

```
public static int compute(String word) {  
    char[] letters = {'a', 'e', 'i', 'o', 'u'};  
    int result = 0;  
  
    for (int i = 0; i < word.length(); i++) {  
        for (int j = 0; j < letters.length; j++) {  
            if (word.charAt(i) == letters[j]) {  
                result++;  
            }  
        }  
    }  
  
    return result;  
}
```

The diagram illustrates a network of nodes and connections overlaid on the Java code. The nodes are colored purple, orange, yellow, and grey. Purple nodes are concentrated in the first two lines of the code. Orange and yellow nodes are scattered throughout the nested loops. A single grey node is located at the bottom right, near the closing brace of the function. Lines of various colors connect these nodes, creating a complex web that spans the entire code block.