Java Exercises – Strings & StringTokenizer

1. Write a program that reads a string and then prints a diamond shaped array based on the characters of the string. As an example, if the string has the value "SAMPLE", then the program should print the pattern

```
        S
       SAS
      SAMAS
     SAMPMAS
    SAMPLPMAS
   SAMPLELPMAS
    SAMPLPMAS
     SAMPMAS
      SAMAS
       SAS
        S
```

   The program should work for a string up to ten characters long. If a user supplies a string that is longer than ten characters, the program should use only the first ten characters in forming the pattern.

2. A palindrome is a string that reads the same both forward and backward. Examples of palindromes are "radar" and "31413".

   (a) Write a boolean-valued method isPalindrome that has a single String parameter. The method should return true if and only if its parameter is a palindrome.

   (b) Modify your method so that it ignores cases of letters, punctuation marks, and blanks in making a decision about whether or not a string is a palindrome. For example, the string:

      "A man, a plan, a canal: Panama!"

      should be taken to be a palindrome.

   Write a program that prompts the user for a string and notifies the user if it is a palindrome.