Assignment 1
Due Thursday Feb 3
Deposit the .java files and any other text files that your programs use

1. **Palindrome.java**

   This is a slightly more complicated version of the program from class. Follow the directions below and

   - **DO NOT USE equalsIgnoreCase(..).**
   - **Use equals() instead.**
   - **That makes it a little more complicated but give you practice.**

A palindrome is a string that reads the same forwards and backwards. Write a program called Palindrome that reads strings from a file (sentences.txt), one string per line, and determines whether or not that string is a palindrome. Your program should request the name of the file, and read from the file using a Scanner object, if the file exists. Each line may have spaces and punctuation, **but you should ignore everything except for characters A through Z**. Furthermore, you should not distinguish between upper and lower case. **Use the String class only. Do not use StringBuilder.**

Again, directions for reading and writing to files are here.

Your program should have a method:

String removeCharacters(String s)

that returns a string that contains only the letters A...Z

That is, remove all non alphabetical characters and return a string with uppercase letters..
Use the String method toUpperCase()

Java' s method

boolean Character.isLetter(char c)

that returns true if c is an alphabetical character may be useful

and include another method

boolean isPalindrome(String s)

that returns true if s is a palindrome.

For example, given the following file (sentences.txt):

Too bad I hid a boot.
Madam, I'm Adam.
What is this all about?
Bob!
A man, a plan, a canal, Suez.
Lisa Bonet ate no basil.

Your program should print out the following output to another file (palindromes.txt):

Too bad I hid a boot.--> Palindrome
Madam, I'm Adam. --> Palindrome
What is this all about? --> Not a palindrome
Bob! --> Palindrome
A man, a plan, a canal, Suez.--> Not a palindrome
Lisa Bonet ate no basil. --> Palindrome.

2. Program **Change.java**

Write a program that creates a StringBuilder :

stringBuilder sb = new StringBuilder("I won 1000 dollars");

and then

(a) print sb

(b) change sb, using StringBuilder methods, to "I won 100 dolls"
and print the new version of sb **// this takes at most two lines**

(c) Change the version from part (b) to "I won 60 dollies"
and print the new version of sb **// this takes at most two lines**

You should create only **one** StringBuilder object and just keep changing it.

You can do this in main(...).