

# Introduction to Visual Basic, Applications Edition

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Prerequisites for presentation:

Knowledge of Visual Basic 3

Name of demo code ZIP file:

VBITVBAI.ZIP

# Introduction to Visual Basic, Applications Edition

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Quick History of Visual Basic

Where VBA fits now

- As hosted by Excel 5

- As hosted by Project

Where is Visual Basic going?

# Presentation Plan

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The Excel Environment for VB3  
Programmers

VBA Compared to VB3

Object Models for VB3 Programmers

Writing VBA Code

# The Excel Environment for VB3 Programmers

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Excel Workbooks

Tabbed Dialogs

Macro Recorder

Object Browser

Modules

DialogSheets

VB Toolbar

Debug Window

# VBA Compared to VB3

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## New Additions

VB Engine in C++, 32 Bit, NT, Mac

Linear Editor vs. Procedure Editor

Line Continuation character

For Each ... Next

With ... End With

Pre-defined constants

Data Types - Boolean, Date, Object

Variants contain object, array, error subtypes

Dynamic arrays & Objects in User Defined data types

Named, Optional, ParamArray Parameters

TypeName, ByRef

# VBA Compared to VB3

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## Missing in Action

No EXE's

No Forms Module

No VBX Custom Controls

No Access Engine for database access

No hWnd Property

No editing code during debugging

Maximum textbox and cell length = 255

# VBA Compared to VB3

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## Compatibility with VB3

Don't use the new stuff!

Create the XL Object

```
Dim APPXL as Object, XL as Object
```

```
Set APPXL = GetObject("Excel.Application")
```

```
Set XL = APPXL.Application
```

Use brackets for Close, Show, AddItem, RemoveItem

```
Workbooks(1).[Close]
```

# Object Models for VB3 Programmers

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Properties vs. Methods

Collections vs. Containers

VCR Object Model

Visual Basic Object Model

Excel Object Model

Project Object Model



# VCR (the main "root" object)

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## Buttons() (collection of button objects)

PlayButton (a button object)

RecordButton

StopButton

## Channels()(collection of channel objects)

Channel1 (a channel object)

Channel2

## Clock (a clock object)

Time (a time object)

Programs() (program objects)

# Sample VCR Properties & Methods

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VCR.Clock.Time.CurrentTime = 10:00 AM

VCR.Clock.Time.CurrentDate = 2/5/94

VCR.Clock.Program(1).StartTime = 7:00 PM

VCR.Clock.Program(1).EndTime = 8:00 PM

VCR.Clock.Program(1).StartDate = 2/7/94

VCR.Clock.Program(1).Channel = 10

VCR.Eject

VCR.Play

# Sample VCR Program

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## Sub RecordMovie()

VCR.Channel1.Channel = 17

VCR.Channel1.Name = "HBO"

While VCR.Clock.Time > 7:00 PM and VCR.Clock.Time < 9:30 PM

    If VCR.TapeIn = TRUE then

        VCR.Channels("HBO").Select

        If Not VCR.Recording then VCR.Record

    Else

        VCR.Display.Text = "Insert Tape!"

        VCR.Beep

    EndIf

Wend

End Sub

# Visual Basic Object Model

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App

Clipboard

Debug

Printer

Screen

# Visual Basic Object Model

## Application Object

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App

Form

Controls()

Database

RecordSets

Table

Fields

Index

Dynaset

Fields

Snapshot

Fields

TableDefs

Indexes

QueryDef

# Excel Object Model

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## Application

Workbook

AddIn

Debug

Dialog

Window

Menubar

Toolbar

# Excel Object Model

## Workbook Object

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### Workbook

Worksheet

Chart

DialogSheet

Module

Style

Window

Name

RoutingSlip

Mailer(Mac only)

# Excel Object Model

## Worksheet Object

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### Worksheet

Range	Areas
Border	Font
Interior	Characters
Font	Name
Sound Note	Style
Border	Font
Interior	Outline
PivotTable	PivotField
PivotItem	PageSetup
Scenario	Drawing Objects



# Range Object Properties

AddIndent	Application	Column
ColumnWidth	Count	Creator
CurrentArray	CurrentRegion	Dependents
DirectDependents	DirectPrecedents	EntireColumn
EntireRow	Font	Formula
FormulaArray	FormulaHidden	FormulaLocal
FormulaR1C1	FormulaR1C1Local	HasArray
HasFormula	Height	Hidden
HorizontalAlignment	Interior	Left
LocationInTable	Locked	Name
Next	NumberFormat	NumberFormatLocal
Orientation	OutlineLevel	PageBreak
Parent	PivotField	PivotItem
PivotTable	Precedents	PrefixCharacter
Previous	Row	RowHeight
ShowDetail	SoundNote	Style
Summary	Text	Top
UseStandardHeight	UseStandardWidth	Value
VerticalAlignment	Width	Worksheet
WrapText		

# Range Object Methods

Activate	Address	AddressLocal
AdvancedFilter	ApplyNames	ApplyOutlineStyles
Areas	AutoFill	AutoFilter
AutoFit	AutoFormat	AutoOutline
BorderAround	Borders	Calculate
Cells	Characters	CheckSpelling
Clear	ClearContents	ClearFormats
ClearNotes	ClearOutline	ColumnDifferences
Columns	Consolidate	Copy
CopyPicture	CreateNames	CreatePublisher
Cut	DataSet	Delete
DialogBox	End	FillDown
FillLeft	FillRight	FillUp
Find	FindNext	FindPrevious
FunctionWizard	GoalSeek	Group
Insert	Item	Justify
ListNames	NavigateArrow	NoteText
Offset	Parse	PasteSpecial
PrintOut	PrintPreview	Range
RemoveSubtotal	Replace	Resize

# Project Object Model

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## Application

Projects()

Windows()

## Calendar

Weekdays

Periods

Years

# Project Object Model Application Object

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## Application

- Projects()

  - Calendars()

  - Resources()

    - Assignments()

    - Calendar

  - Tasks()

    - Assignments()

    - PredecessorTasks()

    - SuccessorTasks()

- Windows()

  - PaneTop

  - PaneBottom

# Project Object Model

## Calendar Object

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### Calendar

Weekdays

Shift1

Shift2

Shift3

Periods

Shift1

Shift2

Shift3

Years

Months

Days

Shift1

Shift2

Shift3

# VBA Procedures

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**Sub - from Record Macro**

**Function - user defined functions**

**Property - Let, Get, Set**

# Procedure Arguments

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Named arguments

Optional arguments (must be variants)

IsMissing function

ParamArray argument

# Module Declarations

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## Options

- Option Explicit

- Option Base 1 (to match Excel collections)

- Option Compare Text

- Option Private Module

**Public = Global, Private, Static, etc.**

**User Defined Types**

**Constants**



# Debugging

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## Debug Window

- Code Pane

- Immediate Pane

## Error Handling

- General error handling procedures

- User Interrupts

# Menus/Toolbars

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Menu Editor

MenuBar

Menus

MenuItems

ToolBar

ToolBarButtons

# Controls

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Placed on WorkSheet or DialogSheet

Link to procedure or cell

Events

# Dialog Sheets

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## Pre-defined & Built-in dialogs and methods

MsgBox, InputBox

Application.Dialogs(xlDialogOpen).Show arg3:=True

GetOpenFileName, GetSaveAsFileName

## Custom dialogs

# Special Procedures

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## Automatic Procedures

Auto\_Open, Auto\_Close

## OnEvent Procedures

OnTime, OnSheetActivate, OnSheetDeactivate

OnWindow, OnKey, OnCalculate, OnEntry

OnData, OnRepeat, OnUndo

## Addins

# International Use

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**Object Libraries**

**Locale**

**Conversion Functions**

# Summary & Discussion

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