

WARNING: ./ROM.v:11: \$readmemb(instruction_memory.txt): Not enough words in the file for the requested range [0:255].

Current Time Unit = 0

```
Ins. =          xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Front_q =      x
ID_STAGE:      SRD = xx  PSW_RE_LE = xx  B = x  SOH_OP = xxx  ALU_OP = xxxx  RAM_CTRL = xxxx
L = x  RF_LE = x  ID_SR = xx  UB = x  SHF = x
EX_STAGE:      SRD = xx  PSW_RE_LE = xx  B = x  SOH_OP = xxx  ALU_OP = xxxx  RAM_CTRL = xxxx
L = x  RF_LE = x  ID_SR = xx  UB = x  SHF = x
MEM_STAGE:     RAM_CTRL = xxxx  L = x  RF_LE = x
WB_STAGE:      RF_LE = x
```

Current Time Unit = 2

```
Ins. =          NOP 00000000000000000000000000000000
Front_q =      0
ID_STAGE:      SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
EX_STAGE:      SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
MEM_STAGE:     RAM_CTRL = 0000  L = 0  RF_LE = 0
WB_STAGE:      RF_LE = 0
```

Current Time Unit = 6

```
Ins. =          ADDI 10110100101001000000000000000000
Front_q =      4
ID_STAGE:      SRD = 10  PSW_RE_LE = 01  B = 0  SOH_OP = 001  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 1  ID_SR = 01  UB = 0  SHF = 0
EX_STAGE:      SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
MEM_STAGE:     RAM_CTRL = 0000  L = 0  RF_LE = 0
WB_STAGE:      RF_LE = 0
```

Current Time Unit = 10

```
Ins. =          SUB 000010000110000000000010000000011
Front_q =      8
ID_STAGE:      SRD = 00  PSW_RE_LE = 01  B = 0  SOH_OP = 000  ALU_OP = 0010  RAM_CTRL = 0000
L = 0  RF_LE = 1  ID_SR = 11  UB = 0  SHF = 0
EX_STAGE:      SRD = 10  PSW_RE_LE = 01  B = 0  SOH_OP = 001  ALU_OP = 0000  RAM_CTRL = 0000
```

L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 0
WB_STAGE: RF_LE = 0

Current Time Unit = 14

Ins. = LDB 01000000001001010000000000001100
Front_q = 12
ID_STAGE: SRD = 10 PSW_RE_LE = 00 B = 0 SOH_OP = 010 ALU_OP = 0000 RAM_CTRL = 0001
L = 1 RF_LE = 1 ID_SR = 10 UB = 0 SHF = 0
EX_STAGE: SRD = 00 PSW_RE_LE = 01 B = 0 SOH_OP = 000 ALU_OP = 0010 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 11 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 1
WB_STAGE: RF_LE = 0

Current Time Unit = 18

Ins. = STH 01100100001000100000000000000000
Front_q = 16
ID_STAGE: SRD = 11 PSW_RE_LE = 00 B = 0 SOH_OP = 010 ALU_OP = 0000 RAM_CTRL = 0111
L = 0 RF_LE = 0 ID_SR = 11 UB = 0 SHF = 0
EX_STAGE: SRD = 10 PSW_RE_LE = 00 B = 0 SOH_OP = 010 ALU_OP = 0000 RAM_CTRL = 0001
L = 1 RF_LE = 1 ID_SR = 10 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 1
WB_STAGE: RF_LE = 1

Current Time Unit = 22

Ins. = COMBT 10000000011111000001110111111001
Front_q = 20
ID_STAGE: SRD = 11 PSW_RE_LE = 00 B = 1 SOH_OP = 000 ALU_OP = 0010 RAM_CTRL = 0000
L = 0 RF_LE = 0 ID_SR = 11 UB = 0 SHF = 0
EX_STAGE: SRD = 11 PSW_RE_LE = 00 B = 0 SOH_OP = 010 ALU_OP = 0000 RAM_CTRL = 0111
L = 0 RF_LE = 0 ID_SR = 11 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0001 L = 1 RF_LE = 1
WB_STAGE: RF_LE = 1

Current Time Unit = 26

Ins. = LDIL 0010000111100000001111100001010
Front_q = 24
ID_STAGE: SRD = 01 PSW_RE_LE = 00 B = 0 SOH_OP = 011 ALU_OP = 1010 RAM_CTRL = 0000

```

L = 0 RF_LE = 1 ID_SR = 00 UB = 0 SHF = 0
EX_STAGE: SRD = 11 PSW_RE_LE = 00 B = 1 SOH_OP = 000 ALU_OP = 0010 RAM_CTRL = 0000
L = 0 RF_LE = 0 ID_SR = 11 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0111 L = 0 RF_LE = 0
WB_STAGE: RF_LE = 1

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Current Time Unit = 30

```

Ins. = BL 111010101000000000000000010000
Front_q = 28
ID_STAGE: SRD = 01 PSW_RE_LE = 00 B = 1 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 00 UB = 1 SHF = 0
EX_STAGE: SRD = 01 PSW_RE_LE = 00 B = 0 SOH_OP = 011 ALU_OP = 1010 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 00 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 0
WB_STAGE: RF_LE = 0

```

Current Time Unit = 34

```

Ins. = EXTRS 11010011111011000001110111100101
Front_q = 32
ID_STAGE: SRD = 10 PSW_RE_LE = 00 B = 0 SOH_OP = 101 ALU_OP = 1010 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 1
EX_STAGE: SRD = 01 PSW_RE_LE = 00 B = 1 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 00 UB = 1 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 1
WB_STAGE: RF_LE = 0

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Current Time Unit = 38

```

Ins. = NOP 00000000000000000000000000000000
Front_q = 36
ID_STAGE: SRD = 00 PSW_RE_LE = 00 B = 0 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 0 ID_SR = 00 UB = 0 SHF = 0
EX_STAGE: SRD = 10 PSW_RE_LE = 00 B = 0 SOH_OP = 101 ALU_OP = 1010 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 1
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 1
WB_STAGE: RF_LE = 1

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Current Time Unit = 42

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Ins. = NOP 00000000000000000000000000000000

```

```

Front_q = 40
ID_STAGE: SRD = 00 PSW_RE_LE = 00 B = 0 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 0 ID_SR = 00 UB = 0 SHF = 0
EX_STAGE: SRD = 00 PSW_RE_LE = 00 B = 0 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 0 ID_SR = 00 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 1
WB_STAGE: RF_LE = 1

```

Current Time Unit = 46

```

Ins. = ADDI 10110100101001000000000000000000
Front_q = 44
ID_STAGE: SRD = 10 PSW_RE_LE = 01 B = 0 SOH_OP = 001 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 0
EX_STAGE: SRD = 00 PSW_RE_LE = 00 B = 0 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 0 ID_SR = 00 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 0
WB_STAGE: RF_LE = 1

```

Current Time Unit = 50

```

Ins. = ADDI 10110100101001000000000000000000
Front_q = 44
ID_STAGE: SRD = 10 PSW_RE_LE = 01 B = 0 SOH_OP = 001 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 0
EX_STAGE: SRD = 10 PSW_RE_LE = 01 B = 0 SOH_OP = 001 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 0
WB_STAGE: RF_LE = 0

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Current Time Unit = 54

```

Ins. = ADDI 10110100101001000000000000000000
Front_q = 44
ID_STAGE: SRD = 10 PSW_RE_LE = 01 B = 0 SOH_OP = 001 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 0
EX_STAGE: SRD = 10 PSW_RE_LE = 01 B = 0 SOH_OP = 001 ALU_OP = 0000 RAM_CTRL = 0000
L = 0 RF_LE = 1 ID_SR = 01 UB = 0 SHF = 0
MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 1
WB_STAGE: RF_LE = 0

```

Current Time Unit = 58

```
Ins. =      ADDI 10110100101001000000000000000000
Front_q = 44
ID_STAGE:   SRD = 10  PSW_RE_LE = 01  B = 0  SOH_OP = 001  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 1  ID_SR = 01  UB = 0  SHF = 0
EX_STAGE:   SRD = 10  PSW_RE_LE = 01  B = 0  SOH_OP = 001  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 1  ID_SR = 01  UB = 0  SHF = 0
MEM_STAGE:  RAM_CTRL = 0000  L = 0  RF_LE = 1
WB_STAGE:   RF_LE = 1
```

Current Time Unit = 60

```
Ins. =      ADDI 10110100101001000000000000000000
Front_q = 44
ID_STAGE:   SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
EX_STAGE:   SRD = 10  PSW_RE_LE = 01  B = 0  SOH_OP = 001  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 1  ID_SR = 01  UB = 0  SHF = 0
MEM_STAGE:  RAM_CTRL = 0000  L = 0  RF_LE = 1
WB_STAGE:   RF_LE = 1
```

Current Time Unit = 62

```
Ins. =      ADDI 10110100101001000000000000000000
Front_q = 44
ID_STAGE:   SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
EX_STAGE:   SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
MEM_STAGE:  RAM_CTRL = 0000  L = 0  RF_LE = 1
WB_STAGE:   RF_LE = 1
```

Current Time Unit = 66

```
Ins. =      ADDI 10110100101001000000000000000000
Front_q = 44
ID_STAGE:   SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
EX_STAGE:   SRD = 00  PSW_RE_LE = 00  B = 0  SOH_OP = 000  ALU_OP = 0000  RAM_CTRL = 0000
L = 0  RF_LE = 0  ID_SR = 00  UB = 0  SHF = 0
MEM_STAGE:  RAM_CTRL = 0000  L = 0  RF_LE = 0
```

WB_STAGE: RF_LE = 1

Current Time Unit = 70

Ins. = ADDI 10110100101001000000000000000000

Front_q = 44

ID_STAGE: SRD = 00 PSW_RE_LE = 00 B = 0 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000

L = 0 RF_LE = 0 ID_SR = 00 UB = 0 SHF = 0

EX_STAGE: SRD = 00 PSW_RE_LE = 00 B = 0 SOH_OP = 000 ALU_OP = 0000 RAM_CTRL = 0000

L = 0 RF_LE = 0 ID_SR = 00 UB = 0 SHF = 0

MEM_STAGE: RAM_CTRL = 0000 L = 0 RF_LE = 0

WB_STAGE: RF_LE = 0

./CPU_TEST.v:111: \$finish called at 260 (1s)