# Assignment 4

CS2340

Palindromes

A palindrome is a word or phrase that reads the same from left to right as right to left. A simple palindrome is “kayak,” for example. Other rules are that you ignore punctuation and letter case. For example, “Madam, I’m Adam” is a palindrome despite commas, spaces, and upper and lower case differences. Palindromes can also contain digits, such as “12421”.

Write a program that does the following:

1. Request a string from the user. If it is zero length (the first character is ‘\n’) exit the program.
2. Determine if the string is a palindrome. If so, print “Palindrome.” If not, print “Not a palindrome.”
3. Return to request another string.

Program structure:

1. You can assume no input string is longer than 200 characters.
2. You must write a function that determines whether the string is a palindrome. Call this with the address of the string in $a0.
3. Within this function, you must call another function that removes anything that isn’t a letter or a number.
4. Within the second function, call a third function that converts lower case to upper case so your comparisons work properly.
5. You should have two files. The first has the main body of your code that requests a string, checks a palindrome, which is item 2, above plus initialization code. The second has any subroutines you may need, such as removing punctuation and converting case.

You will need to check the “Assemble all files in directory” setting for this to work.

**To hand in through eLearning:** A Zip file named CS2340-Asg4-<netID>.zip where you replace <netid> with your netID. For example, if I were to hand it in, the name would be CS2340-Asg4-jxc064000.zip. This must contain ALL files necessary to assemble and run your program.

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| Grading Criteria | |
| Comments and variable names | 15 |
| Recognizes correct palindromes and rejects things that are not | 50 |
| Correct program structure | 25 |
| Does not crash | 10 |
| Total | 100 |

Additional grading criteria:

Does not handle palindromes with punctuation or capitalization correctly. -10

Crashes for any reason: -10

Only one file: -25

Poor code formatting: -2 to -10

Poor coding practices, such as spaghetti code, use of magic numbers, etc. -2 to -10

Missing files: -20 or more

Using .include for your secondary file. -20