

Start 0

ALU.op=0 PC.write=0 data sel=0
 wb.sel=1 Br.sel=1 SwP.we=0
 rf.we=0 Rb.sel=0
 PC.rst=1 mm.sel=0
 PC.sel=0 dm.we=1
 Ir.load=0 SwP.sel=0

Start 1

Same as
Start 0

Decode

ir.load=0

| | |
|---|--|
| ALU.OP: wb.sel=0 PC.write=0 if (mm==0) rb.sel=0 | BR & BNR: if mm+stat!=0 br.sel=1 PC.sel=1 else PC.write=0 |
| BRR & BNR: if mm+stat!=0 br.sel=0 PC.sel=1 else PC.write=0 | LOD: PC.write=0 rb.sel=1 |
| SWP: rb.sel=1 PC.write=0 | STR: PC.write=0 Rb.sel=1 |

Fetch

alU.op=0 PC.sel=0 SwP.sel=0
 PC.rst=0 rb.sel=0
 wb.sel=0 mm.sel=0
 rf.we=0 dm.we=1
 Ir.load=1 SwP.we=0
 PC.write=1 data.select=0

Execute

PC.write=0

| | |
|---|---|
| ALU.OP: if mm==0 alU.op=01 else ALU.op=00 | LOD & STR: alU.op=11 if (mm==0) mm.sel=0 else mm.sel=1 |
| SWP: alU.op=10 SwP.we=1 data select=1 | |

Mem

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|-----------------------------|-----------------|-----------------------------|
| LOD: dm.we=1 wb.sel=1 | STR: dm.we=0 | SWP: swP.we=0 rf.we=1 |
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Write back

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|--------------------------|--|
| ALU.OP & LOD: rf.we=1 | SWP: rf.we=1 SwP.sel=1 data select=10 |
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