

```
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 the control flow of the provided Java code. It features a series of nodes (colored circles) and directed edges (colored lines) that trace the execution path. The nodes are distributed across the code, with a dense cluster in the middle section corresponding to the nested loops. The edges show the flow from the function start, through the initialization of variables, into the outer loop, then into the inner loop, and finally to the return statement and the end of the function.