CSC 241

Exercise 3

The size of a **LinkedStack** is an integer that identifies the number of nodes in a **LinkedStack**.

Write a recursive method called **sizeRec** for the **LinkedStack** class that returns the size of the **LinkedStack**.

Write an iterative method called **sizeIter** for the **LinkedStack** class that returns the size of the **LinkedStack**.

Create a driver to test both of these methods on the following cases:

1) The **LinkedStack** is empty. Check the size.
2) The **LinkedStack** has 5 elements in it. Check the size.
3) The **LinkedStack** has 1 element in it. Check the size. Pop the element and check the size again.

What is the runtime of these methods?

How could the **LinkedStack** data structure be modified so that the size method was constant time?

(Give the answers in your comment region at the top of the driver program.)