

```
public class LinkedBag<T> implements
Bag<T> {
```

```
    private class Node {
        private T data;
        private Node next;
    }
```

```
    private Node head;
```

```
    public LinkedBag() {
        head = null;
    }
```

```
    public int getCurrentSize() {
        int size = 0;
        Node current = head;
        while (current != null) {
            size++;
            current = current.next;
        }
        return size;
    }
```

```
    public boolean isEmpty()
    {
        return (head == null);
    }
```

```
    public boolean add(T newEntry)
    {
        Node newItem = new Node();
        newItem.data = newEntry;
        newItem.next = head;
        head = newItem;
        return true;
    }
```

```
    public int getFrequencyOf(T anEntry) {
        int frequency = 0;
        Node current = head;
        while (_____) {
            if (_____) {
                frequency++;
            }
            current = _____
        }
        return frequency;
    }
```

```
    public boolean remove(T anEntry)
    {
```

```
        Node current = head;
```

```
        while (_____)
        {
```

```
            // When we find what we
            // are looking for,
            // Remove by swapping
            // data from first position in
            if (_____) {
                current.data = _____;
                //After copying, move the head
                //node to node after the
                //current head
                head = _____
                return true;
            }
```

```
            current = _____;
        }
        return false;
    }
```

```
// We aren't going to implement grab()
// for a linked bag in class.
// One way of doing so would be to:
// 1. Get the current size of the bag
// 2. Choose a random number <size
// 3. Traverse the bag keeping track of
// where you are
// 4. Perform the same operation as
// remove() at the right index
// This is O(n) (because getCurrentSize()
// is O(n). We then pay another O(n) to
// iterate through the bag
// How could we implement (random) grab
// without storing the size and without
// iterating through the bag twice?
```

```
    public T grab() {
```

```
    }
```

```
    }
```