

Variable Declaration

```

Const trialDays As Integer = 30 'Constant
Dim isInvoiced As Boolean = True 'Boolean
Dim keystroke As Char '16 bit Unicode character
Dim count As Integer = 0 'Signed 32-bit integer
Dim invoiceId As Long = 0 'Signed 64-bit integer
Dim total As Double = 0 'Double precision float
Dim tax As Single = 0 'Single precision float
Dim firstName As String = String.Empty 'String

Dim today As DateTime = DateTime.Now 'Current Date
Dim saleDate As DateTime = New _
    DateTime(2004, 1, 23, 13, 48, 39)
    '(year, month, day, hours, minutes, seconds)

Dim items(100) As Integer 'Array (See ArrayList)

Enum OrderStatus As Integer
    NewOrder = 1
    Picked
    Shipped
End Enum
    
```

Procedures/Properties

```

//Access Modifiers: public, friend,
//private, protected, protected friend

Private Function Markup(ByVal total _
    As Double) As Double
    Return total * _markupPercent
End Function

Friend Property InvoiceId() As Integer
    Get
        Return _invoiceId
    End Get
    Set(ByVal Value As Integer)
        _invoiceId = Value
    End Set
End Property
    
```

Loops

```

'While Loop
While i < 10
    i += 1
End While

'For Loop
For i As Integer = 0 To 9
    If (isFound) Then _
        Exit For 'Exit loop
Next

'For each loop
Dim dt As DataTable
For Each _
    dr As DataRow In dt.Rows

    Console.WriteLine( _
        dr(0).ToString())
Next

'Do Loop
Do
    i += 1
Loop Until i > 9
    
```

Branching

```

'If/Else statement
If (i > 0 AndAlso j <> 5) OrElse k = 1 Then
Else If (i < 0) Then
End If

Select Case i 'Case statement
    Case Is < 2
        Return "Less than two"
    Case 3, 5
        Return "Three or five"
    Case Else 'Default
        Return "Other"
End Select

j = CInt(IIIf(i > 0, 1, 0)) 'Immediate If
    
```

Operators

Computational

- Negate/Subtract
- * Multiplication
- / Division Float
- \ Division Integer
- mod Modulus
- + Addition

Logical

- not Logical NOT
- < Less than
- > Greater than
- <= Less than or equal
- >= Greater than or equal
- = Equality
- <> Inequality
- And Logical AND
- Or Logical OR
- AndAlso Short Circuit
- OrElse Short Circuit

Assignment

- = Assignment

Compound assignment operators

- += Addition
- = Subtraction
- *= Multiplication
- /= Division

Parameter Definitions

```

'Value, Reference, Dynamic
Private Sub Calc( _
    ByVal i As Integer, _
    ByRef j As Integer, _
    ByVal ar() As Integer)
End Sub
    
```

Error Handling

```

Try
    i = 10 / 0
    ' "Catch" the error
Catch ex As Exception
    Dim s As String = "Error:" + vbCrLf _
        + "Target: " + ex.TargetSite.ToString _
        + vbCrLf + "Error: " _
        + ex.Message.ToString + vbCrLf _
        + "Trace: " + ex.StackTrace.ToString
    MsgBox(s, MsgBoxStyle.Critical, _
        "Error")
Finally 'Always do this
    inputFile.Close()
End Try
    
```

GAC Location

C:\WINDOWS\assembly\GAC