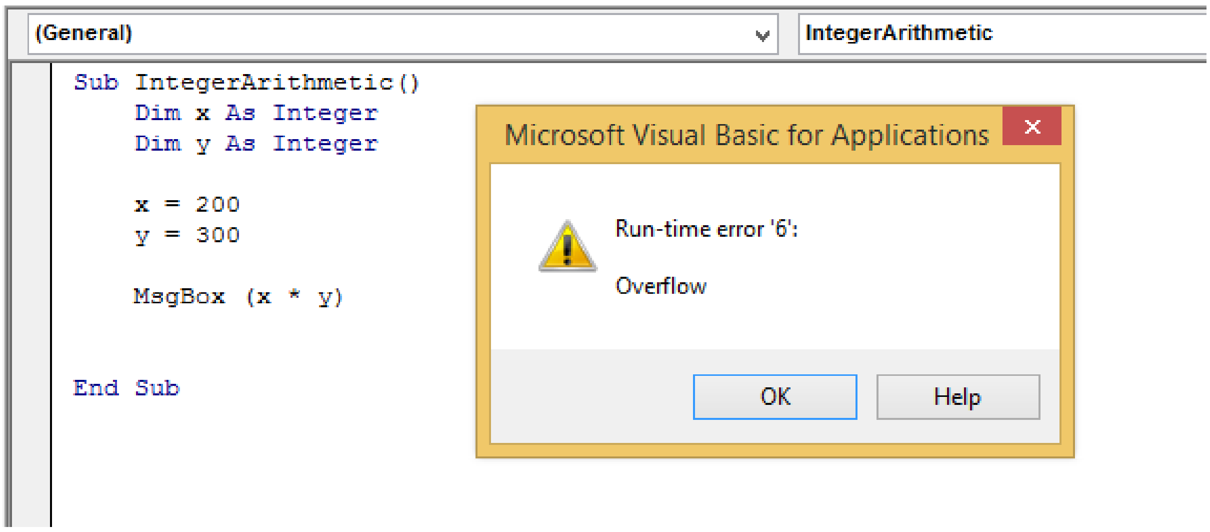
VBA Integer Arithmetic problem

- Run-time error ‘6’: Overflow
- Long Datatype
- CLng Function
- Conversion Functions

VBA implements Integer Arithmetic. This means that if we pass all integer values in to an Arithmetic expression and the result is also a whole number it will be returned as an Integer.

If the resulting value is bigger then the Integer datatype allows VBA will raise an Overflow error.

The following example demonstrates this:



```
Sub IntegerArithmetic()
    Dim x As Integer
    Dim y As Integer

    x = 200
    y = 300

    MsgBox (x * y)


End Sub
```

Microsoft Visual Basic for Applications

Run-time error '6':

Overflow

200 x 300 = 60000

As both x and y are defined as Integer datatype the result is returned as an Integer. The maximum value for the Integer datatype is 32,767.

This, therefore, causes an Overflow as shown in the error dialog above.

There are a couple of solutions to this.

Firstly we could declare or both of x an y as Long instead as the resulting value would then be returned as a Long, and 60000 is well within the range of values for the Long datatype.

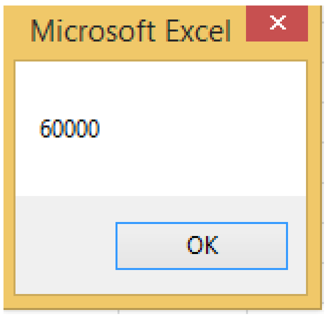
```
Sub IntegerArithmetic2()
    Dim x As Long
    Dim y As Integer

    x = 200
    y = 300

    MsgBox (x * y)

End Sub
```

The macro now runs successfully:



```
60000
```

This method is, however, wasteful of resources as x does not need the capacity of a Long datatype.

The second method is to use the CLng function to convert one of the integer values to a Long.

```
Sub IntegerArithmetic3()
    Dim x As Integer
    Dim y As Integer

    x = 200
    y = 300

    MsgBox (CLng(x) * y)


End Sub
```

VBA Conversion Functions

VBA provides a library of conversion functions that can be used within VBA expressions.

The most common numeric conversion functions are:

- CInt
- CLng
- CSng
- CDbl
- CCur

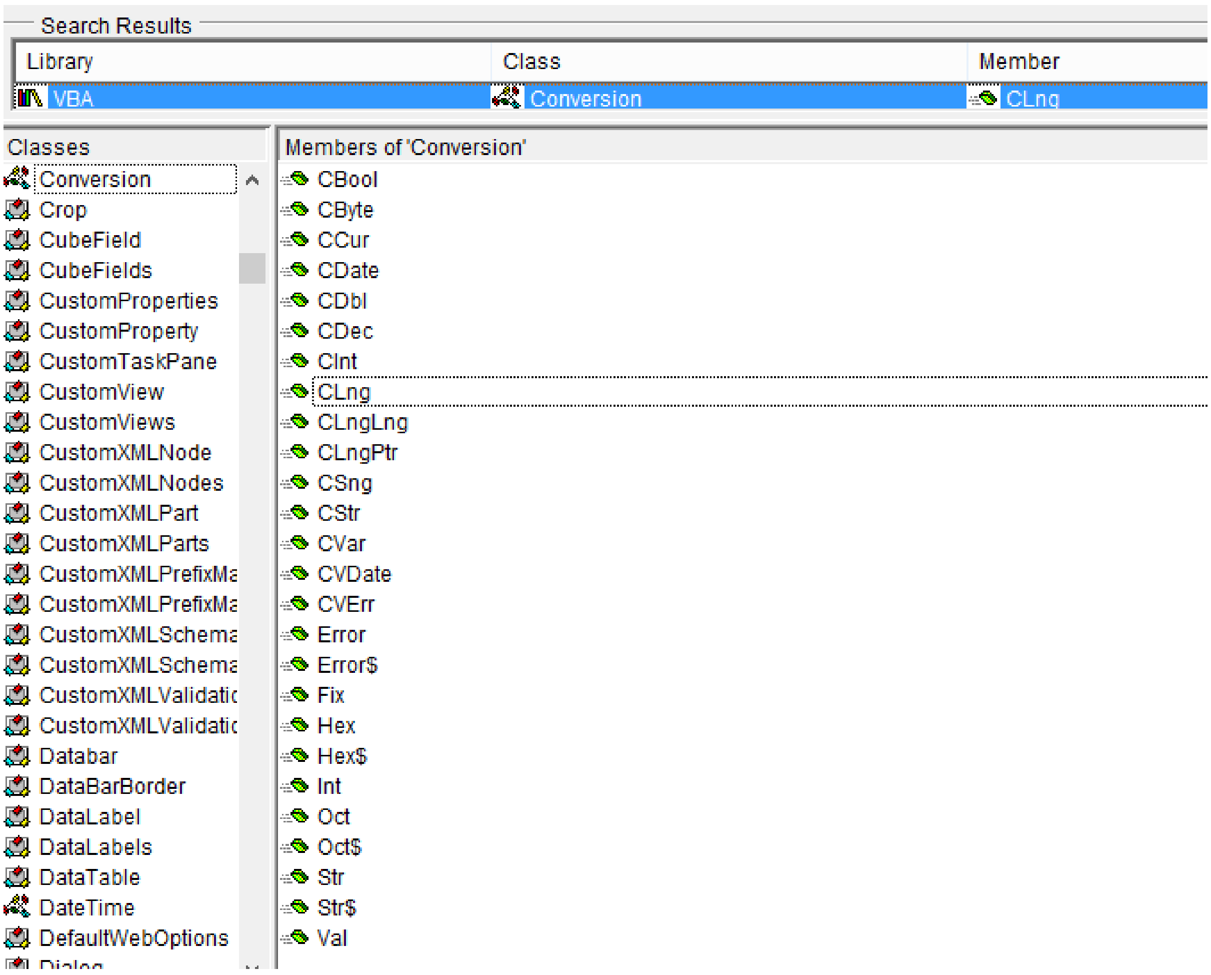
For strings:

- CStr

For dates:

- CDate

The following screen shot shows the Conversion VBA Class methods:



Search Results

Library	Class	Member
VBA	Conversion	CLng

Classes	Members of 'Conversion'
Conversion	CBool
Crop	CByte
CubeField	CCur
CubeFields	CDate
CustomProperties	CDbl
CustomProperty	CDec
CustomTaskPane	CInt
CustomView	CLng
CustomViews	CLngLng
CustomXMLNode	CLngPtr
CustomXMLNodes	CSng
CustomXMLPart	CStr
CustomXMLParts	CVar
CustomXMLPrefixMa	CVDate
CustomXMLPrefixMa	CVErr
CustomXMLSchema	Error
CustomXMLSchema	Error$
CustomXMLValidatic	Fix
CustomXMLValidatic	Hex
Databar	Hex$
DataBarBorder	Int
DataLabel	Oct
DataLabels	Oct$
DataTable	Str
DateTime	Str$
DefaultWebOptions	Val