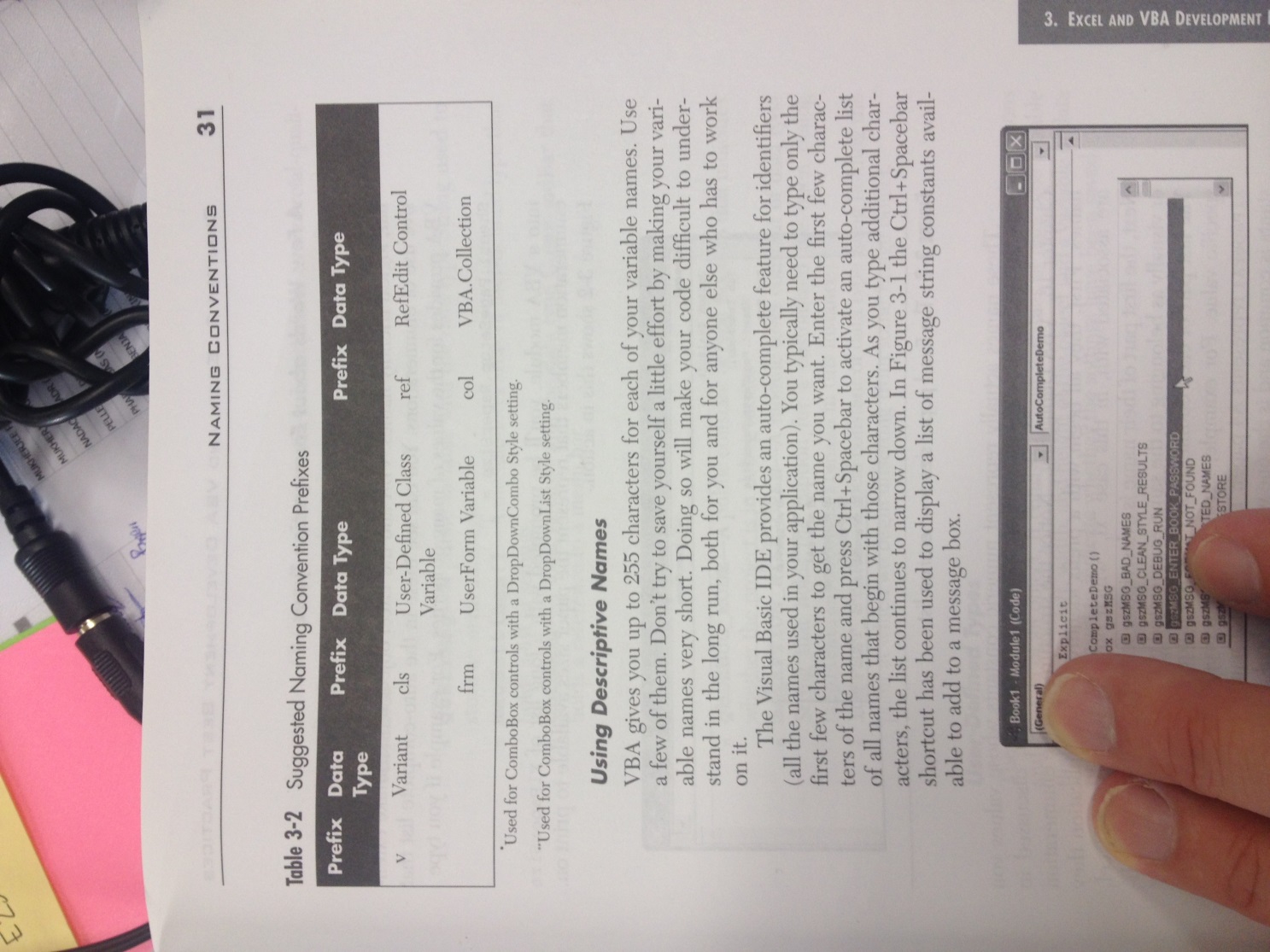


Excel   
VBA

Gaëtan Mourmant

# C:\Users\Gaetan\Documents\0 - Pro\0 - Clients\Ieseg\2015-2016\Excel VBA - MISMA-EI53UE\photo 1.JPGNAMING Convention



References

The following Visual Basic Language References can be found here:  
<https://msdn.microsoft.com/en-us/library/office/jj692818.aspx>

# Basic blocks

Data Types

Operators

Variables and Constants

String

Conversions

Dates

# Control Flows

If…Then…Else…End If

For…To…Next

For each…in…Next

# Specialization

Array

Errors

Directory

Input-Output

Math

Financials

# Advanced

Collection

Compiler

Registry

Miscellaneous

Basic blocks

# Data Types Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Convert between data types. | [CBool](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CByte](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CCur](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CDate](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CDbl](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CDec](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CInt](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CLng](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CLngLng](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CLngPtr](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CSng](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CStr](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CVar](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CVErr](https://msdn.microsoft.com/en-us/library/office/gg251526.aspx), [Fix](https://msdn.microsoft.com/en-us/library/office/gg264147.aspx), [Int](https://msdn.microsoft.com/en-us/library/office/gg264147.aspx) |
| Set intrinsic data types. | [Boolean](https://msdn.microsoft.com/en-us/library/office/gg264308.aspx), [Byte](https://msdn.microsoft.com/en-us/library/office/gg251726.aspx), [Currency](https://msdn.microsoft.com/en-us/library/office/gg264338.aspx), [Date](https://msdn.microsoft.com/en-us/library/office/gg278460.aspx), [Double](https://msdn.microsoft.com/en-us/library/office/gg264155.aspx), [Integer](https://msdn.microsoft.com/en-us/library/office/gg251684.aspx), [Long](https://msdn.microsoft.com/en-us/library/office/gg264240.aspx), [LongLong](https://msdn.microsoft.com/en-us/library/office/gg278463.aspx), [LongPtr](https://msdn.microsoft.com/en-us/library/office/gg251378.aspx), [Object](https://msdn.microsoft.com/en-us/library/office/gg264754.aspx), [Single](https://msdn.microsoft.com/en-us/library/office/gg278621.aspx), [String](https://msdn.microsoft.com/en-us/library/office/gg251467.aspx), [Variant (default)](https://msdn.microsoft.com/en-us/library/office/gg251448.aspx) |
| Verify data types. | [IsArray](https://msdn.microsoft.com/en-us/library/office/gg264552.aspx), [IsDate](https://msdn.microsoft.com/en-us/library/office/gg278584.aspx), [IsEmpty](https://msdn.microsoft.com/en-us/library/office/gg264227.aspx), [IsError](https://msdn.microsoft.com/en-us/library/office/gg278547.aspx), [IsMissing](https://msdn.microsoft.com/en-us/library/office/gg251721.aspx), [IsNull](https://msdn.microsoft.com/en-us/library/office/gg278616.aspx), [IsNumeric](https://msdn.microsoft.com/en-us/library/office/gg264560.aspx), [IsObject](https://msdn.microsoft.com/en-us/library/office/gg251535.aspx) |

|  |
| --- |
| **NoteNote** |
| **CLngLng** and **LongLong** are valid on 64-bit platforms only. |

# Operators Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Arithmetic. | [^](https://msdn.microsoft.com/en-us/library/office/gg264365.aspx), [–](https://msdn.microsoft.com/en-us/library/office/gg278487.aspx), [\*](https://msdn.microsoft.com/en-us/library/office/gg278835.aspx), [/](https://msdn.microsoft.com/en-us/library/office/gg278686.aspx), [\](https://msdn.microsoft.com/en-us/library/office/gg264594.aspx), [Mod](https://msdn.microsoft.com/en-us/library/office/gg264708.aspx), [+](https://msdn.microsoft.com/en-us/library/office/gg278870.aspx), [&](https://msdn.microsoft.com/en-us/library/office/gg264104.aspx), [=](https://msdn.microsoft.com/en-us/library/office/gg264756.aspx) |
| Comparison. | [=](https://msdn.microsoft.com/en-us/library/office/gg264384.aspx), [<>](https://msdn.microsoft.com/en-us/library/office/gg264384.aspx), [<](https://msdn.microsoft.com/en-us/library/office/gg264384.aspx), [>](https://msdn.microsoft.com/en-us/library/office/gg264384.aspx), [<=](https://msdn.microsoft.com/en-us/library/office/gg264384.aspx), [>=](https://msdn.microsoft.com/en-us/library/office/gg264384.aspx), [Like](https://msdn.microsoft.com/en-us/library/office/gg251796.aspx), [Is](https://msdn.microsoft.com/en-us/library/office/gg264676.aspx) |
| Logical operations. | [Not](https://msdn.microsoft.com/en-us/library/office/gg278748.aspx), [And](https://msdn.microsoft.com/en-us/library/office/gg251591.aspx), [Or](https://msdn.microsoft.com/en-us/library/office/gg264205.aspx), [Xor](https://msdn.microsoft.com/en-us/library/office/gg264132.aspx), [Eqv](https://msdn.microsoft.com/en-us/library/office/gg251743.aspx), [Imp](https://msdn.microsoft.com/en-us/library/office/gg278553.aspx) |

# Variables and Constants Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Assign value. | [Let](https://msdn.microsoft.com/en-us/library/office/gg264823.aspx) |
| Declare variables or constants. | [Const](https://msdn.microsoft.com/en-us/library/office/gg264363.aspx), [Dim](https://msdn.microsoft.com/en-us/library/office/gg251750.aspx), [Private](https://msdn.microsoft.com/en-us/library/office/gg278839.aspx), [Public](https://msdn.microsoft.com/en-us/library/office/gg264680.aspx), [New](https://msdn.microsoft.com/en-us/library/office/gg278471.aspx), [Static](https://msdn.microsoft.com/en-us/library/office/gg251620.aspx) |
| Declare module as private. | [Option Private Module](https://msdn.microsoft.com/en-us/library/office/gg264605.aspx) |
| Get information about a variant. | [IsArray](https://msdn.microsoft.com/en-us/library/office/gg264552.aspx), [IsDate](https://msdn.microsoft.com/en-us/library/office/gg278584.aspx), [IsEmpty](https://msdn.microsoft.com/en-us/library/office/gg264227.aspx), [IsError](https://msdn.microsoft.com/en-us/library/office/gg278547.aspx), [IsMissing](https://msdn.microsoft.com/en-us/library/office/gg251721.aspx), [IsNull](https://msdn.microsoft.com/en-us/library/office/gg278616.aspx), [IsNumeric](https://msdn.microsoft.com/en-us/library/office/gg264560.aspx), [IsObject](https://msdn.microsoft.com/en-us/library/office/gg251535.aspx), [TypeName](https://msdn.microsoft.com/en-us/library/office/gg278698.aspx), [VarType](https://msdn.microsoft.com/en-us/library/office/gg278470.aspx) |
| Refer to current object. | [Me](https://msdn.microsoft.com/en-us/library/office/gg251792.aspx) |
| Require explicit variable declarations. | [Option Explicit](https://msdn.microsoft.com/en-us/library/office/gg278855.aspx) |
| Set default data type. | [Deftype](https://msdn.microsoft.com/en-us/library/office/gg251404.aspx) |

# String Manipulation Keyword Summary

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | | |
| **Action** | | **Keywords** |
| Compare two strings. | | [StrComp](https://msdn.microsoft.com/en-us/library/office/gg264346.aspx) |
| Convert strings. | | [StrConv](https://msdn.microsoft.com/en-us/library/office/gg264628.aspx) |
| Convert to lowercase or uppercase. | | [Format](https://msdn.microsoft.com/en-us/library/office/gg251755.aspx), [Lcase](https://msdn.microsoft.com/en-us/library/office/gg264497.aspx), [Ucase](https://msdn.microsoft.com/en-us/library/office/gg264252.aspx) |
| Create string of repeating character. | | [Space](https://msdn.microsoft.com/en-us/library/office/gg278869.aspx), [String](https://msdn.microsoft.com/en-us/library/office/gg264797.aspx) |
| Find length of a string. | | [Len](https://msdn.microsoft.com/en-us/library/office/gg251657.aspx) |
| Format a string. | | [Format](https://msdn.microsoft.com/en-us/library/office/gg251755.aspx) |
| Justify a string. | | [LSet](https://msdn.microsoft.com/en-us/library/office/gg278790.aspx), [Rset](https://msdn.microsoft.com/en-us/library/office/gg251322.aspx) |
| Manipulate strings. | | [InStr](https://msdn.microsoft.com/en-us/library/office/gg264811.aspx), [Left](https://msdn.microsoft.com/en-us/library/office/gg251556.aspx), [LTrim](https://msdn.microsoft.com/en-us/library/office/gg278916.aspx), [Mid](https://msdn.microsoft.com/en-us/library/office/gg251677.aspx), [Right](https://msdn.microsoft.com/en-us/library/office/gg278801.aspx), [RTrim](https://msdn.microsoft.com/en-us/library/office/gg278916.aspx), [Trim](https://msdn.microsoft.com/en-us/library/office/gg278916.aspx) |
| Set string comparison rules. | | [Option Compare](https://msdn.microsoft.com/en-us/library/office/gg278697.aspx) |
| Work with ASCII and ANSI values. | | [Asc](https://msdn.microsoft.com/en-us/library/office/gg264313.aspx), [Chr](https://msdn.microsoft.com/en-us/library/office/gg264465.aspx) |

# Conversion Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| ANSI value to string. | [Chr](https://msdn.microsoft.com/en-us/library/office/gg264465.aspx) |
| String to lowercase or uppercase. | [Format](https://msdn.microsoft.com/en-us/library/office/gg251755.aspx), [LCase](https://msdn.microsoft.com/en-us/library/office/gg264497.aspx), [Ucase](https://msdn.microsoft.com/en-us/library/office/gg264252.aspx) |
| Date to serial number. | [DateSerial](https://msdn.microsoft.com/en-us/library/office/gg264202.aspx), [DateValue](https://msdn.microsoft.com/en-us/library/office/gg278648.aspx) |
| Decimal number to other bases. | [Hex](https://msdn.microsoft.com/en-us/library/office/gg278508.aspx), [Oct](https://msdn.microsoft.com/en-us/library/office/gg251431.aspx) |
| Number to string. | [Format](https://msdn.microsoft.com/en-us/library/office/gg251755.aspx), [Str](https://msdn.microsoft.com/en-us/library/office/gg264590.aspx) |
| One data type to another. | [CBool](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CByte](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CCur](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CDate](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CDbl](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CDec](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CInt](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CLng](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CLngLng](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CLngPtr](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CSng](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CStr](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CVar](https://msdn.microsoft.com/en-us/library/office/gg278896.aspx), [CVErr](https://msdn.microsoft.com/en-us/library/office/gg251526.aspx), [Fix](https://msdn.microsoft.com/en-us/library/office/gg264147.aspx), [Int](https://msdn.microsoft.com/en-us/library/office/gg264147.aspx) |
| Date to day, month, weekday, or year. | [Day](https://msdn.microsoft.com/en-us/library/office/gg278653.aspx), [Month](https://msdn.microsoft.com/en-us/library/office/gg264760.aspx), [Weekday](https://msdn.microsoft.com/en-us/library/office/gg264334.aspx), [Year](https://msdn.microsoft.com/en-us/library/office/gg264675.aspx) |
| Time to hour, minute, or second. | [Hour](https://msdn.microsoft.com/en-us/library/office/gg264741.aspx), [Minute](https://msdn.microsoft.com/en-us/library/office/gg264277.aspx), [Second](https://msdn.microsoft.com/en-us/library/office/gg278910.aspx) |
| String to ASCII value. | [Asc](https://msdn.microsoft.com/en-us/library/office/gg264313.aspx) |
| String to number. | [Val](https://msdn.microsoft.com/en-us/library/office/gg264296.aspx) |
| Time to serial number. | [TimeSerial](https://msdn.microsoft.com/en-us/library/office/gg251654.aspx), [TimeValue](https://msdn.microsoft.com/en-us/library/office/gg278435.aspx) |

# Dates and Times Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Get the current date or time. | [Date](https://msdn.microsoft.com/en-us/library/office/gg278644.aspx), [Now](https://msdn.microsoft.com/en-us/library/office/gg278671.aspx), [Time](https://msdn.microsoft.com/en-us/library/office/gg251598.aspx) |
| Perform date calculations. | [DateAdd](https://msdn.microsoft.com/en-us/library/office/gg251759.aspx), [DateDiff](https://msdn.microsoft.com/en-us/library/office/gg251417.aspx), [DatePart](https://msdn.microsoft.com/en-us/library/office/gg251733.aspx) |
| Return a date. | [DateSerial](https://msdn.microsoft.com/en-us/library/office/gg264202.aspx), [DateValue](https://msdn.microsoft.com/en-us/library/office/gg278648.aspx) |
| Return a time. | [TimeSerial](https://msdn.microsoft.com/en-us/library/office/gg251654.aspx), [TimeValue](https://msdn.microsoft.com/en-us/library/office/gg278435.aspx) |
| Set the date or time. | [Date](https://msdn.microsoft.com/en-us/library/office/gg251705.aspx), [Time](https://msdn.microsoft.com/en-us/library/office/gg264380.aspx) |
| Time a process. | [Timer](https://msdn.microsoft.com/en-us/library/office/gg264416.aspx) |

Control Flows

# Control Flow Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Branch. | [GoSub...Return](https://msdn.microsoft.com/en-us/library/office/gg251648.aspx), [GoTo](https://msdn.microsoft.com/en-us/library/office/gg251368.aspx), [On Error](https://msdn.microsoft.com/en-us/library/office/gg251688.aspx), [On...GoSub](https://msdn.microsoft.com/en-us/library/office/gg264382.aspx), [On...GoTo](https://msdn.microsoft.com/en-us/library/office/gg264382.aspx) |
| Exit or pause the program. | [DoEvents](https://msdn.microsoft.com/en-us/library/office/gg264522.aspx), [End](https://msdn.microsoft.com/en-us/library/office/gg251671.aspx), [Exit](https://msdn.microsoft.com/en-us/library/office/gg251570.aspx), [Stop](https://msdn.microsoft.com/en-us/library/office/gg264373.aspx) |
| Loop. | [Do...Loop](https://msdn.microsoft.com/en-us/library/office/gg278815.aspx), [For...Next](https://msdn.microsoft.com/en-us/library/office/gg251601.aspx), [For Each...Next](https://msdn.microsoft.com/en-us/library/office/gg264596.aspx), [While...Wend](https://msdn.microsoft.com/en-us/library/office/gg264682.aspx), [With](https://msdn.microsoft.com/en-us/library/office/gg264723.aspx) |
| Make decisions. | [Choose](https://msdn.microsoft.com/en-us/library/office/gg264716.aspx), [If...Then...Else](https://msdn.microsoft.com/en-us/library/office/gg251599.aspx), [Select Case](https://msdn.microsoft.com/en-us/library/office/gg278665.aspx), [Switch](https://msdn.microsoft.com/en-us/library/office/gg264257.aspx) |
| Use procedures. | [Call](https://msdn.microsoft.com/en-us/library/office/gg251710.aspx), [Function](https://msdn.microsoft.com/en-us/library/office/gg264233.aspx), [Property Get](https://msdn.microsoft.com/en-us/library/office/gg264197.aspx), [Property Let](https://msdn.microsoft.com/en-us/library/office/gg278788.aspx), [Property Set](https://msdn.microsoft.com/en-us/library/office/gg264263.aspx), [Sub](https://msdn.microsoft.com/en-us/library/office/gg278504.aspx) |

# If...Then...Else Statement

Conditionally executes a group of [statements](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx), depending on the value of an [expression](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx).

**Syntax**

**If** condition **Then** [statements] [**Else** elsestatements]

Or, you can use the block form syntax:

**If** condition **Then**   
[statements]

[**ElseIf** condition-n **Then**  
[elseifstatements]

[**Else**  
[elsestatements]]

**End If**

The **If...Then...Else** statement syntax has these parts:

|  |  |
| --- | --- |
| **Part** | **Description** |
| condition | Required. One or more of the following two types of expressions: |
|  | A [numeric expression](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) or [string expression](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) that evaluates to **True** or **False**. If condition is [Null](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx), condition is treated as **False**. |
|  | An expression of the form **TypeOf** objectname **Is** objecttype. The objectname is any object reference and objecttype is any valid object type. The expression is **True** if objectname is of the [object type](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) specified by objecttype; otherwise it is **False**. |
| statements | Optional in block form; required in single-line form that has no **Else** clause. One or more statements separated by colons; executed if condition is **True**. |
| condition-n | Optional. Same as condition. |
| elseifstatements | Optional. One or more statements executed if associated condition-n is **True**. |
| elsestatements | Optional. One or more statements executed if no previous condition or condition-n expression is **True**. |

**Remarks**

You can use the single-line form (first syntax) for short, simple tests. However, the block form (second syntax) provides more structure and flexibility than the single-line form and is usually easier to read, maintain, and debug.

|  |
| --- |
| **NoteNote** |
| With the single-line form, it is possible to have multiple statements executed as the result of an **If...Then** decision. All statements must be on the same line and separated by colons, as in the following statement: |

If A > 10 Then A = A + 1 : B = B + A : C = C + B

A block form **If** statement must be the first statement on a line. The **Else**, **ElseIf**, and **End If** parts of the statement can have only a [line number](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) or [line label](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) preceding them. The block **If** must end with an **End If** statement.

To determine whether or not a statement is a block **If**, examine what follows the **Then** [keyword](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx). If anything other than a [comment](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) appears after **Then** on the same line, the statement is treated as a single-line **If** statement.

The **Else** and **ElseIf** clauses are both optional. You can have as many **ElseIf** clauses as you want in a block **If**, but none can appear after an **Else** clause. Block **If** statements can be nested; that is, contained within one another.

When executing a block **If** (second syntax), condition is tested. If condition is **True**, the statements following **Then** are executed. If condition is **False**, each **ElseIf** condition (if any) is evaluated in turn. When a **True** condition is found, the statements immediately following the associated **Then** are executed. If none of the **ElseIf** conditions are **True** (or if there are no **ElseIf** clauses), the statements following **Else** are executed. After executing the statements following **Then** or **Else**, execution continues with the statement following **End If**.

**Tip** **Select Case** may be more useful when evaluating a single expression that has several possible actions. However, the **TypeOf** objectname **Is** objecttype clause can't be used with the **Select Case** statement.

|  |
| --- |
| **NoteNote** |
| **TypeOf** cannot be used with hard data types such as Long, Integer, and so forth other than Object. |

## Example

This example shows both the block and single-line forms of the **If...Then...Else** statement. It also illustrates the use of **If TypeOf...Then...Else**.

Dim Number, Digits, MyString

Number = 53 ' Initialize variable.

If Number < 10 Then

Digits = 1

ElseIf Number < 100 Then

' Condition evaluates to True so the next statement is executed.

Digits = 2

Else

Digits = 3

End If

' Assign a value using the single-line form of syntax.

If Digits = 1 Then MyString = "One" Else MyString = "More than one"

Use **If TypeOf** construct to determine whether the Control passed into a procedure is a text box.

Sub ControlProcessor(MyControl As Control)

If TypeOf MyControl Is CommandButton Then

Debug.Print "You passed in a " & TypeName(MyControl)

ElseIf TypeOf MyControl Is CheckBox Then

Debug.Print "You passed in a " & TypeName(MyControl)

ElseIf TypeOf MyControl Is TextBox Then

Debug.Print "You passed in a " & TypeName(MyControl)

End If

End Sub

# For...Next Statement

Repeats a group of [statements](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) a specified number of times.

**Syntax**

**For** counter **=** start **To** end [**Step** step]  
[statements]  
[**Exit For**]  
[statements]

**Next** [counter]

The **For…Next** statement syntax has these parts:

|  |  |
| --- | --- |
| **Part** | **Description** |
| counter | Required. Numeric [variable](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) used as a loop counter. The variable can't be a [Boolean](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) or an [array](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) element. |
| start | Required. Initial value of counter. |
| end | Required. Final value of counter. |
| step | Optional. Amount counter is changed each time through the loop. If not specified, step defaults to one. |
| statements | Optional. One or more statements between **For** and **Next** that are executed the specified number of times. |

**Remarks**

The step [argument](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) can be either positive or negative. The value of the step argument determines loop processing as follows:

|  |  |
| --- | --- |
| **Value** | **Loop executes if** |
| Positive or 0 | counter <= end |
| Negative | counter >= end |

After all statements in the loop have executed, step is added to counter. At this point, either the statements in the loop execute again (based on the same test that caused the loop to execute initially), or the loop is exited and execution continues with the statement following the **Next** statement.

|  |
| --- |
| **TipTip** |
| Changing the value of counter while inside a loop can make it more difficult to read and debug your code. |

Any number of **Exit For** statements may be placed anywhere in the loop as an alternate way to exit. **Exit For** is often used after evaluating of some condition, for example **If...Then**, and transfers control to the statement immediately following **Next**.

You can nest **For...Next** loops by placing one **For...Next** loop within another. Give each loop a unique variable name as its counter. The following construction is correct:

For I = 1 To 10

For J = 1 To 10

For K = 1 To 10

...

Next K

Next J

Next I

|  |
| --- |
| **NoteNote** |
| If you omit counter in a **Next** statement, execution continues as if counter is included. If a **Next** statement is encountered before its corresponding **For** statement, an error occurs. |

## Example

This example uses the **For...Next** statement to create a string that contains 10 instances of the numbers 0 through 9, each string separated from the other by a single space. The outer loop uses a loop counter variable that is decremented each time through the loop.

Dim Words, Chars, MyString

For Words = 10 To 1 Step -1 ' Set up 10 repetitions.

For Chars = 0 To 9 ' Set up 10 repetitions.

MyString = MyString & Chars ' Append number to string.

Next Chars ' Increment counter

MyString = MyString & " " ' Append a space.

Next Words

# For Each...Next Statement

**Office 2013 and later**

|  |  |
| --- | --- |
|  |  |

Repeats a group of [statements](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) for each element in an [array](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) or [collection](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx).

**Syntax**

**For Each** element **In** group   
[statements]  
[**Exit For**]  
[statements]

**Next** [element]

The **For...Each...Next** statement syntax has these parts:

|  |  |
| --- | --- |
| **Part** | **Description** |
| element | Required. [Variable](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) used to iterate through the elements of the collection or array. For collections, element can only be a [Variant](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx) variable, a generic object variable, or any specific object variable. For arrays, element can only be a **Variant** variable. |
| group | Required. Name of an object collection or array (except an array of [user-defined types](https://msdn.microsoft.com/en-us/library/office/gg264568.aspx)). |
| statements | Optional. One or more statements that are executed on each item in group. |

**Remarks**

The **For…Each** block is entered if there is at least one element in group. Once the loop has been entered, all the statements in the loop are executed for the first element in group. If there are more elements in group, the statements in the loop continue to execute for each element. When there are no more elements in group, the loop is exited and execution continues with the statement following the **Next** statement.

Any number of **Exit For** statements may be placed anywhere in the loop as an alternative way to exit. **Exit For** is often used after evaluating some condition, for example **If…Then**, and transfers control to the statement immediately following **Next**.

You can nest **For...Each...Next** loops by placing one **For…Each…Next** loop within another. However, each loop element must be unique.

|  |
| --- |
| **NoteNote** |
| If you omit element in a **Next** statement, execution continues as if element is included. If a **Next** statement is encountered before its corresponding **For** statement, an error occurs. |

You can't use the **For...Each...Next** statement with an array of user-defined types because a **Variant** can't contain a user-defined type.

## Example

This example uses the **For Each...Next** statement to search the **Text** property of all elements in a collection for the existence of the string "Hello". In the example, MyObject is a text-related object and is an element of the collection MyCollection. Both are generic names used for illustration purposes only.

Dim Found, MyObject, MyCollection

Found = False ' Initialize variable.

For Each MyObject In MyCollection ' Iterate through each element.

If MyObject.Text = "Hello" Then ' If Text equals "Hello".

Found = True ' Set Found to True.

Exit For ' Exit loop.

End If

Next

Specialization

# Arrays Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Verify an array. | [IsArray](https://msdn.microsoft.com/en-us/library/office/gg264552.aspx) |
| Create an array. | [Array](https://msdn.microsoft.com/en-us/library/office/gg264844.aspx) |
| Change default lower limit. | [Option Base](https://msdn.microsoft.com/en-us/library/office/gg251511.aspx) |
| Declare and initialize an array. | [Dim](https://msdn.microsoft.com/en-us/library/office/gg251750.aspx), [Private](https://msdn.microsoft.com/en-us/library/office/gg278839.aspx), [Public](https://msdn.microsoft.com/en-us/library/office/gg264680.aspx), [ReDim](https://msdn.microsoft.com/en-us/library/office/gg251578.aspx), [Static](https://msdn.microsoft.com/en-us/library/office/gg251620.aspx) |
| Find the limits of an array. | [LBound](https://msdn.microsoft.com/en-us/library/office/gg264295.aspx), [UBound](https://msdn.microsoft.com/en-us/library/office/gg278658.aspx) |
| Reinitialize an array. | [Erase](https://msdn.microsoft.com/en-us/library/office/gg264507.aspx), [ReDim](https://msdn.microsoft.com/en-us/library/office/gg251578.aspx) |

# Errors Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Generate run-time errors. | [Clear](https://msdn.microsoft.com/en-us/library/office/gg278680.aspx), [Error](https://msdn.microsoft.com/en-us/library/office/gg264544.aspx), [Raise](https://msdn.microsoft.com/en-us/library/office/gg278543.aspx) |
| Get error messages. | [Error](https://msdn.microsoft.com/en-us/library/office/gg278811.aspx) |
| Provide error information. | [Err](https://msdn.microsoft.com/en-us/library/office/gg251525.aspx) |
| Return **Error** variant. | [CVErr](https://msdn.microsoft.com/en-us/library/office/gg251526.aspx) |
| Trap errors during run time. | [On Error](https://msdn.microsoft.com/en-us/library/office/gg251688.aspx), [Resume](https://msdn.microsoft.com/en-us/library/office/gg251630.aspx) |
| Type verification. | [IsError](https://msdn.microsoft.com/en-us/library/office/gg278547.aspx) |

# Directories and Files Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Change directory or folder. | [ChDir](https://msdn.microsoft.com/en-us/library/office/gg264410.aspx) |
| Change the drive. | [ChDrive](https://msdn.microsoft.com/en-us/library/office/gg264509.aspx) |
| Copy a file. | [FileCopy](https://msdn.microsoft.com/en-us/library/office/gg264390.aspx) |
| Make directory or folder. | [MkDir](https://msdn.microsoft.com/en-us/library/office/gg264553.aspx) |
| Remove directory or folder. | [RmDir](https://msdn.microsoft.com/en-us/library/office/gg278523.aspx) |
| Rename a file, directory, or folder. | [Name](https://msdn.microsoft.com/en-us/library/office/gg264639.aspx) |
| Return current path. | [CurDir](https://msdn.microsoft.com/en-us/library/office/gg251649.aspx) |
| Return file date/time stamp. | [FileDateTime](https://msdn.microsoft.com/en-us/library/office/gg264782.aspx) |
| Return file, directory, label attributes. | [GetAttr](https://msdn.microsoft.com/en-us/library/office/gg278751.aspx) |
| Return file length. | [FileLen](https://msdn.microsoft.com/en-us/library/office/gg278429.aspx) |
| Return file name or volume label. | [Dir](https://msdn.microsoft.com/en-us/library/office/gg278779.aspx) |
| Set attribute information for a file. | [SetAttr](https://msdn.microsoft.com/en-us/library/office/gg264831.aspx) |

# Input and Output Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Access or create a file. | [Open](https://msdn.microsoft.com/en-us/library/office/gg264163.aspx) |
| Close files. | [Close](https://msdn.microsoft.com/en-us/library/office/gg264418.aspx), [Reset](https://msdn.microsoft.com/en-us/library/office/gg278556.aspx) |
| Control output appearance. | [Format](https://msdn.microsoft.com/en-us/library/office/gg251755.aspx), [Print](https://msdn.microsoft.com/en-us/library/office/gg264286.aspx), [Print #](https://msdn.microsoft.com/en-us/library/office/gg264278.aspx), [Spc](https://msdn.microsoft.com/en-us/library/office/gg264453.aspx), [Tab](https://msdn.microsoft.com/en-us/library/office/gg251692.aspx), [Width #](https://msdn.microsoft.com/en-us/library/office/gg251735.aspx) |
| Copy a file. | [FileCopy](https://msdn.microsoft.com/en-us/library/office/gg264390.aspx) |
| Get information about a file. | [EOF](https://msdn.microsoft.com/en-us/library/office/gg251636.aspx), [FileAttr](https://msdn.microsoft.com/en-us/library/office/gg264168.aspx), [FileDateTime](https://msdn.microsoft.com/en-us/library/office/gg264782.aspx), [FileLen](https://msdn.microsoft.com/en-us/library/office/gg278429.aspx), [FreeFile](https://msdn.microsoft.com/en-us/library/office/gg264526.aspx), [GetAttr](https://msdn.microsoft.com/en-us/library/office/gg278751.aspx), [Loc](https://msdn.microsoft.com/en-us/library/office/gg278759.aspx), [LOF](https://msdn.microsoft.com/en-us/library/office/gg251466.aspx), [Seek](https://msdn.microsoft.com/en-us/library/office/gg278614.aspx) |
| Manage files. | [Dir](https://msdn.microsoft.com/en-us/library/office/gg278779.aspx), [Kill](https://msdn.microsoft.com/en-us/library/office/gg264141.aspx), [Lock](https://msdn.microsoft.com/en-us/library/office/gg278593.aspx), [Unlock](https://msdn.microsoft.com/en-us/library/office/gg278593.aspx), [Name](https://msdn.microsoft.com/en-us/library/office/gg264639.aspx) |
| Read from a file. | [Get](https://msdn.microsoft.com/en-us/library/office/gg278468.aspx), [Input](https://msdn.microsoft.com/en-us/library/office/gg251539.aspx), [Input #](https://msdn.microsoft.com/en-us/library/office/gg264519.aspx), [Line Input #](https://msdn.microsoft.com/en-us/library/office/gg264130.aspx) |
| Return length of a file. | [FileLen](https://msdn.microsoft.com/en-us/library/office/gg278429.aspx) |
| Set or get file attributes. | [FileAttr](https://msdn.microsoft.com/en-us/library/office/gg264168.aspx), [GetAttr](https://msdn.microsoft.com/en-us/library/office/gg278751.aspx), [SetAttr](https://msdn.microsoft.com/en-us/library/office/gg264831.aspx) |
| Set read-write position in a file. | [Seek](https://msdn.microsoft.com/en-us/library/office/gg251328.aspx) |
| Write to a file. | [Print #](https://msdn.microsoft.com/en-us/library/office/gg264278.aspx), [Put](https://msdn.microsoft.com/en-us/library/office/gg251802.aspx), [Write #](https://msdn.microsoft.com/en-us/library/office/gg264524.aspx) |

# Math Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Derive trigonometric functions. | [Atn](https://msdn.microsoft.com/en-us/library/office/gg264473.aspx), [Cos](https://msdn.microsoft.com/en-us/library/office/gg264404.aspx), [Sin](https://msdn.microsoft.com/en-us/library/office/gg278707.aspx), [Tan](https://msdn.microsoft.com/en-us/library/office/gg264342.aspx) |
| General calculations. | [Exp](https://msdn.microsoft.com/en-us/library/office/gg264729.aspx), [Log](https://msdn.microsoft.com/en-us/library/office/gg251336.aspx), [Sqr](https://msdn.microsoft.com/en-us/library/office/gg264733.aspx) |
| Generate random numbers. | [Randomize](https://msdn.microsoft.com/en-us/library/office/gg264511.aspx), [Rnd](https://msdn.microsoft.com/en-us/library/office/gg251628.aspx) |
| Get absolute value. | [Abs](https://msdn.microsoft.com/en-us/library/office/gg264518.aspx) |
| Get the sign of an expression. | [Sgn](https://msdn.microsoft.com/en-us/library/office/gg264389.aspx) |
| Perform numeric conversions. | [Fix](https://msdn.microsoft.com/en-us/library/office/gg264147.aspx), [Int](https://msdn.microsoft.com/en-us/library/office/gg264147.aspx) |

# Financial Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Calculate depreciation. | [DDB](https://msdn.microsoft.com/en-us/library/office/gg278755.aspx), [SLN](https://msdn.microsoft.com/en-us/library/office/gg278770.aspx), [SYD](https://msdn.microsoft.com/en-us/library/office/gg264427.aspx) |
| Calculate future value. | [FV](https://msdn.microsoft.com/en-us/library/office/gg264399.aspx) |
| Calculate interest rate. | [Rate](https://msdn.microsoft.com/en-us/library/office/gg278868.aspx) |
| Calculate internal rate of return. | [IRR](https://msdn.microsoft.com/en-us/library/office/gg264306.aspx), [MIRR](https://msdn.microsoft.com/en-us/library/office/gg278715.aspx) |
| Calculate number of periods. | [NPer](https://msdn.microsoft.com/en-us/library/office/gg264649.aspx) |
| Calculate payments. | [IPmt](https://msdn.microsoft.com/en-us/library/office/gg278796.aspx), [Pmt](https://msdn.microsoft.com/en-us/library/office/gg264126.aspx), [PPmt](https://msdn.microsoft.com/en-us/library/office/gg264698.aspx) |
| Calculate present value. | [NPV](https://msdn.microsoft.com/en-us/library/office/gg264398.aspx), [PV](https://msdn.microsoft.com/en-us/library/office/gg264510.aspx) |

Advanced

# Collection Object Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Create a **Collection** object. | [Collection](https://msdn.microsoft.com/en-us/library/office/gg251465.aspx) |
| Add an object to a collection. | [Add](https://msdn.microsoft.com/en-us/library/office/gg264685.aspx) |
| Remove an object from a collection. | [Remove](https://msdn.microsoft.com/en-us/library/office/gg264484.aspx) |
| Reference an item in a collection. | [Item](https://msdn.microsoft.com/en-us/library/office/gg251758.aspx) |

© 2016 Microsoft

# Compiler Directive Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Define compiler constant. | [#Const](https://msdn.microsoft.com/en-us/library/office/gg264655.aspx) |
| Compile selected blocks of code. | [#If...Then...#Else](https://msdn.microsoft.com/en-us/library/office/gg264731.aspx) |

# Registry Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Delete program settings. | [DeleteSetting](https://msdn.microsoft.com/en-us/library/office/gg278763.aspx) |
| Read program settings. | [GetSetting](https://msdn.microsoft.com/en-us/library/office/gg278430.aspx), [GetAllSettings](https://msdn.microsoft.com/en-us/library/office/gg278860.aspx) |
| Save program settings. | [SaveSetting](https://msdn.microsoft.com/en-us/library/office/gg278814.aspx) |

# Miscellaneous Keyword Summary

|  |  |
| --- | --- |
| **Action** | **Keywords** |
| Process pending events. | [DoEvents](https://msdn.microsoft.com/en-us/library/office/gg264522.aspx) |
| Run other programs. | [AppActivate](https://msdn.microsoft.com/en-us/library/office/gg278643.aspx), [Shell](https://msdn.microsoft.com/en-us/library/office/gg278437.aspx) |
| Send keystrokes to an application. | [SendKeys](https://msdn.microsoft.com/en-us/library/office/gg278655.aspx) |
| Sound a beep from computer. | [Beep](https://msdn.microsoft.com/en-us/library/office/gg251699.aspx) |
| System. | [Environ](https://msdn.microsoft.com/en-us/library/office/gg264486.aspx) |
| Provide a command-line string. | [Command](https://msdn.microsoft.com/en-us/library/office/gg264109.aspx) |
| Automation. | [CreateObject](https://msdn.microsoft.com/en-us/library/office/gg264813.aspx), [GetObject](https://msdn.microsoft.com/en-us/library/office/gg251785.aspx) |
| Color. | [QBColor](https://msdn.microsoft.com/en-us/library/office/gg278871.aspx), [RGB](https://msdn.microsoft.com/en-us/library/office/gg251682.aspx) |