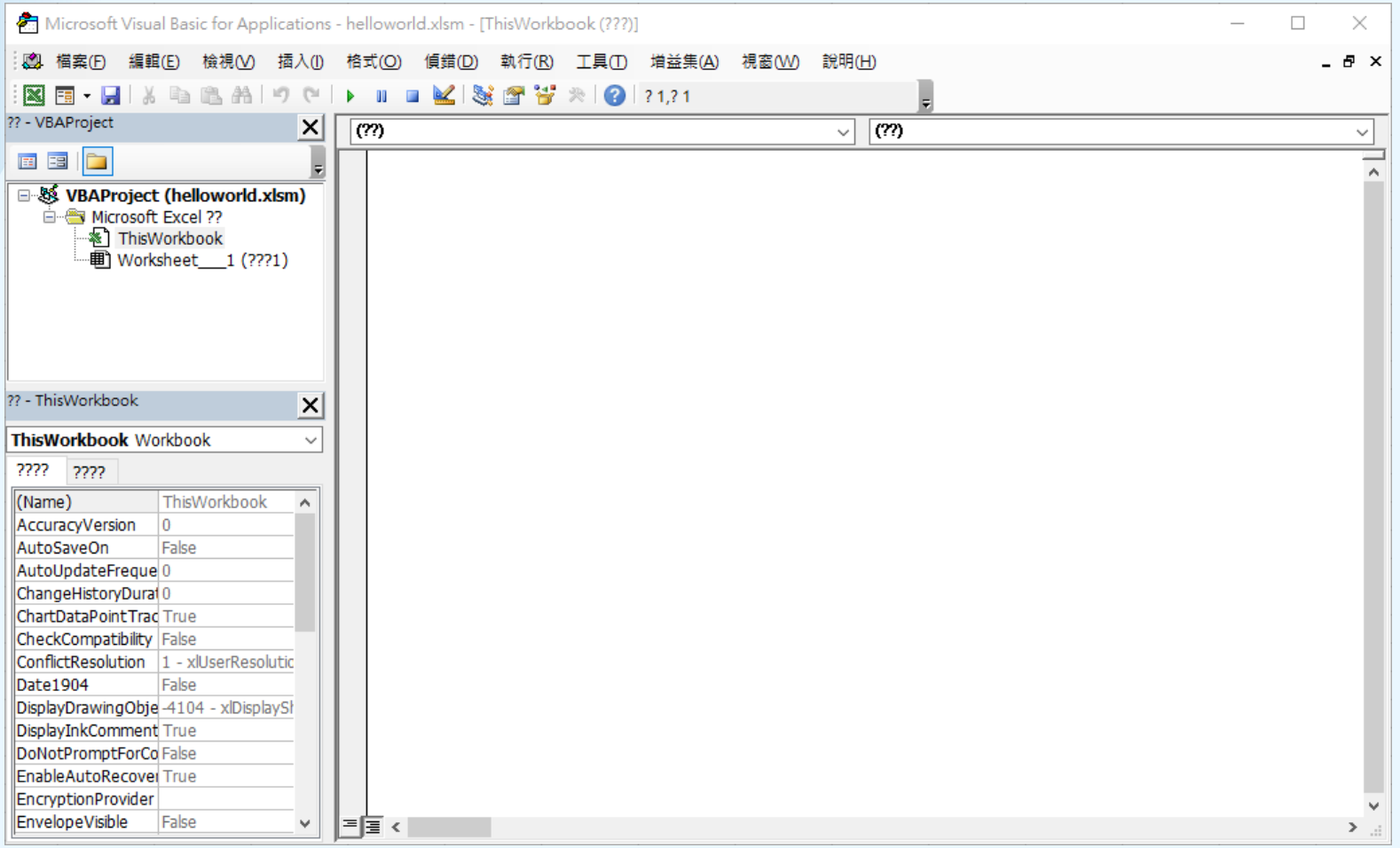
Excel VBA

Excel VBA introduction

https://louiscklaw.github.io/

VBA IDE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VBAProject (helloworld.xlsm)
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Worksheet___1 (???1)
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AutoSaveOn False
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ChangeHistoryDurat 0
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CheckCompatibility False
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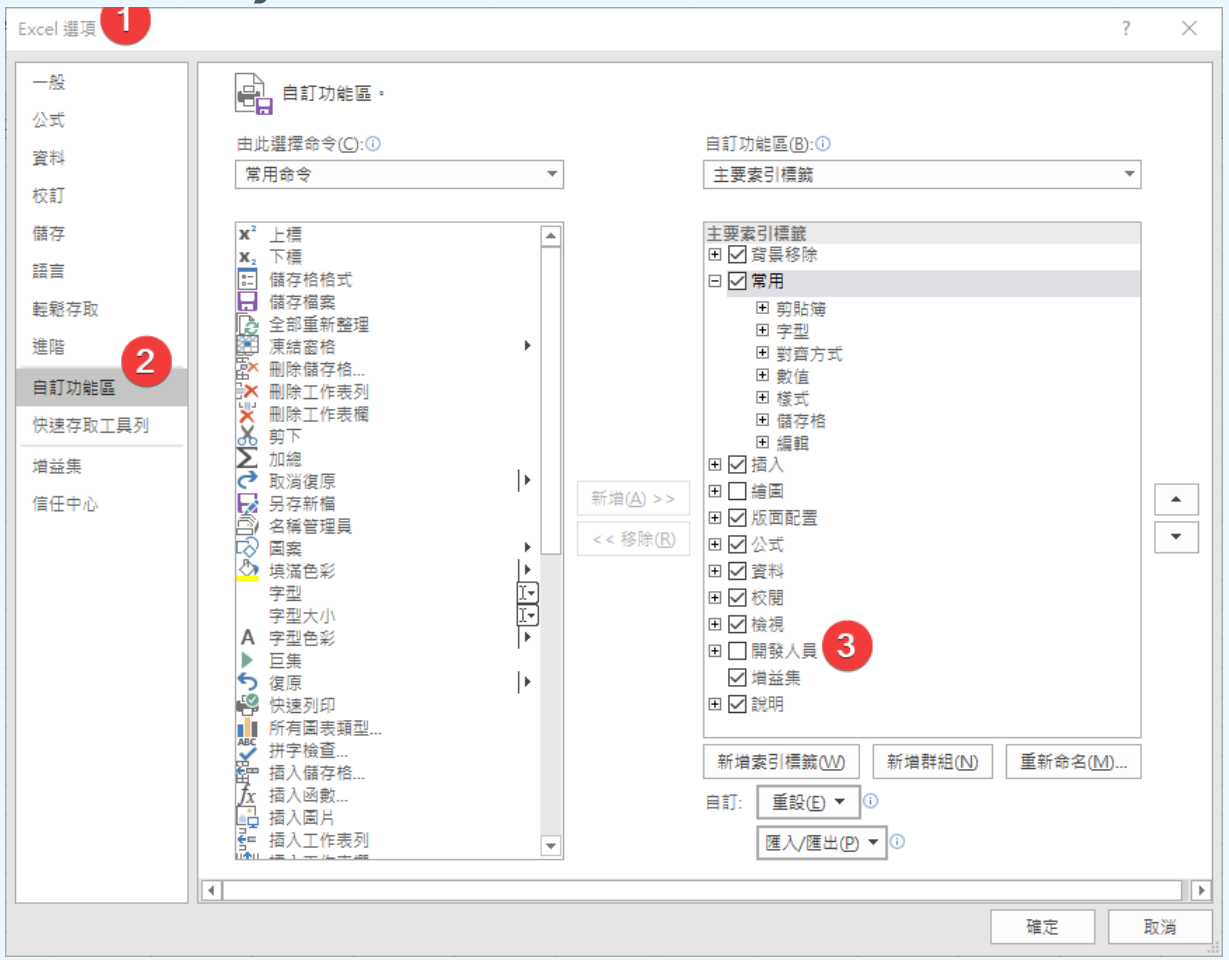
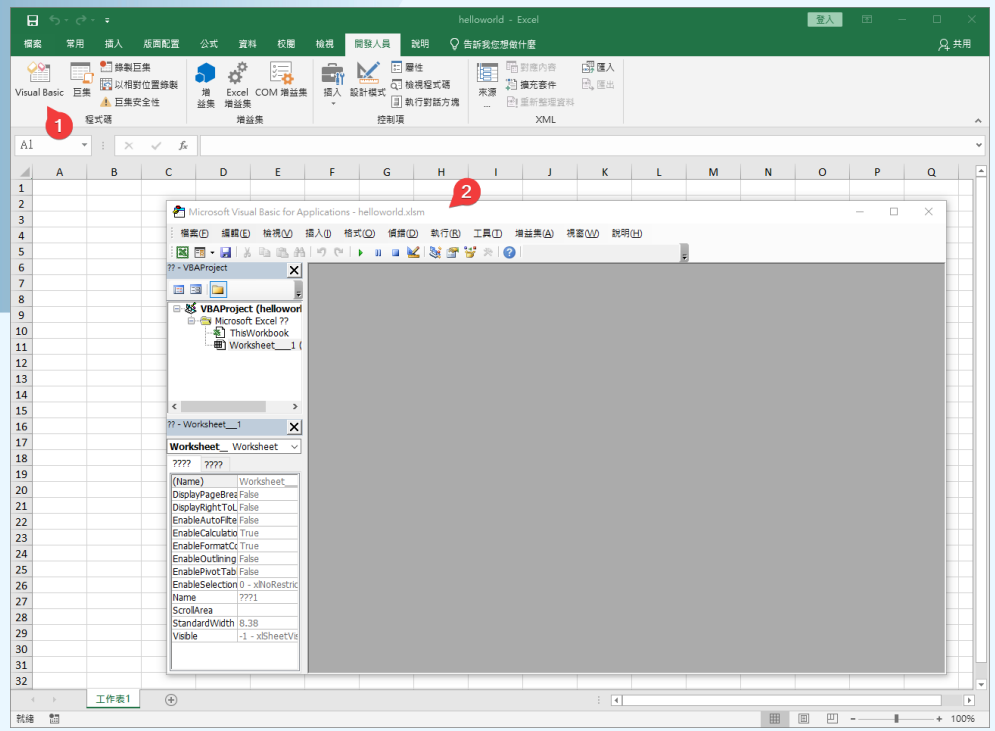
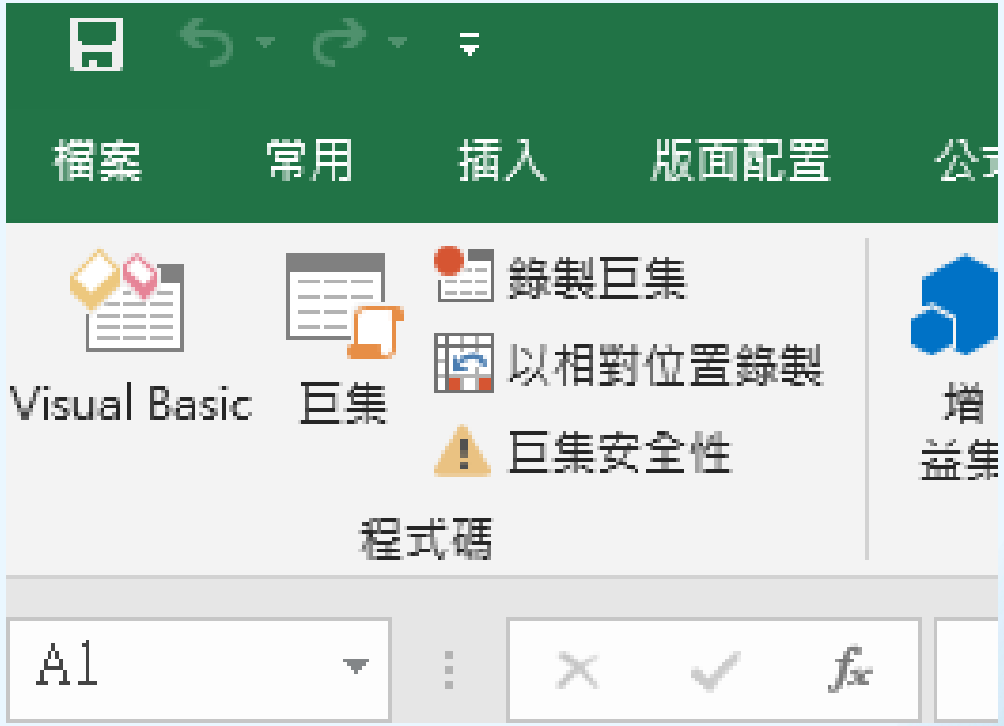
Enable VBA IDE 1/2

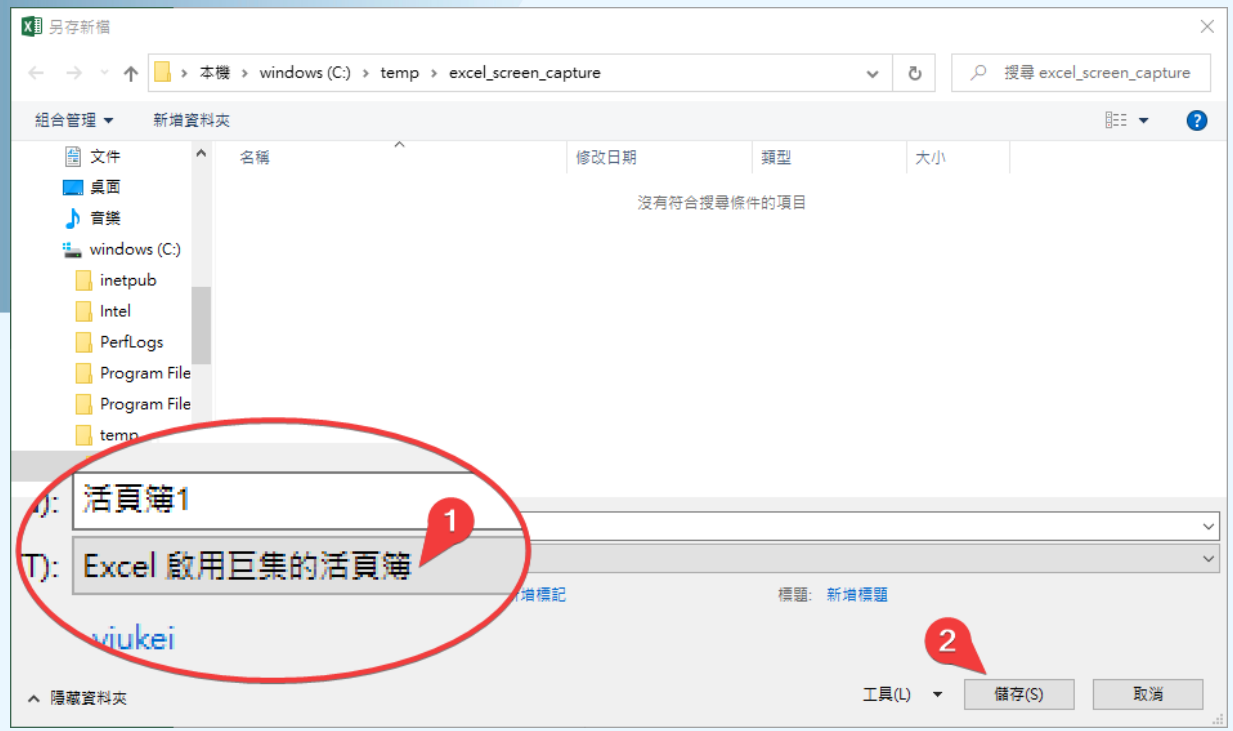


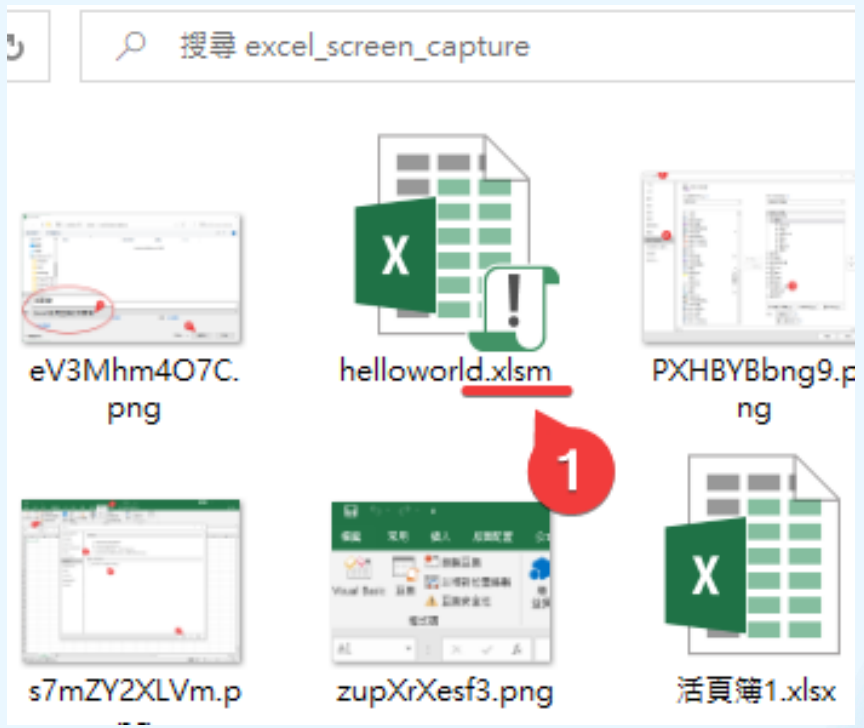
VBA Start IDE



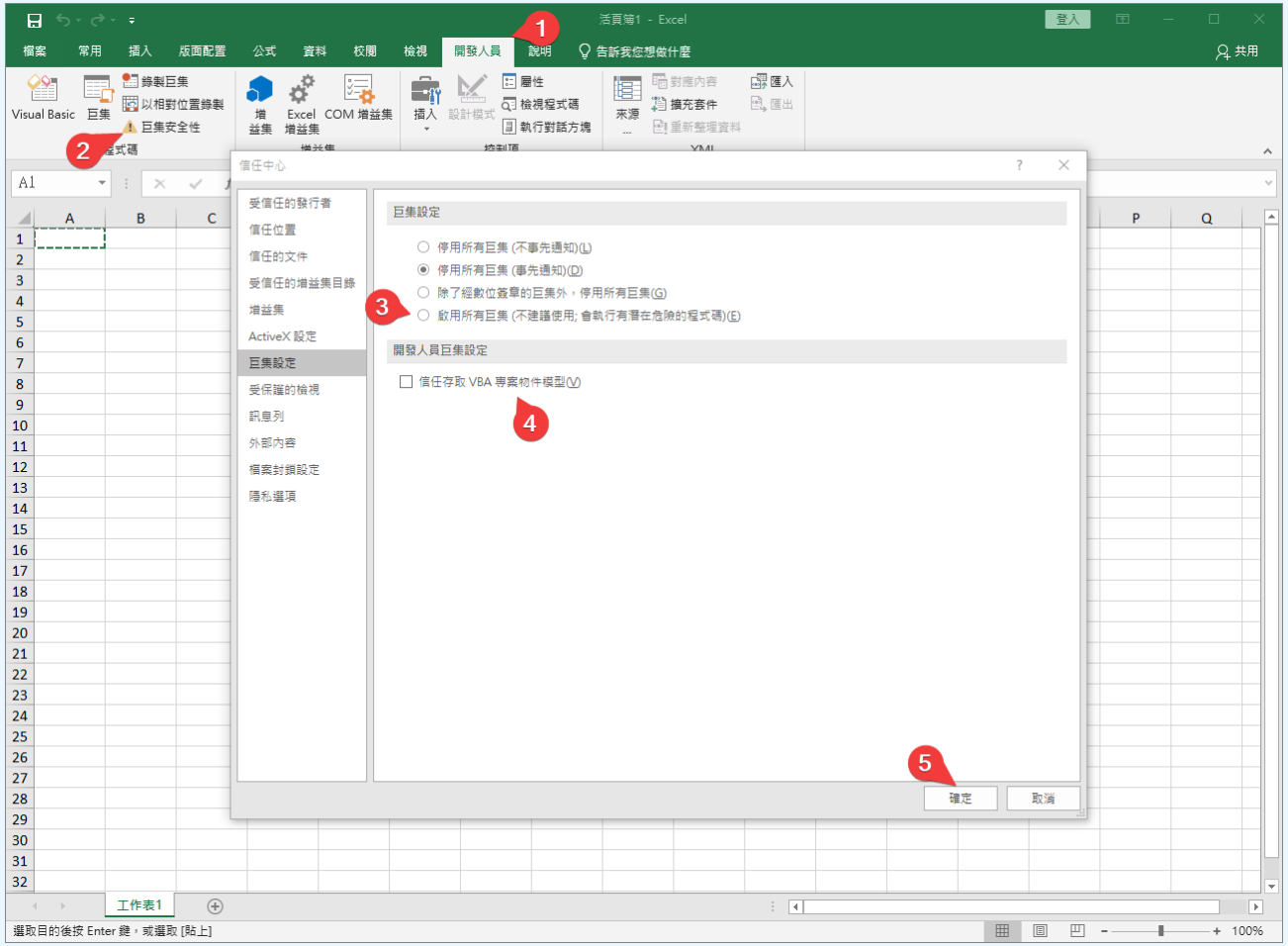


VBA - Save with macro enabled workbook 1/2

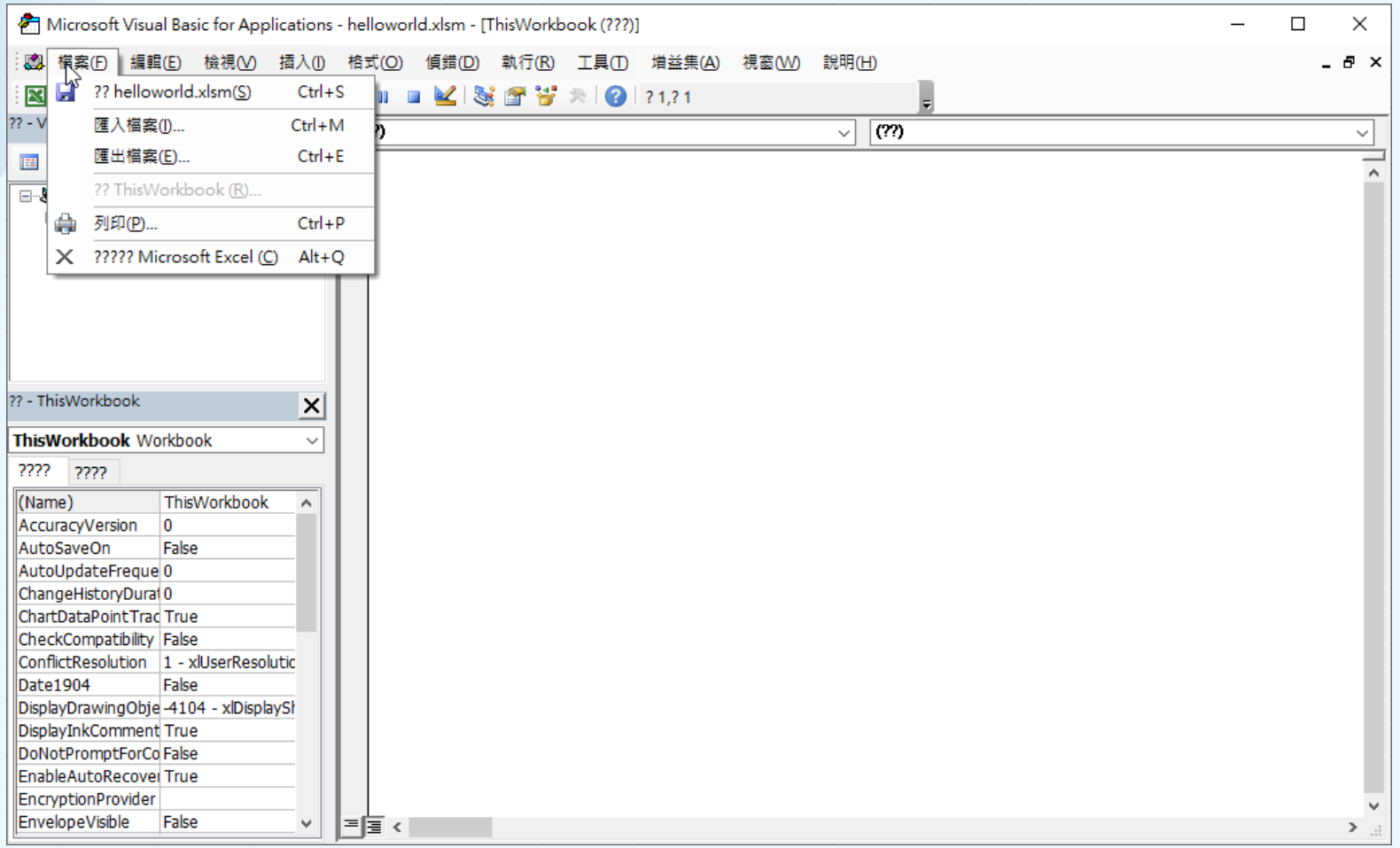




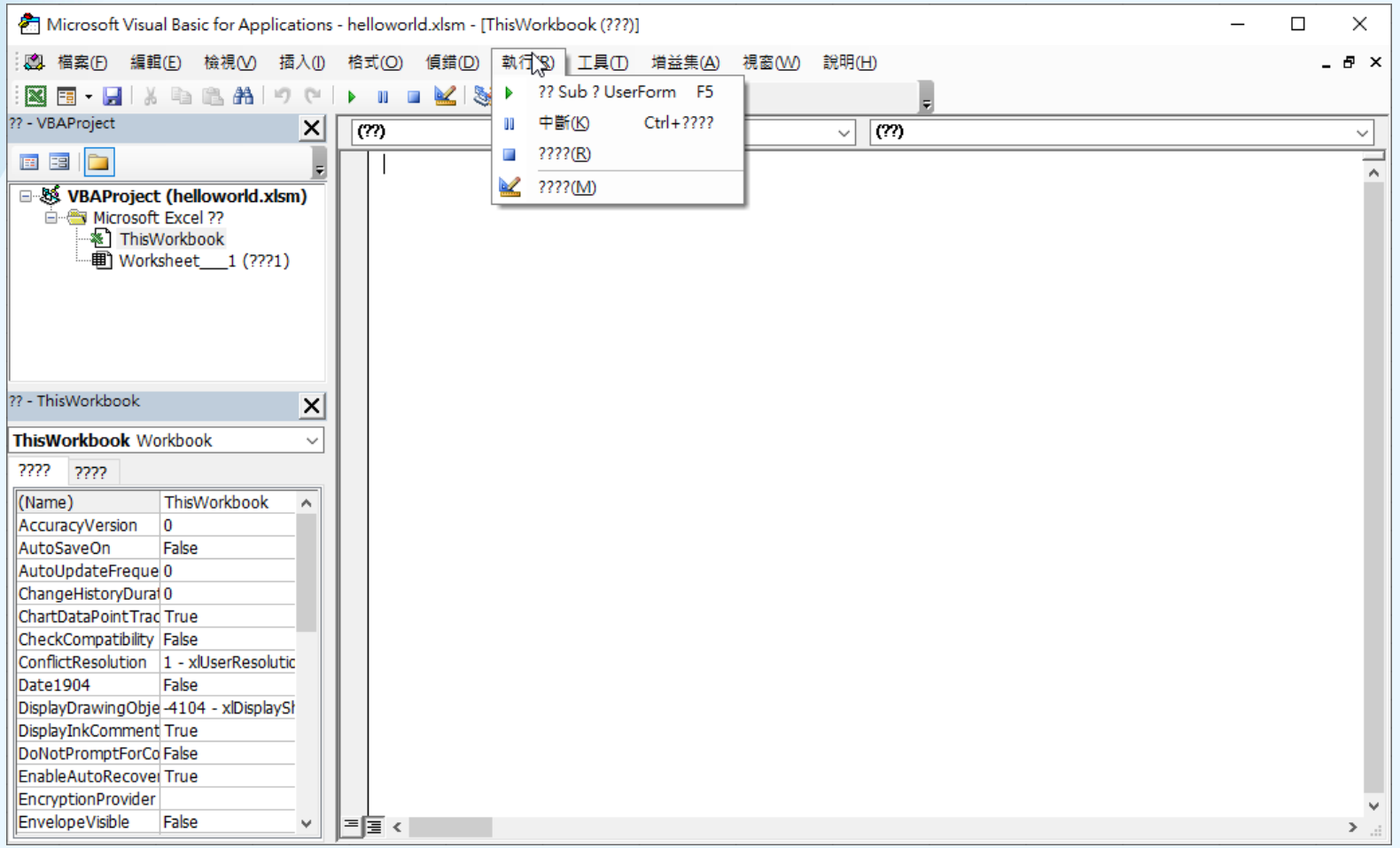
VBA - Save with macro enabled workbook 2/2



VBA - File menu



VBA - Run menu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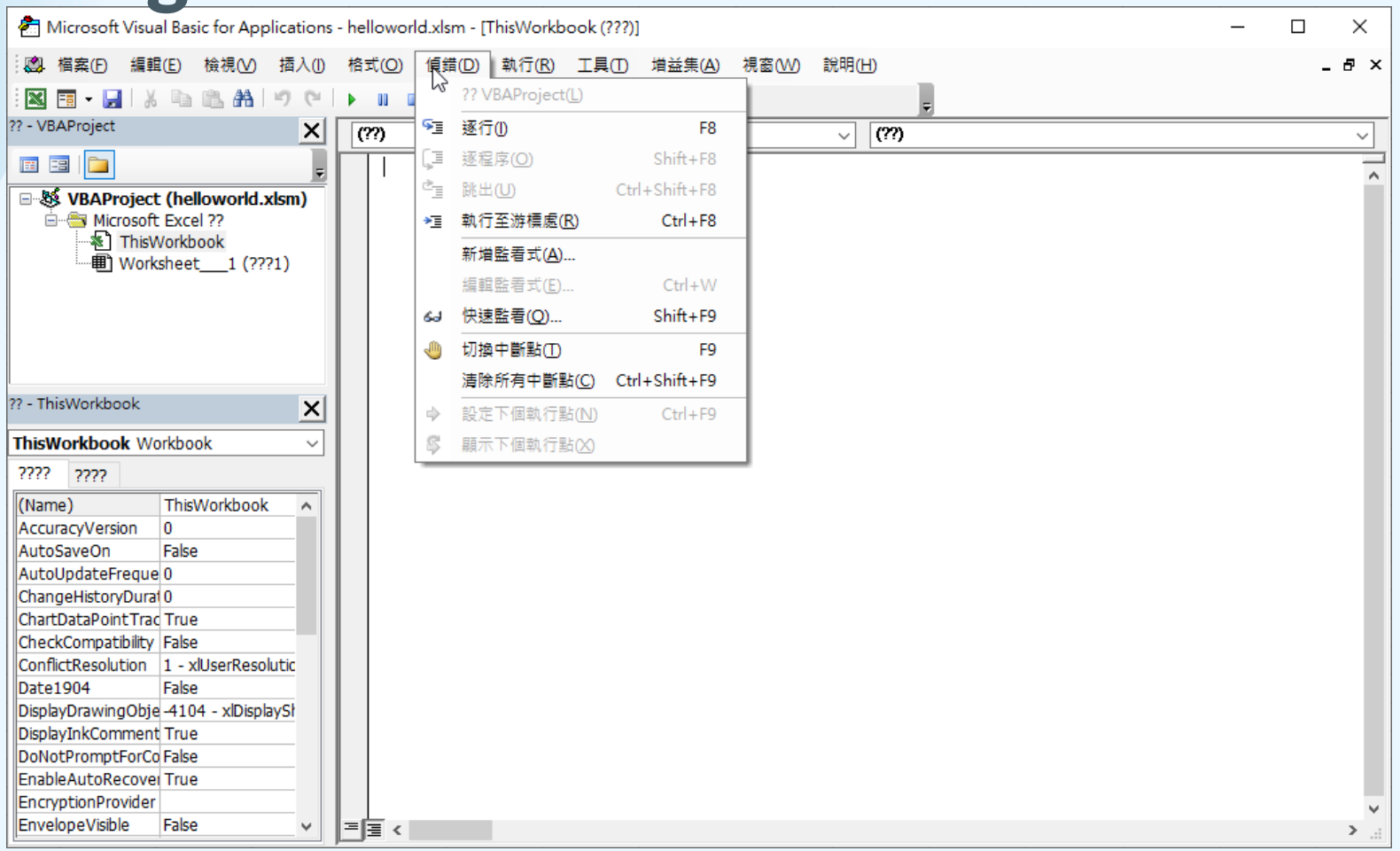
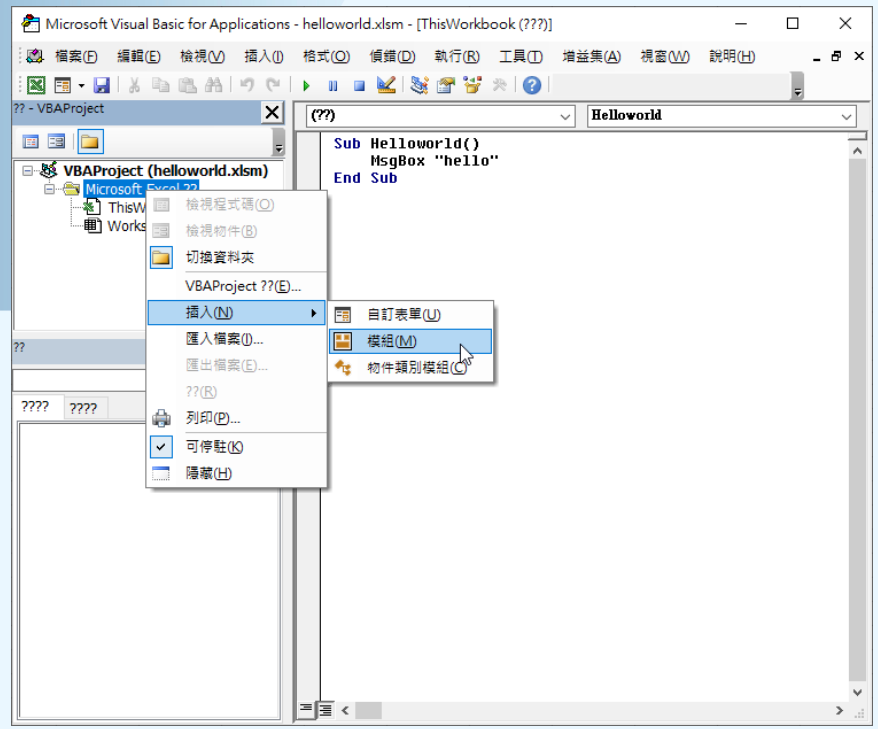
VBA - Debug menu



VBA - Module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隱藏(H)
自訂表單(U)
模組(M)
物件類別模組(C)
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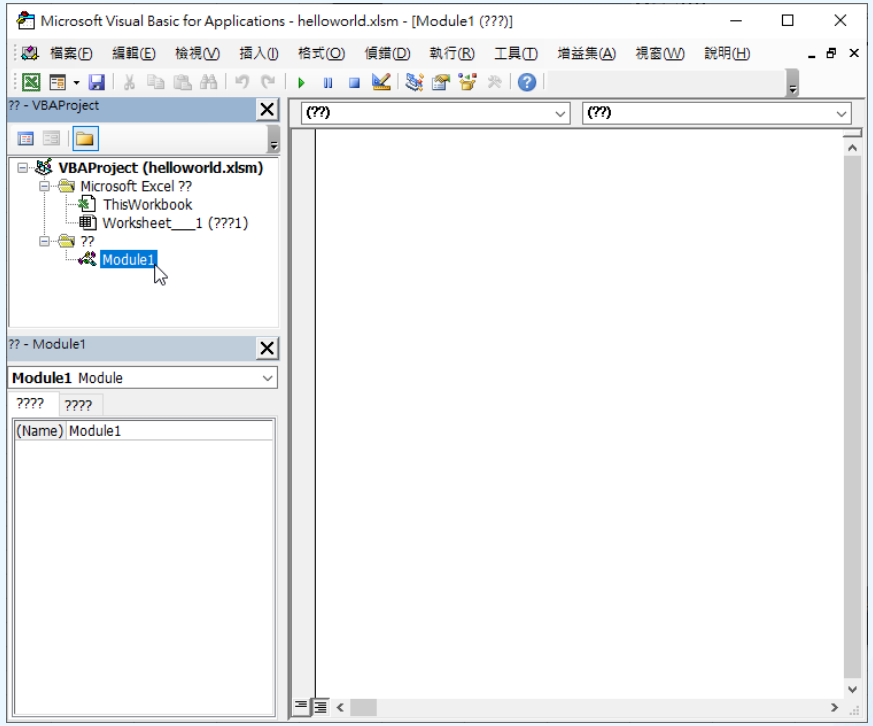
Helloworld
Sub Helloworld()
MsgBox "hello"
End Sub
??
????
????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VBAProject (helloworld.xlsm)
Microsoft Excel ??
ThisWorkbook
Worksheet___1 (???1)
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Module1
?? - Module1
Module1 Module
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VBA looping - For loop 1/2

```
For counter = start To end [Step stepcount]
   [statement 1]
   ....
   [statement n]
   [Exit For]
   [statement 11]
   ....
   [statement n]
Next
```

VBA looping - For loop 2/2

```
Sub ForLoopExample()
    Dim i As Integer

    ' Loop from 1 to 5
    For i = 1 To 5
        ' Print the value of i
        Debug.Print i
    Next i

    ' Loop from 10 to 1 with a step of -1
    For i = 10 To 1 Step -1
        ' Print the value of i
        Debug.Print i
    Next i
End Sub
```

VBA looping - While loop 1/2

```
While condition(s)
    [statements 1]
    [statements 2]
    ...
    [statements n]
Wend
```

VBA looping - While loop 2/2

```
Sub WhileLoopExample()
    Dim i As Integer

    ' Loop while i is less than or equal to 5
    i = 1
    While i <= 5
        ' Print the value of i
        Debug.Print i

        ' Increment i by 1
        i = i + 1
    Wend

    ' Loop while i is greater than 0
    i = 10
    Do While i > 0
        ' Print the value of i
        Debug.Print i

        ' Decrement i by 1
        i = i - 1
    Loop
End Sub
```

VBA - Functions 1/2

```
Function Functionname(parameter-list)
   statement 1
   .......
   statement n
End Function
```

VBA - Functions 2/2

```vba
Function AddNumbers(num1 As Double, num2 As Double) As Double
    ' Add two numbers and return the result
    AddNumbers = num1 + num2
End Function

Sub TestAddNumbers()
    Dim result As Double

    ' Call the AddNumbers function and store the result in the 'result' variable
    result = AddNumbers(5.5, 3.2)

    ' Display the result
    MsgBox "The result is: " & result
End Sub
```

VBA - Subs 1/2

```
Sub Area(x As Double, y As Double)
    MsgBox x * y
End Sub
```

VBA - Subs 2/2

```
Sub GreetUser(name As String)
    ' Display a greeting message with the provided name
    MsgBox "Hello, " & name & "! Welcome to our program."
End Sub

Sub TestGreetUser()
    ' Call the GreetUser subroutine and pass a name
    GreetUser "John"
End Sub
```

VBA - Message Box

```
MsgBox(prompt[,buttons][,title][,helpfile,context])
```

TODO: screen capture of Msgbox

VBA - Constants

```
Const MyInteger As Integer = 42
Const myDate As Date = #2/2/2020#
Const myDay As String = "Sunday"
```

VBA - Variables

```
Dim MyInteger As Integer = 42
Dim myDate As Date = #2/2/2020#
Dim myDay As String = "Sunday"
```

VBA - Arithmatic Operators

let A = 5, B = 10

sign	means/equals
+	A + B will give 15
-	A - B will give -5
*	A * B will give 50
/	B / A will give 2
Mod	B Mod A will give 0
^	B ^ A will give 100000

VBA - Comparison Operators

let A = 5, B = 10

sign	means/equals
=	(A = B) is False.
<>	(A <> B) is True.
>	(A > B) is False.
<	(A < B) is True.
>=	(A >= B) is False.
<=	(A <= B) is True.

VBA - If Statement 1/3

```
If(boolean_expression) Then
   Statement 1
   .....
   .....
   Statement n
End If
```

VBA - If Elseif - Else statement 2/3

```
If(boolean_expression) Then
   Statement 1
   .....
   Statement n
ElseIf (boolean_expression) Then
   Statement 1
   .....
   Statement n
ElseIf (boolean_expression) Then
   Statement 1
   .....
   Statement n
Else
   Statement 1
   .....
   Statement n
End If
```

VBA - If statement example 3/3

```
Sub CheckNumber(number As Integer)
    ' Check if the number is greater than 10
    If number > 10 Then
        ' Display a message if the condition is true
        MsgBox "The number is greater than 10."
    Else
        ' Display a message if the condition is false
        MsgBox "The number is not greater than 10."
    End If
End Sub
```

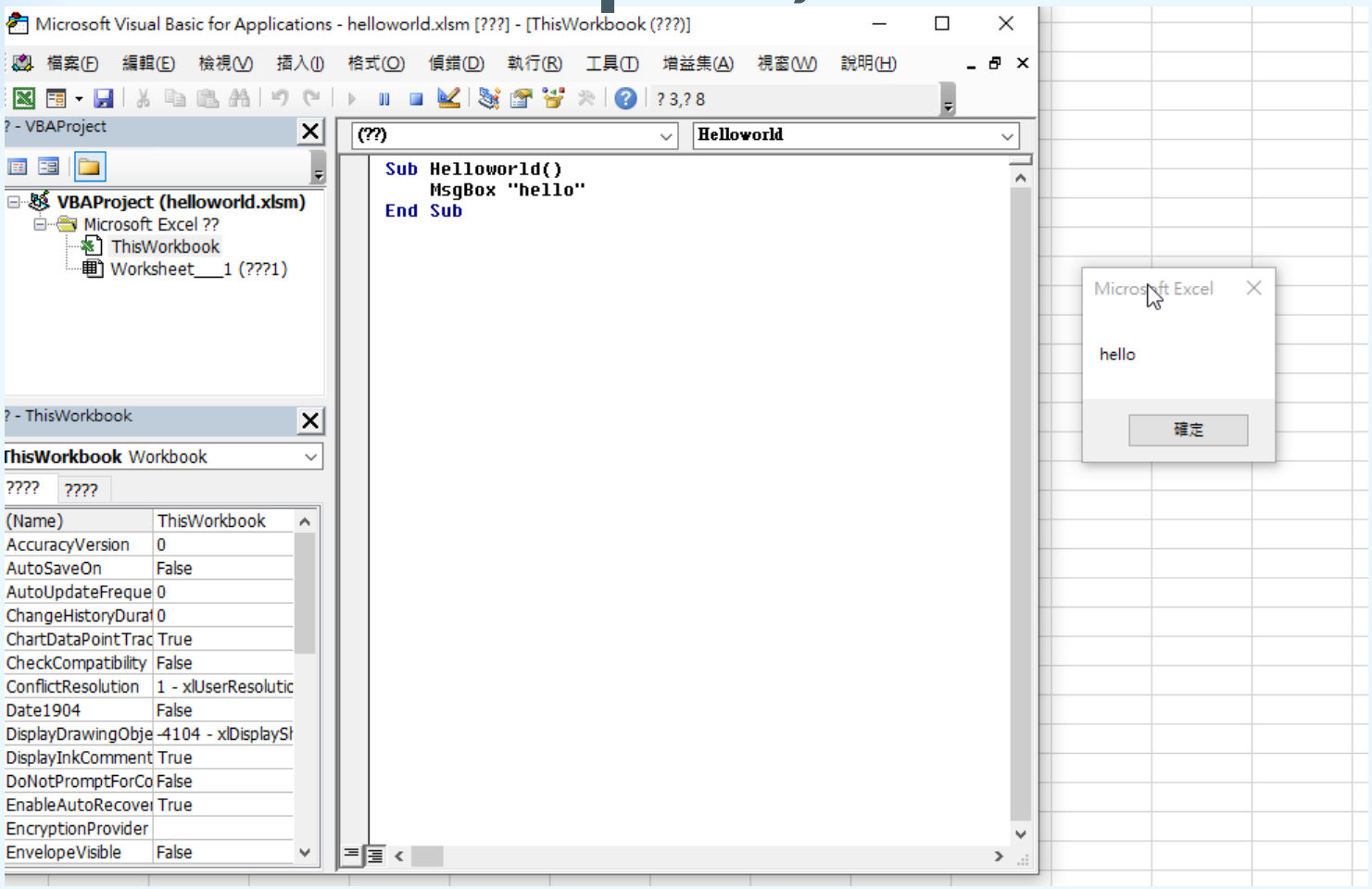
VBA - Helloworld Example 1/2

```
Sub HelloWorld()
    ' Display a message box with "Hello, World!"
    MsgBox "Hello, World!"
End Sub

Sub TestHelloWorld()
    ' Call the HelloWorld subroutine
    HelloWorld
End Sub
```

Note to Louis: show debug, show run

VBA - Helloworld Example 2/2



VBA - Q n A / Thank you