CS 284 C: Quiz 4 (Laptop-based)
Spring 2020
Time: 50 minutes

Exercise 1 (*10 points*)

Compressing a linked list by skipping even numbers. This problem is similar to *compress* in the original quiz 4. Differently, in this problem, the `data` field is an Integer. Write a method `public void compress(Node node_head)` that compresses a list by counting repetitions of adjacent elements, and skipping the even Integers. For example, the result of applying this operation to [4,4,4,2,3,3,2,3,2,1,1] should be [(3,3),(1,2)], i.e., it has skipped 4 and 2 because they are even numbers. If the same odd number is separated by even numbers, you need to count that number as a whole instead of separately. Therefore, in the example above, the compressed list is [(3,3),(1,2)] instead of [(3,2),(3,1), (1,2)]. You can only traverse the linked list once.

Download the file `PairLinkedList.java` from our course website, and implement a function `compress` with the following signature. At the end of your function, set `this.head` to the head of the compressed linked list.

```
public void compress(Node node_head);
```

You have 50 minutes to code and upload your script to Canvas → Assignment → Quiz 4.

In the following cases, your score will be 0:

- If you have traversed the linked list more than once;
- If your result (`this.head`) is not a linked list;
- If have not submitted by the end of the recitation;
- If your code does not compile;

Test cases. Here are some test cases to help you code:

- Input:

$$4, 4, 4, 2, 3, 3, 2, 3, 2, 1, 1$$

  ⇒ Output:

$$(3, 3), (1, 2)$$

- Input:

$$3, 3, 2, 3, 2, 1, 1, 3$$

  $\Rightarrow$ Output:

$$(3, 3), (1, 2), (3, 1)$$

- Input:

$$3, 3, 2, 3, 2, 3, 1$$

  $\Rightarrow$ Output:

$$(3, 4), (1, 1)$$