

```
public static String removeDoubleCharacters(String str) {  
    if (str.isEmpty()) {  
        return str;  
    }  
  
    StringBuilder result = new StringBuilder();  
  
    char prev = str.charAt(0);  
    result.append(prev);  
    for (int i = 1; i < str.length(); i++) {  
        char cur = str.charAt(i);  
        if (prev != cur) {  
            result.append(str.charAt(i));  
        }  
        prev = cur;  
    }  
    return result.toString();  
}
```

The diagram illustrates the relationships between various elements in the code snippet using colored nodes and connecting lines. The nodes are colored as follows: purple for the function signature and the first conditional block; blue for the StringBuilder declaration; red for the loop and its inner conditional block; orange for the loop's body and the prev assignment; and yellow for the return statement and the closing brace. Lines connect nodes that are syntactically related, such as a variable being declared and then used, or a loop body being connected to its header.