**Single-cycle CPU**

*Combinatorial control*

The setting of the control lines is completely determined by the opcode fields of the instruction.

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<tr>
<th>Instr.</th>
<th>and</th>
<th>or</th>
<th>add</th>
<th>sub</th>
<th>slt</th>
<th>lw</th>
<th>sw</th>
<th>beq</th>
<th>j</th>
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<td>Funct[5:0]</td>
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<td>(OR)</td>
<td>(ADD)</td>
<td>(SUB)</td>
<td>(SLT)</td>
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<td>(Funct)</td>
<td>(Funct)</td>
<td>(Funct)</td>
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*aThis assumes no memory read and write at the same time.*