

Construction of a dll for Excel

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Why would someone want to use a dll with excel? There are many reasons. One of them is that it may be far faster to perform some of the heavy computations within a freebasic dll and communicate that information back to excel.

So let's get starting

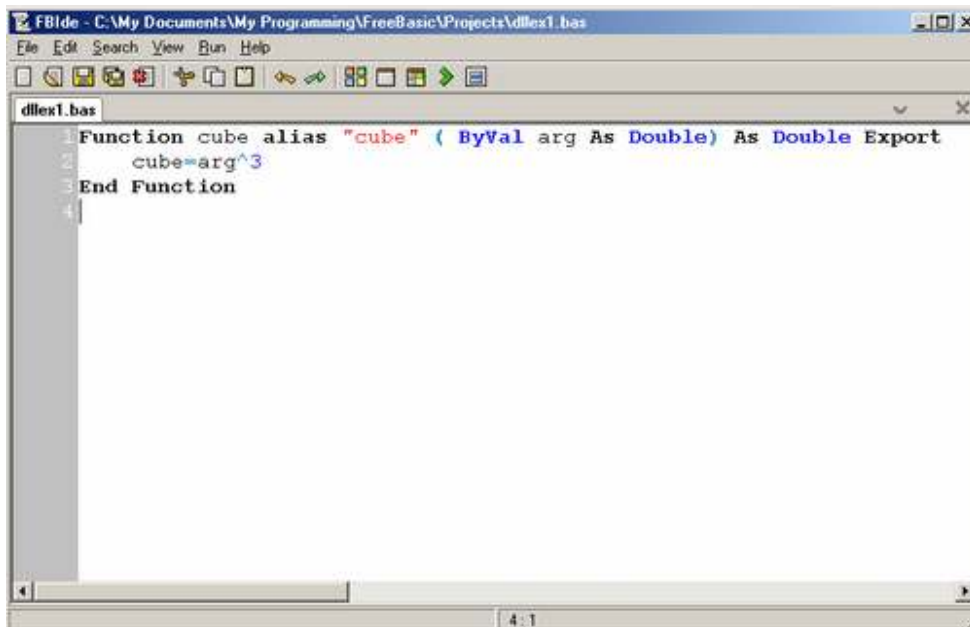
We will need the freebasic compiler. Go here <http://www.freebasic.net/index.php/download> and grab it together with the IDE tool (called fbide) or alternatively download from here <http://fbide.freebasic.net/> the combination of ide + compiler installer file.

1st task

Construct a very simple function inside the dll accessible from excel.

- First open the freebasic ide editor and type the following

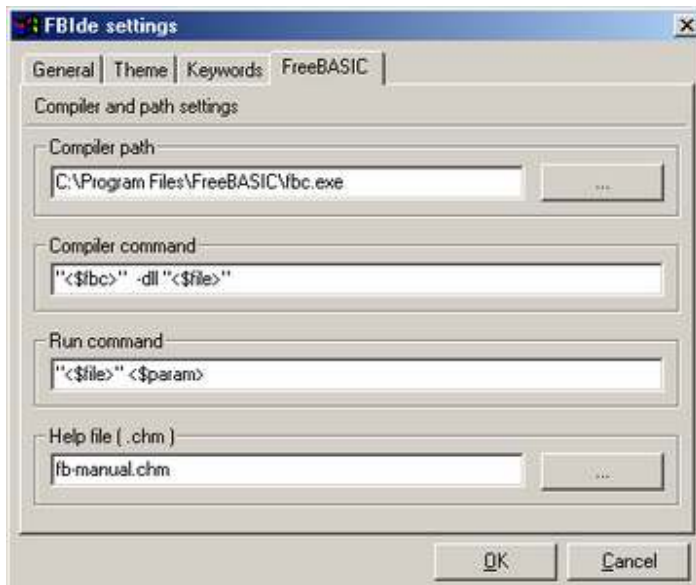
```
Function cube alias "cube" ( ByVal arg As Double) As Double Export
    cube=arg^3
End Function
```



- Second save it as dllex1.bas and compile the code using the settings

<fbc> -dll <filename>

as the compiler's command.



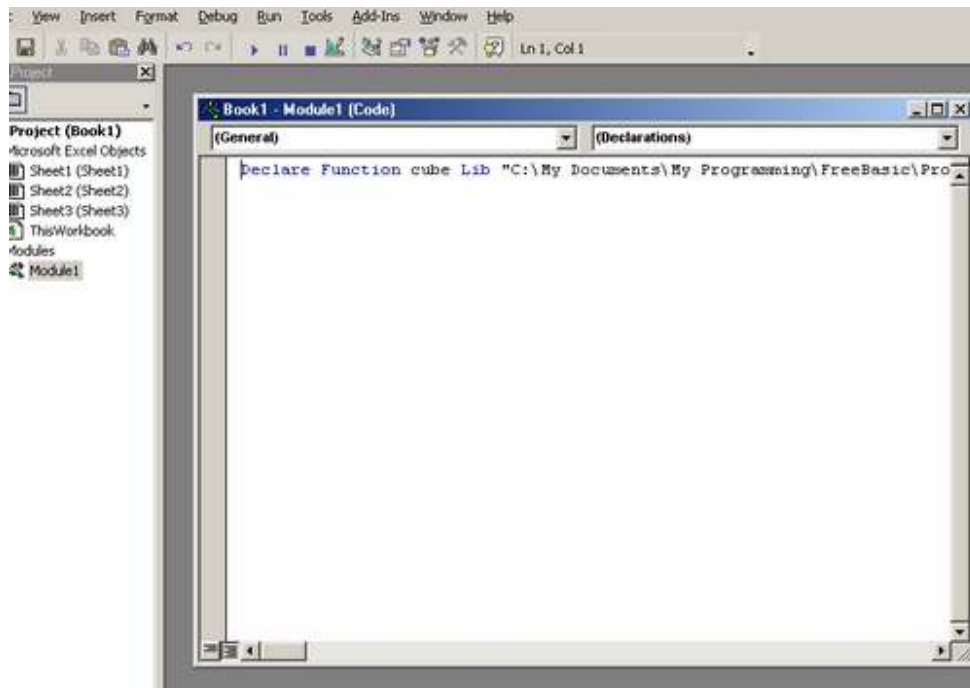
- Third open an excel spreadsheet,

Select from menu **Tools ... Macro ... Visual basic Editor**

In the new window select **Insert ... Module**

Type the following

Declare Function cube Lib "dllib1.dll" Alias "cube@8" (ByVal arg As Double) As Double

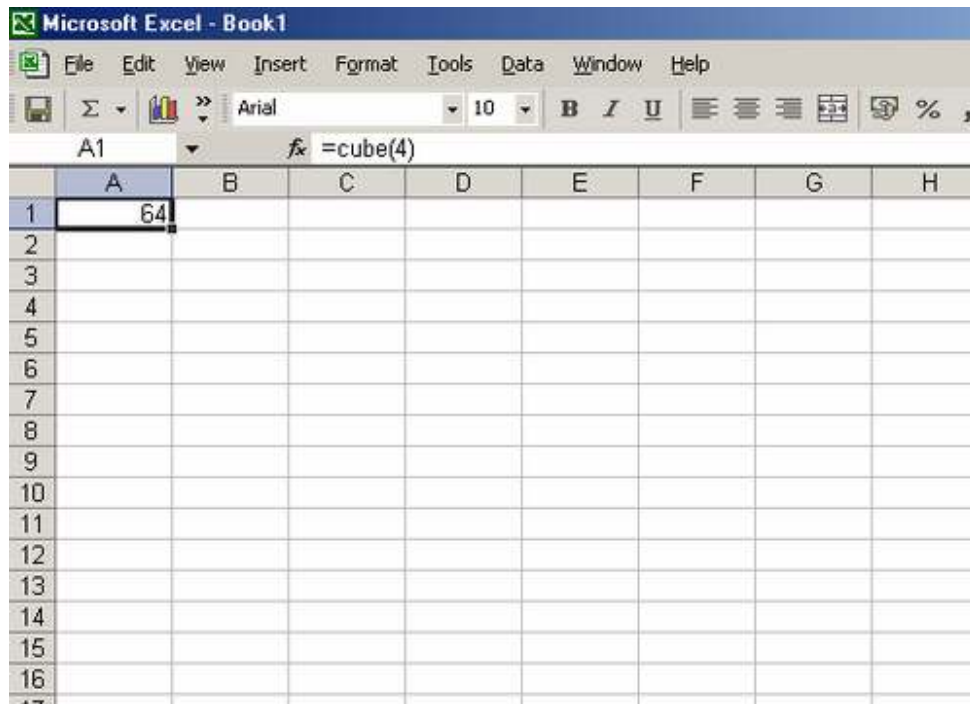


The string "dllex1.dll" must contain the full path of your dll, for example C:\My Documents\FreeBasic\Projects\Excel dll Project\ dllex1.dll

- Type the following into one of the Excel's cells...

= cube(4)

and you will get your answer.



2nd task.

Pass an array to the dll function.

Compile the following code (dllex2.bas) as a dll in the dll compiler.

Function mean Alias "mean" (byval a as double ptr, byval Itter as double) as double
Export

```

Dim i as integer
Dim aa as double
For i=1 to Itter
    aa=aa+a[i]
Next i
mean=aa/Itter

```

End Function

Write the following code in an Excel's vba module...

Declare Function mean Lib "dllex2.dll" Alias "mean@12" (ByRef paramvalue As Double, ByVal paramvalueit As Double) As Double

Function meanfunction()

```

Dim a(1000) As Double
Dim i As Integer
For i = 1 To 1000
    a(i) = Rnd()
Next i

```

```
meanfunction = mean(a(0), 1000)
End Function
```

Again don't forget to include the full path to the dll.

Now by typing in an Excel's cell...

```
=meanfunction()
```

the Excel is sending the address of an array with 1000 random numbers to the dll and the dll is returning with a function the mean of that numbers.

As a next step it is also very easy to set the values of the Excel's array from within the dll. The following dll function can do it...

```
Function setdata Alias "setdata" (byval a as double ptr, byval Itter as double) as double
Export
  Dim i as integer
  For i=1 to Itter
    a[i]=i
  Next i
  setdata=1
End Function
```