--------------------------------------------------------------------------------

addi zero, zero, 0

Time: 10

instruction: 00000000000000000000000000010011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 0

read\_sel2: 0

write\_sel: 0

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 1

ALU\_Control: 000000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

addi a1, zero, -1

Time: 20

instruction: 11111111111100000000010110010011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0003

read\_sel1: 0

read\_sel2: 31

write\_sel: 11

wEn: 1

branch\_op: 0

imm32: 11111111111111111111111111111111

op\_A\_sel: 00

op\_B\_sel: 1

ALU\_Control: 000000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

add a6, a1, a2

Time: 30

instruction: 00000000110001011000100000110011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 11

read\_sel2: 12

write\_sel: 16

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 0

ALU\_Control: 000000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

sub a7, a2, a4

Time: 40

instruction: 01000000111001100000100010110011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 12

read\_sel2: 14

write\_sel: 17

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 0

ALU\_Control: 001000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

slt a0, a1, a5

Time: 50

instruction: 00000000111101011010010100110011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 11

read\_sel2: 15

write\_sel: 10

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 0

ALU\_Control: 000010

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

xor a4, a1, a5

Time: 60

instruction: 00000000111101011100011100110011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 11

read\_sel2: 15

write\_sel: 14

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 0

ALU\_Control: 000100

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

and a3, a3, a1

Time: 70

instruction: 00000000101101101111011010110011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 13

read\_sel2: 11

write\_sel: 13

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 0

ALU\_Control: 000111

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

addi a1, zero, 1536

Time: 80

instruction: 01100000000000000000010110010011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0604

read\_sel1: 0

read\_sel2: 0

write\_sel: 11

wEn: 1

branch\_op: 0

imm32: 00000000000000000000011000000000

op\_A\_sel: 00

op\_B\_sel: 1

ALU\_Control: 000000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

sw a2, 0(a1)

Time: 90

instruction: 00000000110001011010000000100011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 11

read\_sel2: 12

write\_sel: 0

wEn: 0

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 1

ALU\_Control: 000000

mem\_wEn: 1

wb\_sel: 0

--------------------------------------------------------------------------------

lw s2, 0(a1)

Time: 100

instruction: 00000000000001011010100100000011

PC: 0000

JALR\_target: 0000

branch 0

next\_PC\_sel 0

target\_PC 0004

read\_sel1: 11

read\_sel2: 0

write\_sel: 18

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000000000

op\_A\_sel: 00

op\_B\_sel: 1

ALU\_Control: 000000

mem\_wEn: 0

wb\_sel: 1

--------------------------------------------------------------------------------

jal zero,128

Time: 110

instruction: 00000001010000000000000001101111

PC: 0114

JALR\_target: 0000

branch 0

next\_PC\_sel 1

target\_PC 012c

read\_sel1: 0

read\_sel2: 20

write\_sel: 0

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000000010100

op\_A\_sel: 10

op\_B\_sel: 1

ALU\_Control: 011111

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

jalr ra,196(ra)

Time: 120

instruction: 00001100010000001000000011100111

PC: 0094

JALR\_target: 0154

branch 0

next\_PC\_sel 1

target\_PC 0154

read\_sel1: 1

read\_sel2: 4

write\_sel: 1

wEn: 1

branch\_op: 0

imm32: 00000000000000000000000011000100

op\_A\_sel: 10

op\_B\_sel: 1

ALU\_Control: 111111

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

BEQ x1, x2

Time: 130

instruction: 00000000001000001000100001100011

PC: 0004

JALR\_target: 0154

branch 0

next\_PC\_sel 0

target\_PC 0014

read\_sel1: 1

read\_sel2: 2

write\_sel: 16

wEn: 0

branch\_op: 1

imm32: 00000000000000000000000000010000

op\_A\_sel: 00

op\_B\_sel: 0

ALU\_Control: 010000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

BEQ x1, x2 - taken

Time: 140

instruction: 00000000001000001000100001100011

PC: 0008

JALR\_target: 0154

branch 1

next\_PC\_sel 1

target\_PC 0018

read\_sel1: 1

read\_sel2: 2

write\_sel: 16

wEn: 0

branch\_op: 1

imm32: 00000000000000000000000000010000

op\_A\_sel: 00

op\_B\_sel: 0

ALU\_Control: 010000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

LUI rd, DEADB

Time: 150

instruction: 11011110101011011011000110110111

PC: 0000

JALR\_target: 0154

branch 0

next\_PC\_sel 0

target\_PC b004

read\_sel1: 0

read\_sel2: 10

write\_sel: 3

wEn: 1

branch\_op: 0

imm32: 11011110101011011011000000000000

op\_A\_sel: 00

op\_B\_sel: 1

ALU\_Control: 000000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------

AUIPC rd, DEADB (Note PC = 0004 to begin

Time: 160

instruction: 11011110101011011011000110010111

PC: 0004

JALR\_target: 0154

branch 0

next\_PC\_sel 0

target\_PC b008

read\_sel1: 27

read\_sel2: 10

write\_sel: 3

wEn: 1

branch\_op: 0

imm32: 11011110101011011011000000000000

op\_A\_sel: 01

op\_B\_sel: 1

ALU\_Control: 000000

mem\_wEn: 0

wb\_sel: 0

--------------------------------------------------------------------------------