

Mr. Giansante



Visual Basic

Text and Strings
Quick Challenges

August 2016

Quick Challenges



Email Address Generator

Write a Visual Basic program that generates an email address for a person using the following rule:

The email address will include the first six letters of the person's last name, followed by the underscore character, followed by the first letter of their first name. All characters should be lowercase.

Examples:

John Smith = smith_j@lincoln.edu.ar
Sally Johnson = johnso_s@lincoln.edu.ar

Your program should contain two TextBox controls (one for first name and one for last name), one Button control labeled "Create Email" and one Label control to display the result.

All error checking should be included (ie. if they leave a TextBox blank).



Word Counter

Write a Visual Basic program that will read in a text file and provide the following analysis of the text:

- Number of characters
- Number of words
- Number of sentences

To select a text file, the user should be presented with the "Open File" CommonDialog.

To determine the number of words, simply scan the string and add one everytime you hit a space. Be careful though, sometimes there are two spaces after punctuation marks.

To count the number of sentences, simply scan the string and add one everytime you hit a punctuation mark (ie. period or exclamation mark or question mark).



Four Letter Words

Source: Based on a problem from the 1998 University of Waterloo Computer Programming Contest

The "Society for the Prevention of Profanity on the Internet" is concerned about the number of four-letter words being transmitted on chat programs and has proposed the mandatory use of software to remove all four-letter words from every transmission.

Write a Visual Basic program that will allow the user to enter a line of text into a TextBox control and then click a Button control to display the censored message in a Label.

All four-letter words should be censored by replacing them with four asterisks (****).

Sample Input:
The quick brown fox jumps over the lazy red dog

Sample Output:
The quick brown fox jumps **** the **** red dog

Quick Challenges



Palindromes

Write a Visual Basic program that will allow the user to enter a word or sentence and then inform the user if it is a palindrome.

Palindromes are words or sentences that are spelled the same way backward and forward.

In the case of sentences, it is permissible to play with spaces and punctuation.

Word Examples: radar, level, racecar, mom

Sentence Example: "Madam, I'm Adam."

The user should enter the word or sentence using a TextBox control.

Pseudocode

- Get input from user
- Using a **For-Next** loop and a second variable, remove any non-alphabetical characters (ie. spaces, punctuation).
- In the loop above, you should also convert all the characters to either uppercase or lowercase. Otherwise, if the user types in "Bob", then the reverse is "boB" and the program will not recognize the fact that they are actually the same.
- Using a **For-Next** loop and a second variable, reverse the individual letters in the word.
- Using an If-Then statement, compare the original word to the reversed word.
- Display a message stating whether or not the word or sentence is a palidrome.

Palidrome Examples

The following is a sampling of palindromes, with authors credited where known:

Lewd did I live, & evil I did dwel. (John Taylor)
Cigar? Toss it in a can. It is so tragic. (J.A. Lindon)
Doc, note. I dissent. A fast never prevents a fatness. I diet on cod. (Peter Hilton)
Rise to vote, sir (1925, unknown)
A man, a plan, a canal: Panama! (a tribute to Theodore Roosevelt from Leigh Mercer)
Campus motto: Bottoms up, Mac!
Dog doo! Good God!
He lived as a devil, eh?
Pull up, Eva, we're here! Wave! Pull up!
Marge lets Norah see Sharon's telegram.
Now, sir, a war is won!
Was it a rat I saw?
Too hot to hoot

Source: The Palindromist Magazine.

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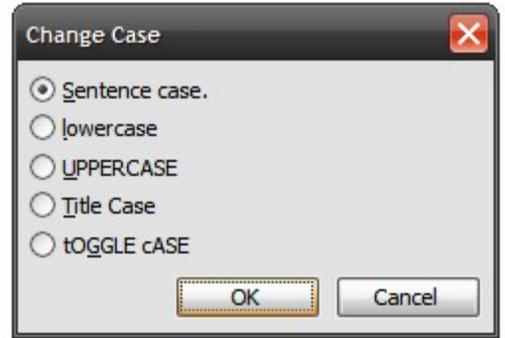


Change Case

Create a Visual Basic program that acts as Microsoft Word's **Change Case** function.

Your program should include:

- A TextBox control where the user can enter their text
- Five RadioButtons
- A Button control labeled "Convert"
- A Label control where the result can be displayed



"Uppercase" and "Lowercase" can both be easily done with one line of code.

"Sentence Case" can also be done with one line of code (a bit harder though).

"Toggle Case" requires a **For-Next** loop.

"Title Case" requires a **For-Next** loop.



Morse Code Encoder

Write a Visual Basic program that converts a string of text into the equivalent Morse code.

Pictured to the right is the U.S. version of Morse Code.

For the purposes of this exercise:

- Use "-" for dashes and "." for dots.
- Do not put spaces between dots and dashes within a letter.
- Separate letters with one space.
- Separate words with three spaces.

Example:

Input: Hello Bob

Output:-.. .-.. --- -... --- ...

A	.-.-	S	...-
B	-.-.-	T	---
C	-.-.-.	U	..--
D	.-.-	V	...--
E	.	W	.-.--
F	..-.-	X	---.-
G	---.-	Y	---.-.
H	Z	--..-
I	..	1	-----
J	.-.-.-	2	..-.-.-
K	-.--	3	...-.-
L	.-.-.	4-
M	---	5
N	-.-	6	-----
O	---	7	-----
P	.-.-.	8	-----
Q	.-.-.-	9	-----
R	.-.-.	0	-----

Mr. Giansante

Quick Challenges

Mark (20)

Please fill out all the information in this column using a pen before getting this assignment marked.

Name

Date

Block

Academic Honesty

The work I am submitting is completely my own creation and has not been copied from anyone else's work. If I have received help on this project, the names of those who have assisted are listed below.

Signature

Email Address Generator

Mark (3)

Word Counter

Mark (3)

Four Letter Words

Mark (3)

Palindromes

Mark (4)

Change Case

Mark (4)

Morse Code Encoder

Mark (3)