

## AP 2004 Free Response: WordList

- The following class `WordList` is designed to store and manipulate a list of words. The incomplete class declaration is shown below.
- You will be asked to implement two methods.

```
1 public class WordList
2 {
3     // contains Strings made up of letters
4     private ArrayList<String> group;
5
6     // postcondition: returns the number of words in this WordList that
7     //                are exactly len letters long
8     public int numWordsOfLength(int len)
9     { /* to be implemented in part (a) */ }
10
11    // postcondition: all words that are exactly len letters long
12    //                have been removed from this WordList, with the
13    //                order of the remaining words unchanged
14    public void removeWordsOfLength(int len)
15    { /* to be implemented in part (b) */ }
16
17    // ... constructor and other methods not shown
18 }
```

- Write the `WordList` method `numWordsOfLength`. This method returns the number of words in the `WordList` that are exactly `len` letters long. For example, assume that the instance variable `group` of the `WordList` `animals` contains the following:

```
["cat", "mouse", "frog", "dog", "dog"]
```

The table below shows several sample calls to `numWordsOfLength`.

Call	Result returned by call
<code>animals.numWordsOfLength(4)</code>	1
<code>animals.numWordsOfLength(3)</code>	3
<code>animals.numWordsOfLength(2)</code>	0

- Write the `WordList` method `removeWordsOfLength`. This method removes all words from the `WordList` that are exactly `len` letters long, leaving the order of the remaining words unchanged. For example, assume that the instance variable group of the `WordList` `animals` contains the following:

```
["cat", "mouse", "frog", "dog", "dog"]
```

The table below shows a sequence of calls to the `removeWordsOfLength` method.

Call	myList after the call
<code>animals.removeWordsOfLength(4);</code>	<code>["cat", "mouse", "dog", "dog"]</code>
<code>animals.removeWordsOfLength(3);</code>	<code>["mouse"]</code>
<code>animals.removeWordsOfLength(2);</code>	<code>["mouse"]</code>