COMP1022Q Review Questions Week 9

Q1)

This question tests your understand of using functions. Here is some VBA code.

```
Function Yeah(Good)
    Yeah = Good + 1
End Function

Sub Cool()
    Dim Bad As Integer
    Dim Total As Integer

    Bad = 1
    For Total = 1 To 4
        Bad = Bad + Yeah(Bad)
    Next
    MsgBox Bad
End Sub
```

What is the content of the message box after you run the subroutine `Cool()`?

Answer: _____

Q2)

You are given the following function.

```
Function GetGrade(Score)
    If Score >= 0 And Score <= 100 Then
        If Score < 40 Then
            GetGrade = "F"
            Exit Function
        End If
        If Score < 60 Then
            GetGrade = "C"
            Exit Function
        End If
        If Score < 80 Then
            GetGrade = "B"
            Exit Function
        End If
        GetGrade = "A"
    End If
End Function
```

In the following page, three similar VBA functions are shown.

```
Function GetGrade1(Score)
    If Score >= 0 And Score <= 100 Then
        If Score < 40 Then
            GetGrade1 = "F"
        ElseIf Score < 60 Then
            GetGrade1 = "C"
        ElseIf Score < 80 Then
            GetGrade1 = "B"
        Else
            GetGrade1 = "A"
        End If
    End If
End Function

Function GetGrade2(Score)
    If Score >= 0 And Score <= 100 Then
        If Score < 40 Then
            GetGrade2 = "F"
        End If
        If Score < 60 Then
            GetGrade2 = "C"
        End If
        If Score < 80 Then
            GetGrade2 = "B"
        End If
        GetGrade2 = "A"
    End If
End Function

Function GetGrade3(Score)
    If Score >= 0 And Score <= 100 Then
        If Score >= 0 Then
            GetGrade3 = "F"
        End If
        If Score >= 40 Then
            GetGrade3 = "C"
        End If
        If Score >= 60 Then
            GetGrade3 = "B"
        End If
        If Score >= 80 Then
            GetGrade3 = "A"
        End If
    End If
End Function
```

Given an input number in the range 0 to 100 inclusive, which of the above functions will produce **different output** from the function GetGrade shown on the previous page?

A) Only GetGrade1 and GetGrade2 will produce different output from GetGrade
B) Only GetGrade2 and GetGrade3 will produce different output from GetGrade
C) Only GetGrade1 will produce different output from GetGrade
D) Only GetGrade2 will produce different output from GetGrade
E) Only GetGrade3 will produce different output from GetGrade
F) All of the above 3 functions will produce different output from GetGrade

Answer (A/B/C/D/E/F): _____

Q3)

Here is all the code in an Excel file.

```
Sub CGAGoesUp()
  CGA = CGA + 0.2
End Sub

Sub CGAGoesDown()
  CGA = CGA - 0.2
End Sub

Sub SeveralSemesters()
  CGA = 2.8
  CGAGoesUp
  CGAGoesUp
  CGAGoesDown
  CGAGoesUp
  MsgBox "Now your CGA is " & CGA
End Sub
```

When you run SeveralSemesters() you expect to see the message *Now your CGA is 3.2*. However, the message *Now your CGA is 2.8* is shown instead.

One thing needs to be added to make everything work properly. What should be added, and where?

Answer: _____

Q4)

What message do you see if you run the following subroutine and enter *Hang Hau* ?

```
Sub WhereDoYouLive()
    Accommodation = InputBox("Where do you live?")

    If Accomodation = "Campus" Then
        MsgBox "Very convenient!"
    ElseIf Accomodation = "Tai Po Tsai" Then
        MsgBox "You only need a 10 minute walk!"
    ElseIf Accomodation = "Hang Hau" Then
        MsgBox "You only need to take 1 bus!"
    ElseIf Accomodation = "TKO" Then
        MsgBox "That's close!"
    Else
        MsgBox "You better get up early!"
    End If
End Sub
```

Answer: The message you see is _____

Answers to Week 9 Review Questions

Q1)
The answer is 31.

Initially, the value of Bad is 1.
In the first iteration of the for loop, the function Yeah is used with the value of Bad as the input value. It sums the value of Bad and 1 and returns 2. Then the output value of the function Yeah which is 2 is added to the value of Bad. Bad becomes 3.
Similarly, in the second iteration, the function Yeah outputs the sum of the value of Bad and 1. The output value 4 is added to the Bad variable which becomes 7.
In the third iteration, the function Yeah outputs the sum of the value of Bad and 1. The output value 8 is added to the Bad variable which becomes 15.
Finally, the function Yeah outputs the sum of the value of Bad and 1. The output value 16 is added to the Bad variable, which becomes 31.

Q2)
The answer is D.
GetGrade2 will always output 'A' as the last statement (GetGrade2 = 'A') is always executed no matter what the input is.

Q3)

In this example the variable CGA is being changed in many different places. If you add

```
Dim CGA As Single
```

at the top of the code area (not inside any subroutines) then CGA will be a *global variable*. That means it will work everywhere, in every subroutine or function. If you add that line of code at the top and then run `SeveralSemesters()` then the code will work correctly, and the final message will be *Now your CGA is 3.2*.

Q4)

If you run the code and enter *Hang Hau* you will see this message:

You better get up early!

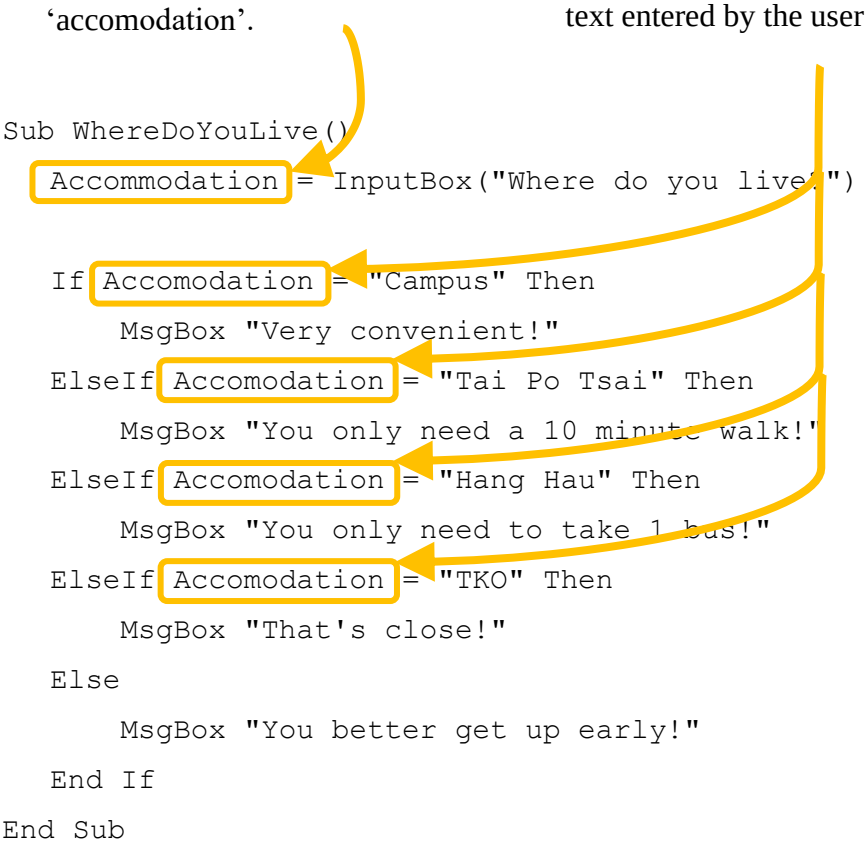
You will **not** see this message:

You only need to take 1 bus!

The reason is indicated below.

When VBA sees this, it creates this as a variable. However, this is spelled differently to the other 'accomodation'.

All these are spelled 'accomodation', with just one 'm'. It is different spelling to the first 'accommodation'. When VBA sees this, it automatically creates this **as a second variable**. When the subroutine is executed the user enters something, but it gets stored in the first variable. So when the second variable is checked, the text entered by the user is not in it.



```
Sub WhereDoYouLive()
   Accommodation = InputBox("Where do you live?")

   If Accomodation = "Campus" Then
       MsgBox "Very convenient!"
   ElseIf Accomodation = "Tai Po Tsai" Then
       MsgBox "You only need a 10 minute walk!"
   ElseIf Accomodation = "Hang Hau" Then
       MsgBox "You only need to take 1 bus!"
   ElseIf Accomodation = "TKO" Then
       MsgBox "That's close!"
   Else
       MsgBox "You better get up early!"
   End If
End Sub
```