Control Unit

opcode

jumpop
aluop
op1_src
op2_src
arth_type
inst_length
memop
writeback_src
validinst

7 bits [6, 0]

JumpDetection

jumpop   pc_plus_offset
                op1_plus_offset
funct3
operand1
operand2   taken

JumpPcGen

pc
offset   jumppc
op1
pc_plus_offset
op1_plus_offset

Immediate Gen

instruction sextImm

ALU Control

arth_type
inst_length
aluop   operation
funct7
funct3

Data Memory

address   readdata
memread
memwrite
valid
maskmode
sext
writedata

ALU

operation   result
operand1
operand2

PC

Inst Memory

address instruction

64 bits

32 bits

Register File

readreg1   readdata1
readreg2   readdata2
writereg
wen
writedata

Pipelined DINO CPU