

CSCI 230 Homework 1
Spring 2017

Collaboration: None

Due Date: 9:30 am Jan 18

Create two separate Java programs to solve the following problems (25 points each):

1. A *pangram* is a sentence that uses every letter of the alphabet. So, for example, the following are pangrams:

- The quick brown fox jumps over a lazy dog.
- Pack my box with five dozen liquor jugs.
- How quickly daft jumping zebras vex.

Write a pangram checker program, *Pangram.java*, that first prompts the user to enter a string, and then displays if the entered string is a pangram. The pangram checker should ignore case. Your pangram checker should work properly for *any* input string. Interaction with your program should look like this (2 example runs listed):

```
Please enter a string for pangram testing:
Mr. Jock, TV quiz PhD, bags few lynx.
```

```
This sentence IS a pangram.
```

```
Please enter a string for pangram testing:
Pig and dogs don't get along with zebras.
```

```
This sentence IS NOT a pangram.
```

2. Write a *binary parity evaluator* program, *BinaryParity.java*, that prompts the user to enter a non-negative integer, reads the integer, and outputs whether the integer has *even parity* or *odd parity*. An integer has even parity if its binary representation contains an even number of one bits; otherwise it has odd parity. you **must** use recursion to solve this problem. A negative integer input value should cause your program to prompt the user (again) to enter a non-negative integer. Interaction with your program should look like this (2 example runs):

```
Please enter a non-negative integer value: -33
Please enter a non-negative integer value: -15
Please enter a non-negative integer value: 15
The number 15 has EVEN parity
```

```
Please enter a non-negative integer value: 16
The number 16 has ODD parity
```

Create a zip file that contains the completed *.java* files. The name of the zip file **must be** your last name in lower case. For example, *ritchie.zip* would be correct if the original co-developer of UNIX (Dennis Ritchie) submitted the assignment. Only assignments submitted in the correct format will be accepted (no exceptions). Submit the zip file to the appropriate Dropbox on OAKS by the due date. You may resubmit the zip file as many times as you like, Dropbox will only keep the newest submission.