**AP CS Palindrome Lab**

This lab requires you to manipulate a string and an array of strings.

Consider the following incomplete PalindromeLab class, which contains four static methods. Methods reverse, isPalindrome, and changeToPalindrome will reverse a string and create a palindrome from a given string. ( A palindrome is a string that reads the same from right to left ss from left to right. For example, ”dad”, “Dad”, “atoyota” and “AtoyOTa” are palindromes). In changeArrayToPalindrome method you will replace the strings in an array with palindrome versions of the strings.

**public class PalindromeLab {**

* **public static String reverse (String str)** returns a string whose characters are in reverse order of its String parameter. Following are the examples of calls to reverse:
  + reverse(“cat”) returns “tac”
  + reverse (“p”) returns “p”
  + reverse (“”) returns “”
  + reverse (null) returns null
* **public static boolean isPalindrome (String str)** returns true if a string parameter is a palindrome, false otherwise. Following are the examples of calls:
  + isPalindrome (“cat”) returns false
  + isPalindrome (“p”) returns true
  + isPalindrome (“piP”) returns true
  + isPalindrome (“”) returns false
  + isPalindrome (null) returns false
* **public static String changeToPalindrome (String str)** returns a palindrome string from its String parameter.

If str contains an even number of characters, n, the returned string is a palindrome that consists of the first n/2 characters of str, followed by the characters that create a palindrome.

If str contains an odd number of characters, n, the returned string is a palindrome that consists of the first (n/2+1) characters of str, followed by the characters that create a palindrome.

Following are the examples of calls:

* + changeToPalindrome (“break”) returns “brerb”
  + changeToPalindrome (“p”) returns “p”
  + changeToPalindrome (“”) returns “”
  + changeToPalindrome (null) returns null
  + changeToPalindrome (“street”) returns “strrts”
* **public static String [] changeArrayToPalindrome(String [] arr)**

changes every element of arr to be a palindrome. Returns **the new array**.

**}**