Design Patterns Used

1

<table>
<tr><td colspan="2"><b>Pattern Name:</b> State</td></tr>
<tr><td><b>Class Name</b></td><td><b>Role in Pattern</b></td></tr>
<tr><td>Player</td><td>In this pattern, player contained a variable “hasKey” which allowed him to hold one of two states</td></tr>
<tr><td colspan="2">Purpose: The state method allows me to change the places where chip is allowed to walk based on if he has obtained a key or not. With the key in hand, he is allowed to go through the “locked” block and complete each level</td></tr>
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2

<table>
<tr><td colspan="2"><b>Pattern Name:</b> Observer</td></tr>
<tr><td><b>Class Name</b></td><td><b>Role in Pattern</b></td></tr>
<tr><td>Player</td><td>Observable</td></tr>
<tr><td>Spider</td><td>Observer</td></tr>
<tr><td colspan="2">Purpose: This pattern allows me to have the spider chase chip down as he tries to get the key and enter the gate to win the second level. I am able to send updates to the spider on chips location every time he moves</td></tr>
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3

<table>
<tr><td colspan="2"><b>Pattern Name:</b> Factory</td></tr>
<tr><td><b>Class Name</b></td><td><b>Role in Pattern</b></td></tr>
<tr><td>Map</td><td>Client</td></tr>
<tr><td>Block Factory</td><td>Factory</td></tr>
<tr><td>Block</td><td>Abstract Class</td></tr>
<tr><td>Walk Block</td><td>Concrete Class</td></tr>
<tr><td>Key Block</td><td>Concrete Class</td></tr>
<tr><td>Wall Block</td><td>Concrete Class</td></tr>
<tr><td>Lock Block</td><td>Concrete Class</td></tr>
<tr><td>Victory Block</td><td>Concrete Class</td></tr>
<tr><td colspan="2">Purpose: The factory pattern was very useful for two main reasons. One it allowed me to create all the blocks required at runtime, by using a integer grid to store values and then building what was needed. Also when blocks needed to change (like when a key is picked up), I am able to simply reference the block by location as a “Block” object, and not worry about the specific type.</td></tr>
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