

Visual Basic for Applications Programming in Microsoft Project

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**Prerequisite: An Introduction to Visual Basic for
Applications**

Demo Code: `pj_vba.zip`

Agenda

Visual Basic for Applications Background
Microsoft Project Object Model
Questions and Answers

Background

Named Arguments

Microsoft Project 3.0

```
FileOpen .Name="project1.mpp" ReadOnly="Yes"
```

Visual Basic for Applications

```
FileOpen Name:="project1.mpp", ReadOnly:=True
```

Without Named Arguments

```
FileOpen("project1.mpp", , True)
```

Visual Basic for Applications Background

Collections

`Tasks (3)`

`Tasks.UniqueID (5)`

For Each...Next Statement

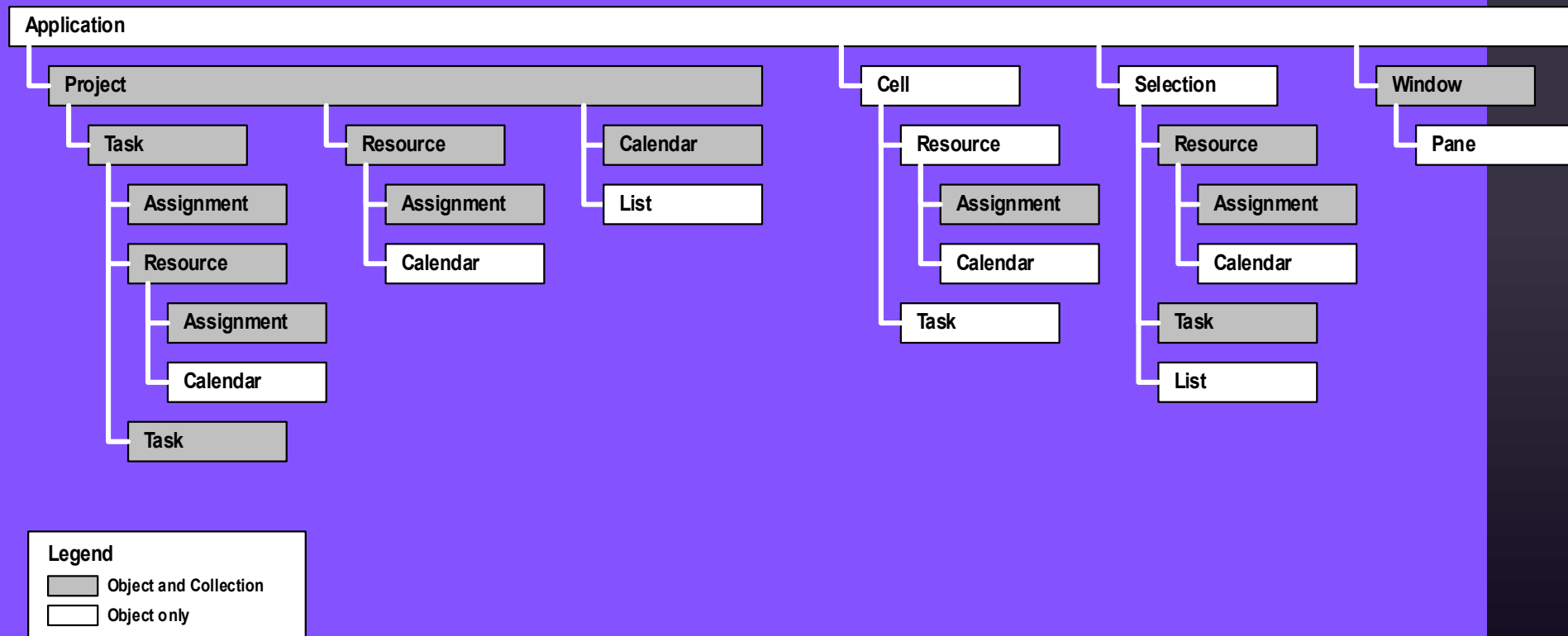
```
For Each t in ActiveProject.Tasks
```

```
    t.Duration = 2 * t.Duration
```

```
Next t
```

Overview of Object Hierarchy

Microsoft Project Object Model



Object Hierarchy

Navigation

```
Application.Projects(1).Tasks(3).Duration = "3d"
```

```
Projects(1).Tasks(3).Duration = "3d"
```

```
ActiveProject.Tasks(3).Duration = "3d"
```

With Statement

```
With ActiveProject.Tasks(3)
```

```
    .Name = "Paint the House"
```

```
    .Start = "2/12/95"
```

```
    .Duration = "3d"
```

```
Next t
```

Object Hierarchy

Common Objects

Differences

Microsoft Excel

Workbooks (2) .Close

Microsoft Project

Projects (2) .Activate

FileClose

Application Object

General Methods

Options Properties

Scheduling Methods

User Interface Commands

```
Application.FileOpen Name:="project1.mpp"
```

```
FileOpen Name:="project1.mpp"
```

Constants

```
FileSaveAs Name:="project1.xls", Format:=pjXLS
```

```
FileOpen Name:="project1.mpp", Format:=5
```

Global Options

```
CalcSetting = Application.Calculation  
Application.Calculation = pjManual  
...  
Application.Calculation = CalcSetting
```

Corresponding Application Methods

```
OptionsCalculation Automatic:=False
```

Date Arithmetic

DateAdd

```
MsgBox DateAdd("7/11/94 8:00am", "3d")
```

DateSubtract

```
MsgBox DateSubtract("7/13/94 5:00pm", "3d")
```

DateDifference

```
MsgBox DateAdd("7/11/94 8:00am", "7/13/94 5:00pm")
```

Date Arithmetic Example

Date & Duration Formatting

DateFormat

```
MsgBox DateFormat("12/31/94 8:00am",pjDate_mmmm_dd_yyyy)
```

DurationFormat

```
MsgBox DurationFormat("3d", pjWeeks)
```

DurationValue

```
MsgBox DurationValue("2d")
```

Project Object

Referencing Project Objects

`ActiveProject.ProjectStart`

`Projects (2) .ProjectStart`

`Projects ("project1.mpp") .ProjectStart`

CurrentView, CurrentTable and CurrentFilter

`MsgBox ActiveProject.CurrentView`

Project Object

List Collections

TaskTableList

TaskFilterList

TaskViewList

ViewList

Example

ResourceTableList

ResourceFilterList

ResourceViewList

ReportList

Task Object

Referencing a Task

`Tasks (1)`

`Tasks.UniqueID (4)`

`Tasks("Paint the House")`

Task Information

Fields

Schedule Logic

Structure

Project Task Information:

Properties

`ActiveProject.Tasks (4) .Duration`

`ActiveProject.Tasks (3) .ResourceNames`

Objects

`ActiveProject.Tasks (3) .Resources (1) .Name`

Properties/Fields

`ActiveProject.Tasks (4) .Predecessors`

Objects

`ActiveProject.Tasks (4) .PredecessorTasks (1) .Duration`

Structure Task Information

Properties/Fields

`ActiveProject.Tasks(4).OutlineNumber`

Objects

`ActiveProject.Tasks(4).OutlineParent`

`ActiveProject.Tasks(4).OutlineChildren`

Resource Object

Referencing a Resource

```
Resources (3)
```

```
Resources.UniqueID (10)
```

```
Resources ("Susan")
```

Information

Fields

```
ActiveProject.Resources ("Susan").MaxUnits = 1
```

```
ActiveProject.Resources.BaseCalendar = "Night Shift"
```

GetField and SetField Methods

```
Resources (1).GetField (pjResourceName)
```

```
Resources (1).SetField (pjResourceName, "Joe")
```

Assignment Object

Referencing an Assignment

Unique ID

For Each...Next

Fields

```
ActiveProject.Resources(1).Assignments(1).TaskName
```

Example

Assignments Over Time

Assignment Information Over Time

Resource Usage View

Resource Graph View

Crosstab Reports

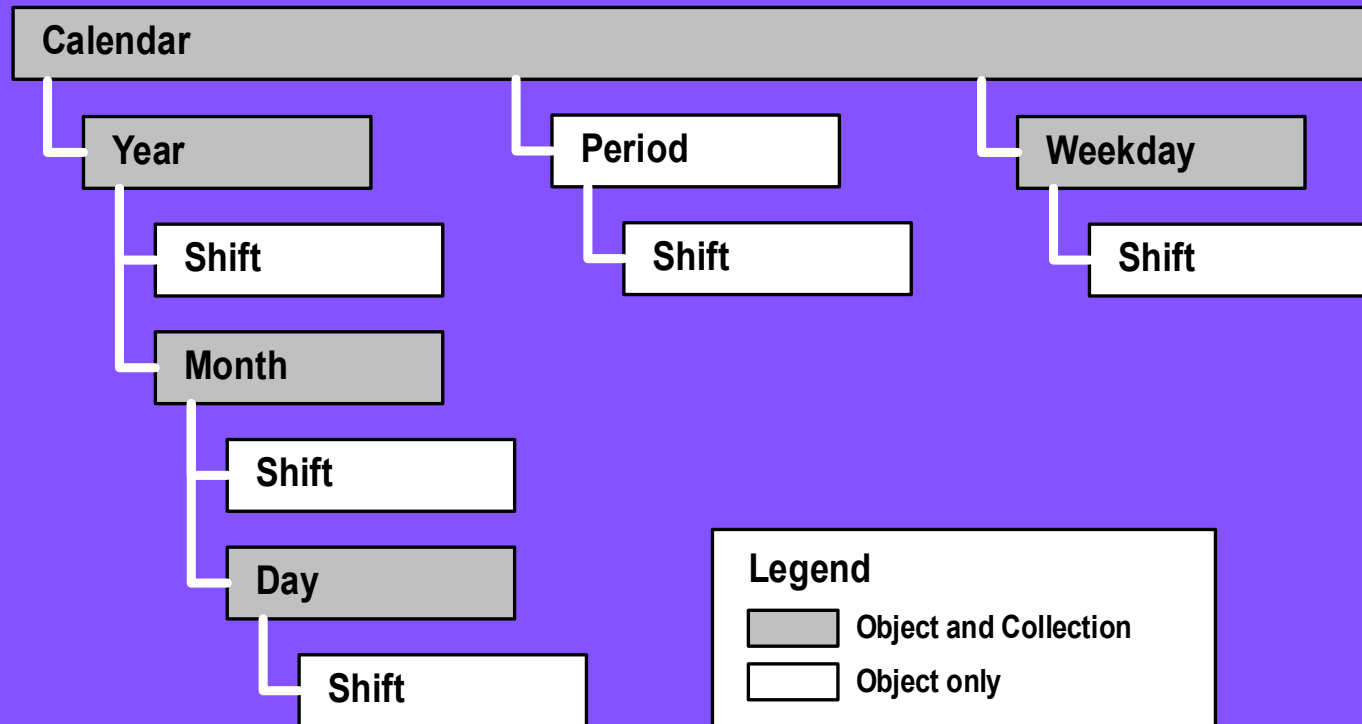
TimescaledData Method

```
TimescaledData(1, 1, "1/1/94", "12/31/94",  
—          pjWork, pjTimescaleMonths)
```

Example

Calendar Object Hierarchy

Calendar Objects



Calendar Objects

Period Method and Object

```
With BaseCalendars("Standard")  
    .Period("7/4/94").Working = False  
    .Period("7/4/94", "7/5/94").Working = False  
End With
```

Year, Month, Day Objects

```
For Each y in ActiveProject.Calendar  
    y.Months(7).Days(4).Working = False  
Next y
```

Calendar Objects (cont.)

Weekday Object

```
Cal.Weekdays(6).Working = False
```

```
Cal.Weekdays(pjFriday).Working = False
```

```
Cal.Weekdays("Fri").Working = False
```

```
Cal.Weekdays("Friday").Working = False
```

Shared Properties and Methods

- Shift Objects

- Working Property

- Default Method

Selection Objects

Theory

Cell Object

Task and Resource Objects

```
MsgBox ActiveCell.Task.Name
```

```
If Not (ActiveCell.Task Is Nothing) Then
```

```
    MsgBox ActiveCell.Task.Name
```

```
End If
```

FieldID and FieldName

Selection Objects (cont.)

Selection Object

Extension of Cell Object

Task and Resource Collections

FieldIDList and FieldNameList

```
If Not (ActiveCell.Task Is Nothing) Then
    strTemp = InputBox("Enter Value")
    For Each t in ActiveSelection.Tasks
        t.SetField(ActiveCell.FieldID, strTemp)
    Next t
End If
```

Questions?
