Quiz 2 solutions and explanations

IMPORTANT: Even if you do not intend/need to look through the solutions to Quiz 2, you still need to mark this quiz as completed using the blue "Mark as Completed" button in the lower right of this page. By doing so, you will unlock Assignment 2!

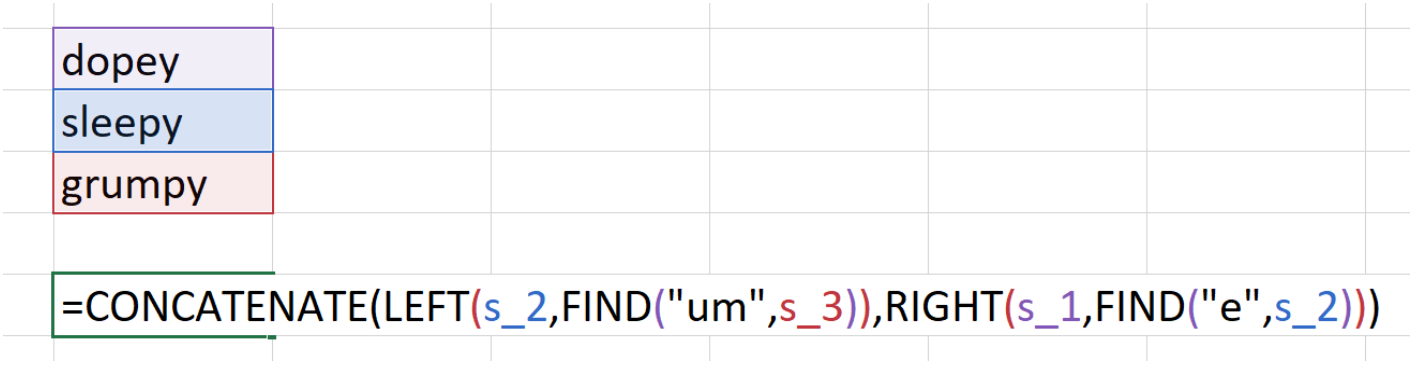
This document is meant to provide clear explanations for the Quiz 2 questions (not the in-video quizzes since they have explanations already). I do NOT provide feedback during the quiz (like I do for the screencasts) because a learner could just guess, obtain the correct answers, then put them back into the quiz and get 100%!

This document is purely for you to learn more and to correct your misconceptions about the material. If you view this document soon after you take the quiz to see why you missed a certain question, it will serve as a great learning tool!

PLEASE DO NOT SHARE THIS DOCUMENT WITH ANYONE! Using this document to complete Quiz 2 is a violation of Coursera's Honor Code (a.k.a. cheating).

Question 1:

What text string results when the following formula is entered into Excel? Your answer should just be 6 characters long.



Solution: We always want to start in the inner-most parentheses. FIND("um",s_3) will output the start position of "um" in "Grumpy", which is 3. FIND("e",s_2) will output the start position of the first "e" in "sleepy", which is 3. LEFT(s_2,3) will output the leftmost 3 characters in "sleepy", which are "sle". RIGHT(s_1,3) will output the rightmost 3 characters of "dopey", which are "pey". Finally, CONCATENATE("sle","pey") will result in "slepey". So, "slepey" is the correct answer.

Question 2:

When the Test subroutine below is executed, what string will be placed into cell A4 on the spreadsheet?

```
Option Explicit
Option Base 1
```

```
Sub Test()
Dim A As Variant, i As Integer
A = Split("The quick brown fox jumps over the lazy dog.", " ")
For i = 0 To UBound(A)
    Range("A1:A" & UBound(A)).Cells(i + 1, 1) = A(i)
Next i
End Sub
```

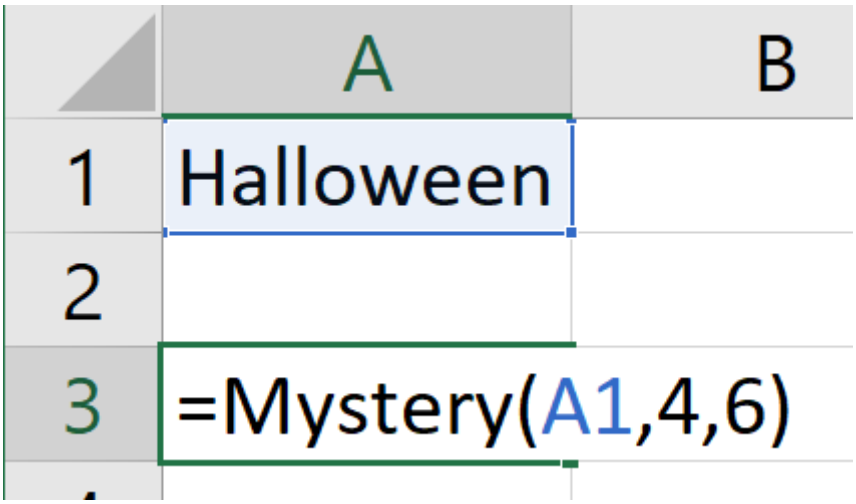
Solution: The Split function will split the string wherever there is a space, so A is just a vector containing all the words in the string. The For…Next loop will go through all 9 items and one at a time place each word into cells A1:A9. So, A4 will have the 4th word, which is “fox”. So, fox will be in cell A4.

Question 3:

What will result in cell A3 when the Mystery function is executed?

```
Option Explicit
```

```
Function Mystery(str, a, b)
Dim n As Integer, i As Integer
Dim x As String, y As String, z As String
n = Len(str)
x = Left(str, a - 1)
For i = 1 To b - a + 1
    y = y & Mid(Mid(str, a, b - a + 1), b - a + 2 - i, 1)
Next i
z = Right(str, n - b)
Mystery = x & y & z
End Function
```



Solution: We are trying to find what Mystery(“Halloween”,4,6) will do. So, in the Mystery function, str will be “Halloween”, a will be 4, and b will be 6. First, n is set to the length of str, which is 9. Next, x is set to the leftmost 3 characters (a is 4 so 4-1 is 3) of str, which are “Hal”. In the For…Next loop, we iterate from 1 to (6-4+1) = 3. In each iteration, we add to string y (y will start out as empty/nothing) the Mid(Mid(… bit.

For iteration 1 (i =1), Mid(Mid(str,4,6-4+1),6-4+2-1,1) = Mid(Mid(str,4,3),3,1) = Mid(“Halloween”,4,3),3,1) = Mid(“low”,3,1) = “w”. After the 1st iteration, y therefore will be “w”.

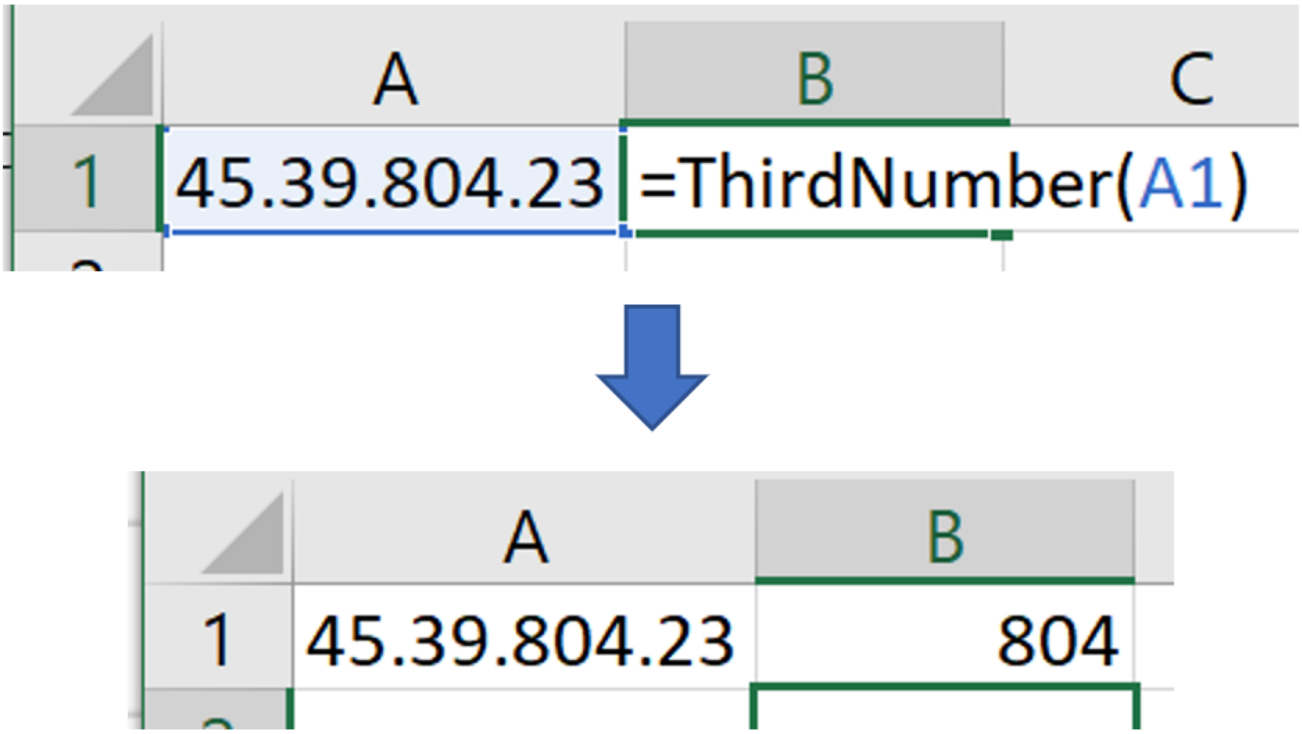
For iteration 2 (i =2), Mid(Mid(str,4,6-4+1),6-4+2-2,1) = Mid(Mid(str,4,3),2,1) = Mid(“Halloween”,4,3),2,1) = Mid(“low”,2,1) = “o”. After the 2nd iteration, y therefore will be “wo”.

For iteration 3 (i =3), Mid(Mid(str,4,6-4+1),6-4+2-3,1) = Mid(Mid(str,4,3),1,1) = Mid(“Halloween”,4,3),1,1) = Mid(“low”,1,1) = “l”. After the 2nd iteration, y therefore will be “wol”.

Next, z will be set to Right(“Halloween”,9-6) = “een”. Finally, the output of the function will be x & y & z, which is “Halwoleen”!

Question 4:

In the ThirdNumber function below, which extracts the number located between the second and third periods, what goes into the Mid function in the VBA code (i.e., what goes in the "< What code goes here? >" line?)?



```
Option Explicit

Function ThirdNumber(s As String) As Integer
Dim firstdot As Integer, seconddot As Integer
Dim thirddot As Integer
firstdot = InStr(1, s, ".")
seconddot = InStr(firstdot + 1, s, ".")
thirddot = InStr(seconddot + 1, s, ".")
ThirdNumber = Mid(< What code goes here? >)
End Function
```

Solution explanation: The 4th line will use the InStr function to find the location of "." in string s starting the search at position 1. So, firstdot will be equal to 3. The next line will find the location of "." in string s starting the search at position 4. seconddot, therefore, will equal 6. Similarly, thirddot will be equal to 10. In order to output the 3rd number (804 in this example), we will need to use the locations of thirddot and seconddot. "804" takes up positions seconddot + 1 through thirddot – 1. The Mid function needs to know the starting position but also the length of the string. The starting position is seconddot + 1. The length of the string is thirddot – 1 – seconddot + 1 - 1 (we subtract one because, for example, if we wanted to keep positions 7 through 9, seconddot would be in position 6 and thirddot would be in position 10, the length of the string is only 3, which we can get from 10 – 6 – 1 = 3). So, the length of the string is thirddot – seconddot - 1. Answer A below is correct.

A. s, seconddot + 1, thirddot - seconddot – 1

Correct. See explanation above.

B. s, seconddot, thirddot – 1

Incorrect. See explanation above.

C. s, seconddot - 1, seconddot + 1

Incorrect. See explanation above.

D. s, seconddot, thirddot - seconddot – 1

Incorrect. See explanation above.

E. s, seconddot + 1, thirddot – seconddot

Incorrect. See explanation above.

Question 5:

When the ManipulateText subroutine is executed, what will result in the message box? The flip function just flips a string left to right, for example flip("Hi there, my name is Charlie") would result in "eilrahC si eman ym ,ereht iH".

```
Sub ManipulateText()
Dim A As Variant, B As Variant, i As Integer
Dim s1 As String, s2 As String
A = Split("A man, a plan, a canal, Panama", ",")
s1 = Join(A)
For i = 1 To Len(s1)
    If Mid(s1, i, 1) <> " " Then
        s2 = s2 + Mid(s1, i, 1)
    End If
Next i
s2 = UCase(s2)
s2 = flip(s2)
MsgBox s2
End Sub
```

Solution: The Split function will split the string wherever there is a comma (“,”). This will create a vector A: [“A man” “ a plan” “ a canal” “ Panama”] (Note the spaces before the 2nd through 4th items.)

s1 will then be all the elements of A joined together: s1 = “A man a plan a canal Panama”. The For…Next loop will iterate from i = 1 to 27 (27 is the # of characters of s1) and if each character (one at a time) is not a space (“ “), then that character will be added to s2 (note that instead of “+” we could use “&”). Basically, this just removes the spaces, so s2 = “AmanaplanacanalPanama”. Next, the UCase function makes everything in s2 uppercase, and finally the flip function flips the order of the string. So, in the end s2 = “AMANAPLANACANALPANAMA” □ did you notice that it is spelled the same forwards as backwards?!! So, the correct answer is A below.

A. AMANAPLANACANALPANAMA

B. amanaP ,lanac a ,nalp a ,nam A

C. AMANAP LANAC A NALP A NAM A

D. amanaPlanacanalpanamA

E. AMANAP,LANACA,NALPA,NAMA