Mystery Code

For the given code of nested Choices, 
a. make a truth table describing it, 
b. indicate what it does, not how it does it, 
c. could it be re-written using the if-elseif-else form? Why? 
d. write an equivalent algorithm of Choices in series.

// Does What??
if (a & b) {
    result = 2;
}else{
    if (a ^ b) {
        result = 1;
    }else{ //hint
        result = 0;
    }//end if
}//end if

Mystery Code Solution

// Does What as nest
if (a & b) { // both
    result = 2;
}else{ // not both
    if (a ^ b) { //one
        result = 1;
    }else{ //none
        result = 0;
    }//end if
}//end if

// Does What as series
if (a & b) { // both
    result = 2;
}else{ //not both
    if (a ^ b) { //only one
        result = 1;
    }else{ //neither
        result = 0;
    }//end if
}//end if

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>F</td>
<td>0</td>
</tr>
<tr>
<td>F</td>
<td>T</td>
<td>1</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>1</td>
</tr>
<tr>
<td>T</td>
<td>T</td>
<td>2</td>
</tr>
</tbody>
</table>

The result r is the number of truth values of a, b which are true.
It can be done as an If-Elseif-else form only because it meets all 3 conditions.
The series form can be done in other ways.