**Palindrome Project**

A palindrome is a word that is the spelled the same whether it is written backwards or forward, like racecar or rotator. Palindromes were dismissed for many years as not having any practical application, but it’s been recently discovered that palindromes play an important role in genetics by allowing damaged chromosomes to fold over in the middle to repair themselves.

For this project, you will need to write a program which finds that longest palindrome in a sequence of letters. Your program should prompt for a file, read its entire contents, and the output the longest palindrome found. For example, in this sequence of letters

VVAJASLEFJYABBZBBADOVDJXSOJGRJLALASD

the longest palindrome is ABBZBBA. Also note that there are other palindromes such as AJA, but we only want the longest.

For the sake of simplicity, you may assume that the palindrome is an odd length (i.e. there will always be a center letter) and that the letters will all be uppercase (you won’t need to worry about comparing A to a). Additionally, you may assume that there will be less than 1000 characters in the sequence.

When reading in the file, the text may be on multiple lines, but you should treat this as one long sequence and ignore newlines or carriage returns.

Writing in C#

Using System.IO;

Variables:

String largestPalindrome

String characterSet

Int two

Int length

Int index

Int indexSmaller

Int indexBigger

FileStream palindromeString;

Test: Did we open a file?

Test: Did we read in the file?

Test: Test the whole string to see if it is a Palindrome

* If yes then we are finished

Test: Move to middle minus one and run algorithm to see if it is the beginning of a palindrome

* If yes, save it as a string and the size

Test: move to next letter in the string and test for palindrome

* If it is a palindrome then check to see if it is larger than the current palindrome

After we move through the array we should have the largest palindrome

* Print it out to the user