

Project 2 Palindrome Detector.

Due Date: 3/31/19 11:59pm

These are the instructions for your second Data Structure programming project. Recall that all code must be written **individually** and **independently**. Recall that violating this rule will result in **zero** credit for the project and probably a failing grade in the course.

Problem:

A palindrome is a phrase that reads the same forwards as it does backwards. For example, “**a man, a plan, a canal, Panama,**” is a palindrome. Write a program that uses a **stack** data structure to check for palindromes in **each line of a text file**. The stackX class is from LISTING 4.2. Test your program on the following example text file,

```
A man, a plan, a canal, Panama.
This line is not a palindrome
Don't nod
The next one might be my favorite
Taco Cat!
Another non-palindrome
Rats live on no evil star.
If your program finds this line, it's not working
Neil, a trap! Sid is part alien!
Step on no pets.
Dammit, I'm mad!
Madam, I'm Adam.
Madam, in Eden, I'm Adam.
Rise to vote, sir.
Never odd or even
If I had a hi-fi
Yo, banana boy!
Do geese see God?
No devil lived on.
Ah, Satan sees Natasha.
Lewd did I live & evil I did dwell!
A dog, a panic in a pagoda
Was it a cat I saw?
Was it a car or a cat I saw?
A Toyota's a Toyota.
Another non-palindrome
No lemons, no melon
Now I see bees, I won.
Ma is as selfless as I am.
Nurse, I spy gypsies—run!
The next one isn't as cool as the Panama one
A dog, a plan, a canal, pagoda
Was it Eliot's toilet I saw?
Some of these are hilarious. Papaya war?!
No, sir, away! A papaya war is on!
Go hang a salami, I'm a lasagna hog.
I, madam, I made radio! So I dared! Am I mad? Am I?
Swap God for a janitor, rot in a jar of dog paws.
```

Eva, can I see bees in a cave?
Not a palindrome
So many dynamos!
Red rum, sir, is murder.

Your program should output the palindromes that it finds in the document. For example:
java FindPalindromes palindromes.txt

"a man, a plan, a canal, Panama" is a palindrome.
"Don't nod" is a palindrome.
"Taco Cat!" is a palindrome.

What to hand in?

- A report includes problem statement, analysis, algorithm design, class prototype (class contract), program Input/Output, and tested results (analysis your result to see if it is correct).
- The source program (name your file "project2.java")
- You could either submit through Blackboard or my email box.

Each Java program should have the following in the beginning:

```
// Program Name: <The name of your Java program file>  
// Programmer: <Your name here>, <ID>  
// Assignment Number: <put project number here, e.g. Project #2>  
// Purpose: <A short problem description>
```