memcpy (8 instructions)

LUI - set (singed) rd value to sign-extended immediate.

ADDI - set (singed) rd value to rs1 value add immediate.

SW - set word at memory address immediate add rs1 value to rs2 value.

JAL - set pc to immediate add old pc. set rd value to old pc add sizeof instruction. return INST\_PC\_SET.

LBU - set rd value to byte at memory address immediate add rs1 value.

SB - set byte at memory address immediate add rs1 value to rs2 value.

BNE - if rs1 value not equal rs2 value, set pc to old pc add immediate. return INST\_PC\_SET.

SBREAK - return INST\_EXIT

concpy (2 instructions)

ADD - set (signed) rd value to rs1 value add rs2 value

AND - set (signed) rd value to rs1 value AND rs2 value

func (16 instructions)

AUIPC - set (signed) rd value to (signed) old pc add immediate

SD - set double at memory address immediate add rs1 value to rs2 value.

BLTU - if rs1 value less than rs2 value, set pc to (singed) old pc add immediate

LD - set rd value to double from memory address imm add rs1 value

BEQ - if rs1 value equal to rs2 value, set pc to (singed) old pc add immediate. return INST\_PC\_SET.

LW - set (signed) rd value to word at memory address immediate plus rs1 value. sign cast word before extend.

ADDIW - set rd register to (signed) rs1 value add immediate

BGE - if (singed) rs1 value greater-or-equals (singed) rs2 value, set pc to (signed) old pc add immediate. return INST\_PC\_SET.

SLLI\_RV64I - set rd value to rs1 value shifted by lower 6 bits of immediate (mask 0x3F)

JALR - set pc to rs1 value add immediate (+clear lowest bit). Set rd value to old pc + instruction size

SUB - set signed rd value to rs1 value minus rs2 value

SRAI\_RV64I - set (signed) rd value to rs1 value arithmetic right shifted by lower 6 bits of immediate (mask 0x3F)

SRLI\_RV64I - set rd value to rs1 value logical right shifted by lower 6 bits of immediate (mask 0x3F)

SUBW - set (signed) rd value to rs1 value minus rs2 value

SLLW - set (signed) rd value to rs1 value left shifted by lower 5 bits of immediate (mask 0x1F)

BGEU - if rs1 value greater-or-equals rs2 value, set pc to (signed) old pc add immediate. return INST\_PC\_SET.

printf (15 instructions)

ANDI - set rd value to rs1 value anded with immediate

OR - set rd value to rs1 value OR rs2 value

LH - set rd value to halfword at memory address immediate add rs1 value. sign cast doubleword before extend.

BLT - if (signed) rs1 value less than (singed) rs2 value, set pc to (signed) old pc add immediate. return INST\_PC\_SET.

SH - Set halfword at memory address immediate plus rs1 value to rs2 value

LHU - set rd value to halfword value at memory address immediate plus immediate.

ADDW - set rd value to sum of rs1 value add rs2 value.

SLTIU - if sign extend immediate greater than rs1 value (unsigned compare) set rd value to 1, else set rd value to 0

XORI - set rd value to rs1 value XOR sign-extended immediate

SLLIW - set (signed) rd value to rs1 value left shifted by lower 5 bits of immediate (mask 0x1F)

SRAIW - set (signed) rd value to rs1 value arithmetically right shifted by lower 5 bits of immediate (mask 0x1F)

SLL - set (signed) rd value to rs1 value left shifted by lower 5 bits of rs2 value (mask 0x1F)

ORI - set rd value to rs1 value OR immediate

XOR - set rd value to rs1 value XOR rs2 value

STLU - if rs2 value greater than rs1 value (unsigned compare) set rd value to 1, else set rd value to 0

Total: 41 instructions