

1. Which part of the module in simple-single-CPU is redundant? Can you design a new instruction to use this module?

The overflow output of ALU module is redundant, a new instruction bov(branch on overflow) can use the overflow part of ALU module.

2. Which instruction is redundant and why?

bnez is redundant, it can be replaced with bne.

bnez rs, 0, imm is equal to bne rs, \$0, imm