

EECS 2021E

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Lab C

## Question2:

A>B:

RVS (RISC-V Visual Simulator) v0.39

File | Name: C:/Users/Owner/Desktop/LabC2.a | Help

```
ORG 96
DD -1,-2

addi x1,x0,5
ecall x2,x0,5
ld x5,0(x0)
ld x6,8(x0)

blt x2,x1,a
blt x1,x2,b
addi x5,x0,0
addi x6,x0,0
beq x0,x0,Exit

Exit:
a:
addi x5,x0,1
addi x6,x0,2
```

Compile ☒ BIN ☒ HEX ☒ INT ☒ TXT

Source | IntPC | 0x000000000000ac | START | Stop | Run | Next | ☒ TXT | Listing

REG	VALUE	HEX	INT
x0	zero	0x0000000000000000	0
x1	ra	0x0000000000000005	5
x2	sp	0x0000000000000004	4
x3	gp	0x0000000000000000	0
x4	tp	0x0000000000000000	0
x5	t0	0x0000000000000001	1
x6	t1	0x0000000000000002	2
x7	t2	0x0000000000000000	0
x8	0	0x0000000000000000	0
x9	s1	0x0000000000000000	0
x10	a0	0x0000000000000000	0
x11	a1	0x0000000000000000	0
x12	a2	0x0000000000000000	0
x13	a3	0x0000000000000000	0
x14	a4	0x0000000000000000	0
x15	a5	0x0000000000000000	0
x16	a6	0x0000000000000000	0
x17	a7	0x0000000000000000	0
x18	a8	0x0000000000000000	0
x19	a9	0x0000000000000000	0
x20	a10	0x0000000000000000	0

MEMORY

ADDRESS	HEX	INT
0x0000000000000060	0xffffffffffffff	-1
0x0000000000000068	0xffffffffffffff	-2

START

```
0x0000000000000070: addi x1 x0 0x005 adc
0x0000000000000074: ecall x2 x0 0x005 ecd
0x0000000000000078: ld x5 x0 0x000 ld
0x000000000000007c: ld x6 x0 0x008 ld
0x0000000000000080: blt x2 x1 0x00a blt
0x0000000000000084: addi x5 x0 0x001 adc
0x0000000000000088: addi x6 x0 0x002 adc
0x000000000000008c: beq x0 x0 0x008 beq
0x00000000000000ac: NO INSTRUCTION
```

74 0x0000000000000004

Clear ☐ OUT

Refresh ☒ HEX ☒ INT ☒ FLP | Regs | Refresh ☒ HEX ☒ INT ☒ FLP ☒ TXT | Memory | Clear | Execution | Cancel | Enter | INP

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A<B:

RVS (RISC-V Visual Simulator) v0.39

File: C:\Users\Owner\Desktop\LabC2.a

ORG 96  
DD -1,-2  
addi x1,x0,5//A  
ecall x2,x0,5  
ld x5,0(x0)  
ld x6,0(x0)  
blt x2,x1,a  
blt x1,x2,b  
addi x5,x0,0  
addi x6,x0,0  
beq x0,x0,Exit  
Exit:  
a:  
addi x5,x0,1  
addi x6,x0,2

0x0000000000000080 SB 00000000 00001 00010 100 01010 1100011 blt x2 x1 0x00a blt  
0x0000000000000084 SB 00000000 00010 00001 100 01110 1100011 blt x1 x2 0x00e blt  
0x0000000000000088 I 000000000000 00000 000 00101 0010011 addi x5 x0 0x000 addi  
0x000000000000008c I 000000000000 00000 000 00110 0010011 addi x6 x0 0x000 addi  
0x0000000000000090 SB 00000000 00000 000 01110 1100011 beq x0 x0 0x00e beq  
0x0000000000000094 I 000000000001 00000 000 00101 0010011 addi x5 x0 0x001 addi  
0x0000000000000098 I 000000000010 00000 000 00110 0010011 addi x6 x0 0x002 addi  
0x000000000000009c SB 00000000 00000 000 01000 1100011 beq x0 x0 0x008 beq  
0x00000000000000a0 I 0000000000101 00000 000 00101 0010011 addi x5 x0 0x005 addi  
0x00000000000000a4 I 0000000000101 00000 000 00110 0010011 addi x6 x0 0x005 addi  
0x00000000000000a8 SB 00000000 00000 000 00010 1100011 beq x0 x0 0x002 beq

SYMBOL TABLE  
0x00000000000000ac Exit  
0x0000000000000070 START  
0x0000000000000094 a  
0x00000000000000a0 b

Compile ☒ BIN ☒ HEX ☒ INT ☒ TXT Source InitPC 0x00000000000000ac START Stop Run Next ☒ TXT Listing

REGS: x0 zero 0x0000000000000000 0, x1 ra 0x0000000000000005 5, x2 sp 0x0000000000000006 6, x3 gp 0x0000000000000000 0, x4 tp 0x0000000000000000 0, x5 t0 0x0000000000000005 5, x6 t1 0x0000000000000005 5, x7 t2 0x0000000000000000 0, x8 s0 0x0000000000000000 0, x9 s1 0x0000000000000000 0, x10 a0 0x0000000000000000 0, x11 a1 0x0000000000000000 0, x12 a2 0x0000000000000000 0, x13 a3 0x0000000000000000 0, x14 a4 0x0000000000000000 0, x15 a5 0x0000000000000000 0, x16 a6 0x0000000000000000 0, x17 a7 0x0000000000000000 0, x18 s2 0x0000000000000000 0, x19 s3 0x0000000000000000 0, x20 s4 0x0000000000000000 0

MEMORY: ADDRESS HEXADECIMAL INTEGER  
0x0000000000000060 0xffffffffffff -1  
0x0000000000000068 0xffffffffffff -2

START: 0x0000000000000070 addi x1 x0 0x005 adc, 0x0000000000000074 ecall x2 x0 0x005 ecr, 0x0000000000000078 ld x5 x0 0x000 ld, 0x000000000000007c ld x6 x0 0x008 ld, 0x0000000000000080 blt x2 x1 0x00a blt, 0x0000000000000084 blt x1 x2 0x00e blt, 0x00000000000000a0 addi x5 x0 0x005 adc, 0x00000000000000a4 addi x6 x0 0x005 adc, 0x00000000000000a8 beq x0 x0 0x002 beq, 0x00000000000000ac: NO INSTRUCTION

76 0x0000000000000006

Clear OUT

Refresh ☒ HEX ☒ INT ☒ FLP Regs Refresh ☒ HEX ☒ INT ☒ FLP ☒ TXT Memory Clear Execution Cancel Enter INP

A=5:

RVS (RISC-V Visual Simulator) v0.39

File: C:\Users\Owner\Desktop\LabC2.a

ORG 96  
DD -1,-2  
addi x1,x0,5//A  
ecall x2,x0,5  
ld x5,0(x0)  
ld x6,0(x0)  
blt x2,x1,a  
blt x1,x2,b  
addi x5,x0,0  
addi x6,x0,0  
beq x0,x0,Exit  
Exit:  
a:  
addi x5,x0,1  
addi x6,x0,2

0x0000000000000080 SB 00000000 00001 00010 100 01010 1100011 blt x2 x1 0x00a blt  
0x0000000000000084 SB 00000000 00010 00001 100 01110 1100011 blt x1 x2 0x00e blt  
0x0000000000000088 I 000000000000 00000 000 00101 0010011 addi x5 x0 0x000 addi  
0x000000000000008c I 000000000000 00000 000 00110 0010011 addi x6 x0 0x000 addi  
0x0000000000000090 SB 00000000 00000 000 01110 1100011 beq x0 x0 0x00e beq  
0x0000000000000094 I 000000000001 00000 000 00101 0010011 addi x5 x0 0x001 addi  
0x0000000000000098 I 000000000010 00000 000 00110 0010011 addi x6 x0 0x002 addi  
0x000000000000009c SB 00000000 00000 000 01000 1100011 beq x0 x0 0x008 beq  
0x00000000000000a0 I 0000000000101 00000 000 00101 0010011 addi x5 x0 0x005 addi  
0x00000000000000a4 I 0000000000101 00000 000 00110 0010011 addi x6 x0 0x005 addi  
0x00000000000000a8 SB 00000000 00000 000 00010 1100011 beq x0 x0 0x002 beq

SYMBOL TABLE  
0x00000000000000ac Exit  
0x0000000000000070 START  
0x0000000000000094 a  
0x00000000000000a0 b

Compile ☒ BIN ☒ HEX ☒ INT ☒ TXT Source InitPC 0x00000000000000ac START Stop Run Next ☒ TXT Listing

REGS: x0 zero 0x0000000000000000 0, x1 ra 0x0000000000000005 5, x2 sp 0x0000000000000006 6, x3 gp 0x0000000000000000 0, x4 tp 0x0000000000000000 0, x5 t0 0x0000000000000005 5, x6 t1 0x0000000000000005 5, x7 t2 0x0000000000000000 0, x8 s0 0x0000000000000000 0, x9 s1 0x0000000000000000 0, x10 a0 0x0000000000000000 0, x11 a1 0x0000000000000000 0, x12 a2 0x0000000000000000 0, x13 a3 0x0000000000000000 0, x14 a4 0x0000000000000000 0, x15 a5 0x0000000000000000 0, x16 a6 0x0000000000000000 0, x17 a7 0x0000000000000000 0, x18 s2 0x0000000000000000 0, x19 s3 0x0000000000000000 0, x20 s4 0x0000000000000000 0

MEMORY: ADDRESS HEXADECIMAL INTEGER  
0x0000000000000060 0xffffffffffff -1  
0x0000000000000068 0xffffffffffff -2

START: 0x0000000000000070 addi x1 x0 0x005 adc, 0x0000000000000074 ecall x2 x0 0x005 ecr, 0x0000000000000078 ld x5 x0 0x000 ld, 0x000000000000007c ld x6 x0 0x008 ld, 0x0000000000000080 blt x2 x1 0x00a blt, 0x0000000000000084 blt x1 x2 0x00e blt, 0x00000000000000a0 addi x5 x0 0x005 adc, 0x00000000000000a4 addi x6 x0 0x005 adc, 0x00000000000000a8 beq x0 x0 0x002 beq, 0x00000000000000ac: NO INSTRUCTION

76 0x0000000000000005

Clear OUT

Refresh ☒ HEX ☒ INT ☒ FLP Regs Refresh ☒ HEX ☒ INT ☒ FLP ☒ TXT Memory Clear Execution Cancel Enter INP

### Question3:

A>B && C=5

RVS (RISC-V Visual Simulator) v0.39

File: C:/Users/Owner/Desktop/LabC3.a

```
addi x1,x0,0
addi x2,x0,0
ecall x3,x0,5
ecall x4,x0,5
ecall x5,x0,5
addi x6,x0,5

blt x4,x3,A
beq x0,x0,Else
A:
beq x5,x6,B
beq x0,x0,Else
B:
addi x1,x0,1
addi x2,x0,2
beq x0,x0,Exit
```

0x0000000000000014 I 000000000101 00000 000 00110 0010011 addi x6 x0 0x005 addi  
0x0000000000000018 SB 00000000 00011 00100 100 00100 1100011 blt x4 x3 0x004 blt  
0x000000000000001c SB 00000000 00000 00000 000 01100 1100011 beq x0 x0 0x00c beq  
0x0000000000000020 SB 00000000 00110 00101 000 00100 1100011 beq x5 x6 0x004 beq  
0x0000000000000024 SB 00000000 00000 00000 000 01000 1100011 beq x0 x0 0x008 beq  
0x0000000000000028 I 000000000001 00000 000 00001 0010011 addi x1 x0 0x001 addi  
0x000000000000002c I 000000000010 00000 000 00010 0010011 addi x2 x0 0x002 addi  
0x0000000000000030 SB 00000000 00000 000 00110 1100011 beq x0 x0 0x006 beq  
0x0000000000000034 I 000000000000 00000 000 00001 0010011 addi x1 x0 0x000 addi  
0x0000000000000038 I 000000000000 00000 000 00010 0010011 addi x2 x0 0x000 addi

SYMBOL TABLE  
0x0000000000000020 A  
0x0000000000000028 B  
0x0000000000000034 Else  
0x000000000000003c Exit  
0x0000000000000000 START

Compile ☒ BIN ☒ HEX ☒ INT ☒ TXT Source IntPC 0x000000000000003c START Stop Run Next ☒ TXT Listing

Reg	Address	HEX	INTEGER
x0 zero	0x0000000000000000	0	
x1 ra	0x0000000000000001	1	
x2 sp	0x0000000000000002	2	
x3 gp	0x0000000000000007	7	
x4 tp	0x0000000000000006	6	
x5 t0	0x0000000000000005	5	
x6 t1	0x0000000000000005	5	
x7 t2	0x0000000000000000	0	
x8 t3	0x0000000000000000	0	
x9 t4	0x0000000000000000	0	
x10 a0	0x0000000000000000	0	
x11 a1	0x0000000000000000	0	
x12 a2	0x0000000000000000	0	
x13 a3	0x0000000000000000	0	
x14 a4	0x0000000000000000	0	
x15 a5	0x0000000000000000	0	
x16 a6	0x0000000000000000	0	
x17 a7	0x0000000000000000	0	
x18 s2	0x0000000000000000	0	
x19 s3	0x0000000000000000	0	
x20 s4	0x0000000000000000	0	

START  
0x0000000000000000 addi x1 x0 0x000 adc  
0x0000000000000004 addi x2 x0 0x000 adc  
0x0000000000000008 ecall x3 x0 0x005 ecr  
0x000000000000000c ecall x4 x0 0x005 ecr  
0x0000000000000010 ecall x5 x0 0x005 ecr  
0x0000000000000014 addi x6 x0 0x005 adc  
0x0000000000000018 blt x4 x3 0x004 blt  
0x0000000000000020 beq x5 x6 0x004 bec  
0x0000000000000028 addi x1 x0 0x001 adc  
0x000000000000002c addi x2 x0 0x002 adc  
0x0000000000000030 beq x0 x0 0x006 bec  
0x000000000000003c: NO INSTRUCTION

77 0x0000000000000007  
76 0x0000000000000006  
75 0x0000000000000005

Clear OUT

Refresh ☒ HEX ☒ INT ☒ FLP ☒ TXT Memory Clear Execution Cancel Enter INP

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A<B&&C=5

RVS (RISC-V Visual Simulator) v0.39

File Edit View Help

Filename: C:/Users/Owner/Desktop/LabC3.a

```
addi x1,x0,0
addi x2,x0,0
ecall x3,x0,5
ecall x4,x0,5
ecall x5,x0,5
addi x6,x0,5

blt x4,x3,A
beq x0,x0,Else
A:
beq x5,x6,B
beq x0,x0,Else
B:
addi x1,x0,1
addi x2,x0,2
beq x0,x0,Exit
```

0x0000000000000014 I 000000000101 00000 000 00110 0010011 addi x6 x0 0x005 addi  
0x0000000000000018 SB 0000000 00011 00100 100 00100 1100011 blt x4 x3 0x004 blt  
0x000000000000001c SB 0000000 00000 00000 000 01100 1100011 beq x0 x0 0x00c beq  
0x0000000000000020 SB 0000000 00110 00101 000 00100 1100011 beq x5 x6 0x004 beq  
0x0000000000000024 SB 0000000 00000 00000 000 01000 1100011 beq x0 x0 0x008 beq  
0x0000000000000028 I 000000000001 00000 000 00001 0010011 addi x1 x0 0x001 addi  
0x000000000000002c I 000000000010 00000 000 00010 0010011 addi x2 x0 0x002 addi  
0x0000000000000030 SB 0000000 00000 00000 000 00110 1100011 beq x0 x0 0x006 beq  
0x0000000000000034 I 000000000000 00000 000 00001 0010011 addi x1 x0 0x000 addi  
0x0000000000000038 I 000000000000 00000 000 00010 0010011 addi x2 x0 0x000 addi

SYMBOL TABLE  
0x0000000000000020 A  
0x0000000000000028 B  
0x0000000000000034 Else  
0x000000000000003c Exit  
0x0000000000000000 START

Compile ☒ BIN ☒ HEX ☒ INT ☒ TXT Source InitPC 0x000000000000003c START Stop Run Next ☒ TXT Listing

REG	NAME	VALUE	HEX	INT
x0	zero	0x0000000000000000	0	0
x1	ra	0x0000000000000000	0	0
x2	sp	0x0000000000000000	0	0
x3	gp	0x0000000000000006	6	6
x4	tp	0x0000000000000007	7	7
x5	t0	0x0000000000000005	5	5
x6	t1	0x0000000000000005	5	5
x7	t2	0x0000000000000000	0	0
x8	s0	0x0000000000000000	0	0
x9	s1	0x0000000000000000	0	0
x10	s2	0x0000000000000000	0	0
x11	s3	0x0000000000000000	0	0
x12	a0	0x0000000000000000	0	0
x13	a1	0x0000000000000000	0	0
x14	a2	0x0000000000000000	0	0
x15	a3	0x0000000000000000	0	0
x16	a4	0x0000000000000000	0	0
x17	a5	0x0000000000000000	0	0
x18	a6	0x0000000000000000	0	0
x19	a7	0x0000000000000000	0	0
x20	a8	0x0000000000000000	0	0

START  
0x0000000000000000 addi x1 x0 0x000 adc 76  
0x0000000000000004 addi x2 x0 0x000 adc 77  
0x0000000000000008 ecall x3 x0 0x005 ecr 78  
0x000000000000000c ecall x4 x0 0x005 ecr 79  
0x0000000000000010 ecall x5 x0 0x005 ecr 80  
0x0000000000000014 addi x6 x0 0x005 adc 81  
0x0000000000000018 blt x4 x3 0x004 blt 82  
0x000000000000001c beq x0 x0 0x00c beq 83  
0x0000000000000020 addi x1 x0 0x001 addi 84  
0x0000000000000024 addi x2 x0 0x002 addi 85  
0x0000000000000028 NO INSTRUCTION

Refresh ☒ HEX ☒ INT ☒ FLP Regs Refresh ☒ HEX ☒ INT ☒ FLP ☒ TXT Memory Clear Execution Cancel Enter INP

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