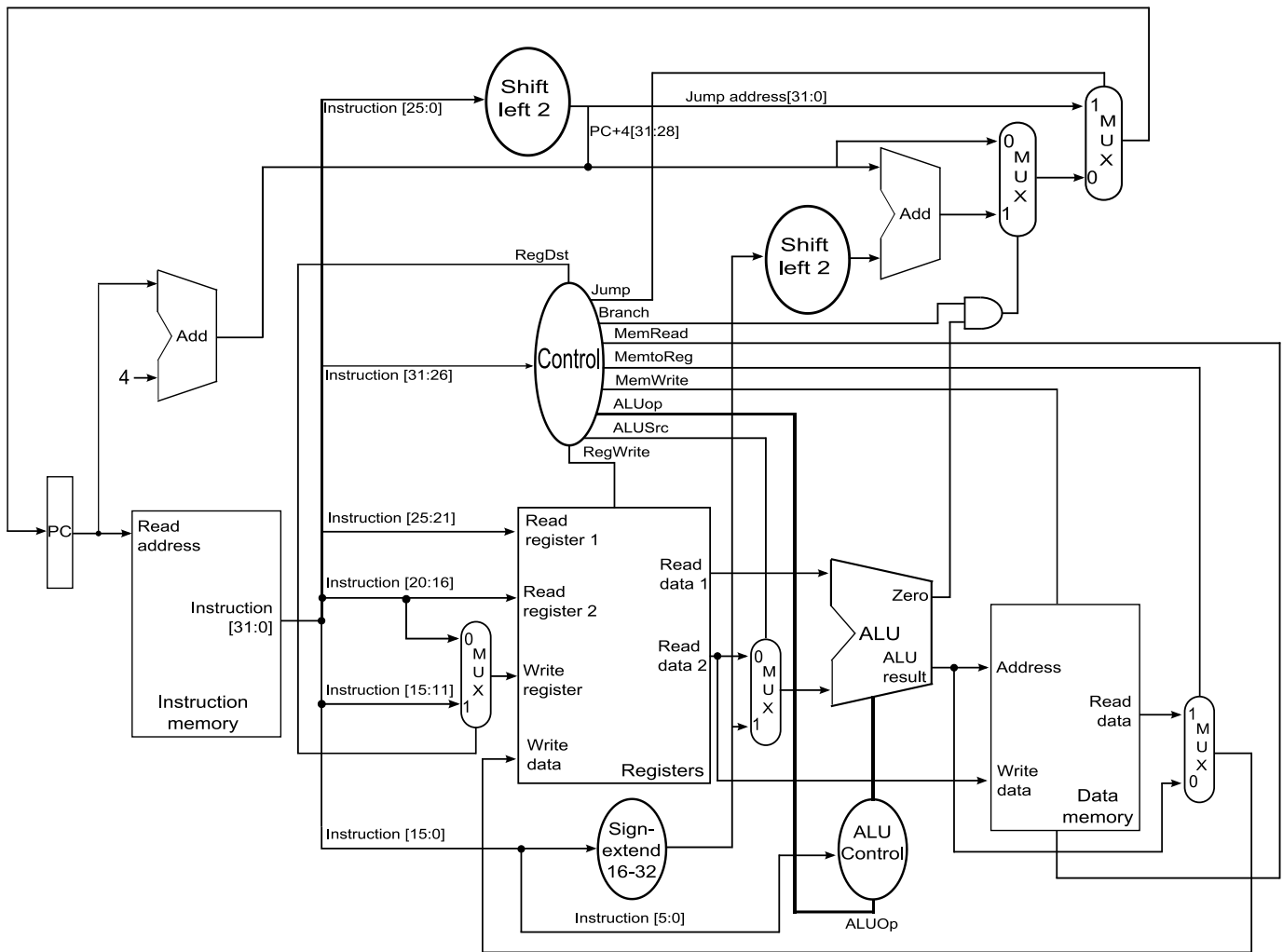


The single-cycle MIPS32 datapath:



Supported instructions: add, sub, and, or, slt, lw, sw, beq, j

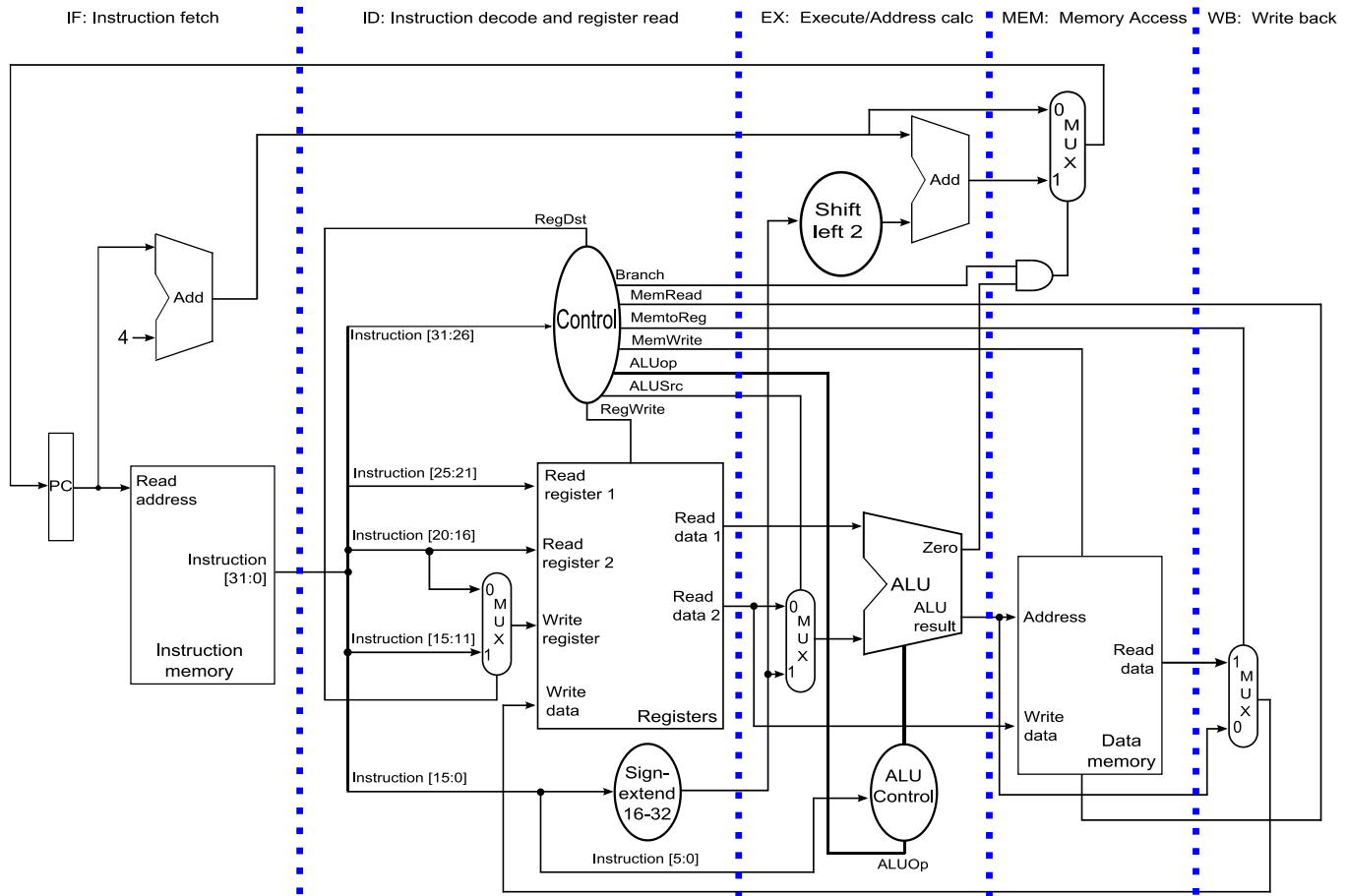
Specifications of supported MIPS assembly instructions:

```

add  $rd, $rs, $rt          # GPR[rd] = GPR[rs] + GPR[rt]
sub  $rd, $rs, $rt          # GPR[rd] = GPR[rs] - GPR[rt]
and  $rd, $rs, $rt          # GPR[rd] = GPR[rs] & GPR[rt]
or   $rd, $rs, $rt          # GPR[rd] = GPR[rs] | GPR[rt]
slt  $rd, $rs, $rt          # GPR[rd] = GPR[rs] < GPR[rt] ? 1 : 0

```

The preliminary pipelined MIPS32 datapath:



Specification of an included MIPS pseudo-instructions:

```
blt  $rs, $rt, label      # conditional branch if rs < rt
                             # PC <-- (rs < rt ? PC + 4 + offset << 2)
                             #                               : PC + 4)
```

```
bgt  $rs, $rt, label      # conditional branch if rs > rt
                             # PC <-- (rs > rt ? PC + 4 + offset << 2)
                             #                               : PC + 4)
```