

```
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 uses colored nodes and lines to represent the execution path:

- Blue nodes and lines:** Represent the entry point and the initial setup of the function, including the declaration of the `letters` array and the initialization of `result` to 0.
- Orange nodes and lines:** Trace the execution of the nested `for` loops. They show the iteration over the indices `i` and `j`, and the conditional check `word.charAt(i) == letters[j]`. The path branches at the `if` statement, showing the flow when the condition is true (leading to `result++`) and when it is false.
- Yellow nodes and lines:** Highlight the incrementing of the `result` variable and the subsequent closing of the inner and outer loops.
- Purple nodes and lines:** Indicate the final `return` statement and the exit from the function.