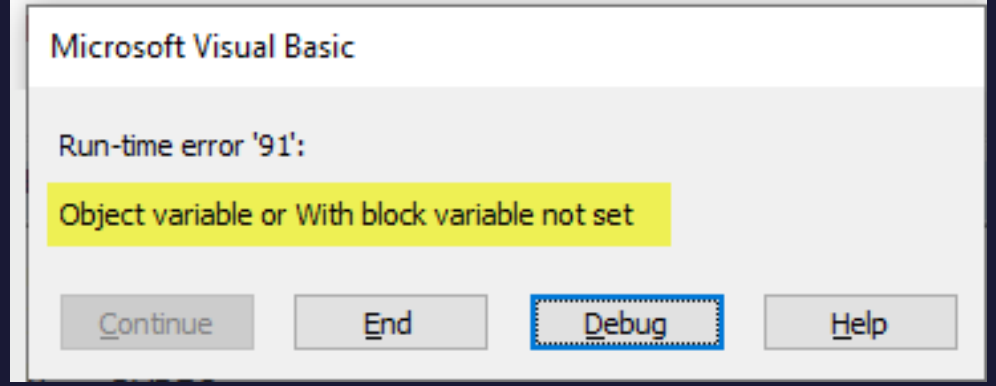
```
231     Sub GenericErrorText()
232         Dim Coll As Collection
233
234         Coll.Add "Item one"
```

Exception has occurred.
Unspecified error
Error Number: -2147467259 (&H80004005)

```
235     End Sub
```

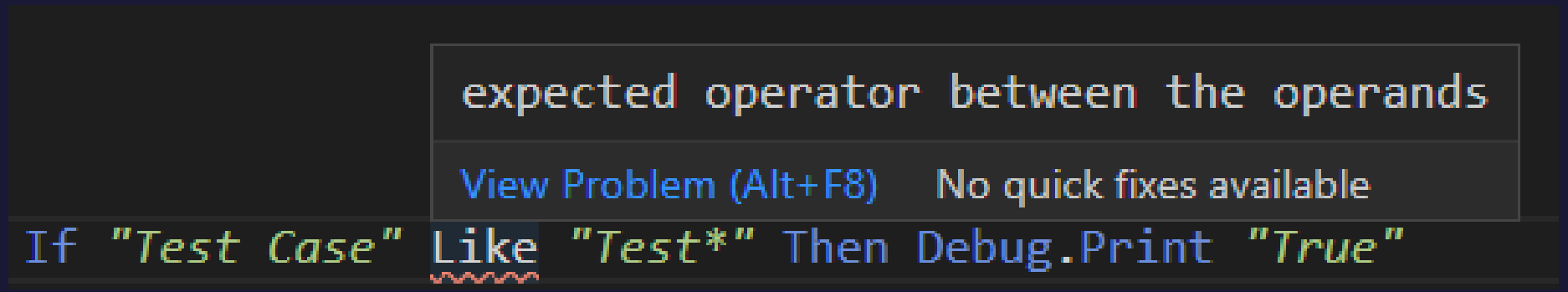
```
Sub GenericErrorText()
    Dim Coll As Collection

    Coll.Add "Item one"    '<-- Error here
```



Current Limitations

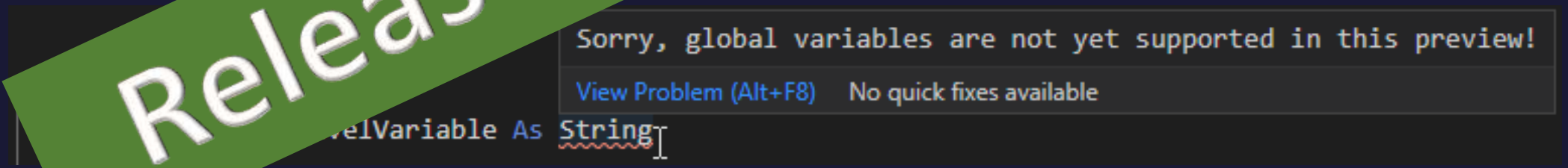
- Generic Error Descriptions
- No **`Like`** operator



Current Limitations

- Generic Error Descri
- No `Like` oper
- No Glob -level variables

Released yesterday!



Current Limitations

- Generic Error Descriptions
- No `Like` operator
- ~~No Global/Module-level variables~~
- **Debug.Print** syntax not supported

```
Module PreviewLimitations
    Sub DebugPrintSyntax()
        Debug.Print "Bitness: "; 32, "Year: "; 2021
    End Sub
End Module
```

```
syntax error.  no handler for this symbol
View Problem (Alt+F8)    No quick fixes available
```

Current Limitations

- Generic Error Descriptions
- No `Like` operator
- ~~No Global/Module-level variables~~
- **Debug.Print** syntax not supported
- No built-in file operations

Use FileSystemObject for now

Future Plans

- GUI framework

Full backwards compatibility with existing VB6 forms!

Future Plans

- GUI framework
- Git VS Code integration
  - Via a Git provider for VS Code

Future Plans

- GUI framework
- Git VS Code integration
- Multi-threading

Requires new syntax

Future Plans

- GUI framework
- Git VS Code integration
- Multi-threading
- 64-bit support

Will require a commercial license

Future Plans

- GUI framework
- Git VS Code integration
- Multi-threading
- 64-bit support
- Cross-platform support (via LLVM)

My Bold Prediction

- 1999: VBA6 => COM Add-in support
- 2010: VBA7 => 64-bit support
- 2025: VBA8 => twinBASIC

Wayne gets paid

Questions?

Links and Resources:

nolongerset.com/devcon-2021/