The Windows API
Advance Sales for Dan's Book and Software!

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Advanced Paradigms

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Presentation Overview

Introduction.

Survey of the Windows API.

Debugging API calls
Resources, conclusion, Q&A.

Question:

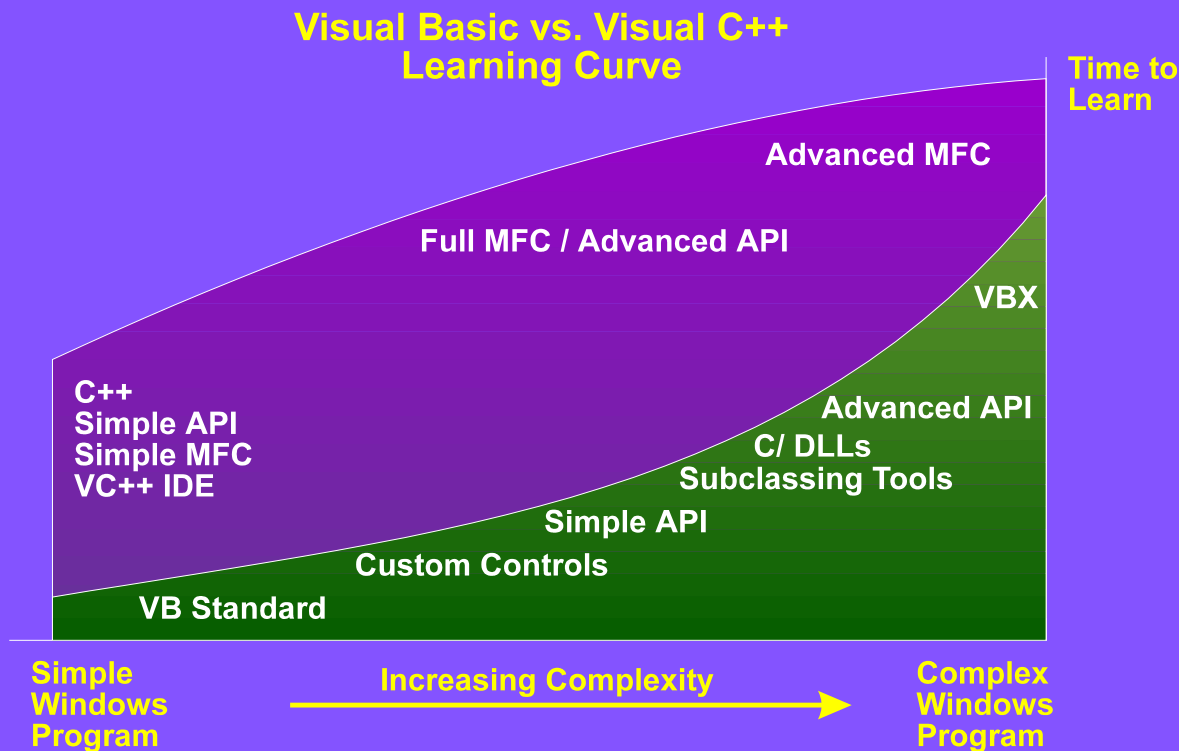**If Visual Basic is so great - why are there so many tasks that require use of the Windows API?**

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Answer:

Levels of Abstraction - Visual Basic encapsulates Windows.

Comparison with C/C++.

Visual Basic vs. Visual C++
Learning Curve

Time to Learn

Advanced MFC

Full MFC / Advanced API

VBX

C++
Simple API
Simple MFC
VC++ IDE

Advanced API
C/ DLLs
Subclassing Tools

Simple API

Custom Controls

VB Standard

Simple Windows Program

Increasing Complexity

Complex Windows Program

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Extending Visual Basic

Windows API.

> **Using "Boilerplate" code.**

> **Learning Windows.**

Commercial Custom Controls & DLLs.

> **Easy to use, but may not match your exact requirements.**

Creating Custom Controls & DLLs.

> **Requires a good knowledge of Windows.**

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The Windows API

Over 1000 functions.

- **Kernel**
- **User**
- **GDI**
- **Others**

Over 100 messages.

Included on every Windows system.

Windows

Information functions.
Attribute functions.
Controlling Windows.

Hardware and System

Keyboard.
Mouse.
System Information.
Cursor/Caret.

```
numlockstate% = GetKeyState%(VK_NUMLOCK)

caplockstate% = GetKeyState%(VK_CAPITAL)

scrollstate% = GetKeyState%(VK_SCROLL)
```

Drawing & Device Contexts

Drawing tools.

Coordinate systems.

Device information.

Drawing functions.

```
' Create the red brush
hbrush% = CreateSolidBrush%(&HFF&)
' Select if for use.
oldbrush% = SelectObject%(picture1.hDC, hbrush%)
' Draw with it
di% = Rectangle(picture1.hDC, 10, 10, 75, 75)
' Select it out of the hDC before deleting it.
hbrush% = SelectObject%(picture1.hDC, oldbrush%)
di% = DeleteObject%(hbrush%)
```

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Icons, Bitmaps & Metafiles

Copying and scaling images.
Recording graphics commands.

```
Dim rc As RECT
Dim di%

GetClientRect picture1.hWnd, rc

' Copy left half of picture to right half
di% = BitBlt(picture1.hDC, rc.right / 2, 0, rc.right / 2,
        rc.bottom, picture1.hDC, 0, 0, SRCCOPY)
```
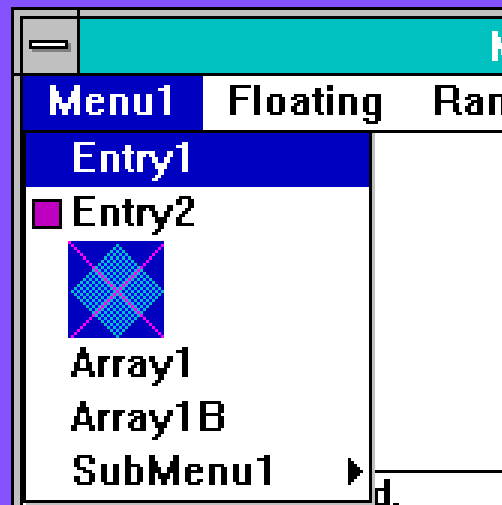
Menus

Using bitmaps.
Custom checkmarks.

Text and Fonts

Font information and selection.

Flexible text drawing.

```
outp$ = "This is a demonstration of word wrapping. "
outp$ = outp$ + "And this is the second line that "
outp$ = outp$ + "demonstrates word wrapping."

di% = DrawText(picture1.hDC, outp$, Len(outp$), rc,
        DT_WORDBREAK)
```

Printing

Printer setup dialogs.

Printer configuration.

Abort printing.

Other topics

Modules & Tasks.

DOS & File functions.

Clipboard.

Serial I/O.

Common dialogs.

Color palettes.

Sound.

Messages

SendMessage, PostMessage.

List controls.

Text controls.

Combo box controls.

```
Dim lines%
lines% = SendMessageBynum(text1.hWnd,
        EM_GETLINECOUNT, 0, 0)
MsgBox Str$(lines%), 0, "Lines in Text1"
```

Debugging API Calls

File Not Found

Error in Loading DLL

Sub or Function Not Defined

Bad DLL Calling Convention

General Protection Fault

It just doesn't do ANYTHING! (SpyWorks)

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Resources

Professional edition of Visual Basic.

The Visual Basic Programmer's Guide to the Windows API (Ziff Davis Press).

MSDN CD-ROM.

VBZ (Foxhall Publishing)

Compuserve and BBS's.