

```
public static int compute(String string1, String string2) {  
    int x;  
    if (string1.length() < string2.length()) {  
        x = string1.length();  
    } else {  
        x = string2.length();  
    }  
    int result = 0;  
    for (int i = 0; i < x; i++) {  
        if (string1.charAt(i) == string2.charAt(i)) {  
            result++;  
        }  
    }  
    return result;  
}
```

The diagram illustrates the control flow of the provided Java code. Nodes are represented by colored circles, and lines represent the flow of execution. The nodes are organized as follows:

- Purple Nodes:** Located at the start of the method, the `if` condition, the assignment `x = string1.length();`, and the closing brace of the `if` block.
- Orange Nodes:** Located at the start of the `for` loop, the `if` condition inside the loop, the `result++` statement, and the closing brace of the `for` loop.
- Yellow Nodes:** Located at the `return result;` statement and the closing brace of the method.

The flow starts at the method entry, goes through the `if` block, then enters the `for` loop, iterates through the loop body, and finally returns the result.