Suppose you are given a LinkedList where each node represents a digit in a positive integer. The head of the list holds the most significant digit of the number while the tail of the list holds the least significant. This list of digits will be represented using the DigitLinkedList class.

Write an instance method called addValue for the DigitLinkedList class which will add an arbitrary, positive integer to the number represented by the list.

It is guaranteed that this is in a valid state when addValue() is called. This means that each DigitNode’s value will be between 0 and 9 inclusive. It also means that first != null (if the list stores the the value zero, then it would have a single DigitNode with a digit value of 0).

Examples of calls to addValue(). The result shown is the new state of this.

- [3, 1, 1].addValue(3) => [3, 1, 4]
- [3, 1, 1].addValue(20) => [3, 3, 1]
- [4, 2, 9].addValue(10) => [4, 3, 9]
- [0].addValue(408) => [4, 0, 8]
- [1, 1].addValue(303) => [3, 1, 4]

Use the following DigitLinkedList implementation.

```java
public class DigitLinkedList {
    private DigitNode first;

    private static class DigitNode {
        // The nested DigitNode class.
        private int digit;
        private DigitNode next;
        private DigitNode(int d, DigitNode n){
            digit = d;
            next = n;
        }
    }
}
```

You may create new DigitNode objects using the provided constructor. You may not create any other data structures.

Do not use any other Java classes or methods.
/* Pre: val >= 0; this list is in a valid state -> first != null
 * Post: this list will represent the sum of the previous state + val
 *          this list will still be in a valid state
 */

public void addValue(int val){