```
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. =           xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                  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 = z 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 = z 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 = z SHF = 0
                  MEM_STAGE:   RAM_CTRL = 0000  L = 0   RF_LE = 0
                  WB_STAGE:    RF_LE = 0

Current Time Unit = 10
                  Ins. =       SUB 00001000011000000000010000000011
                  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 = z 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 = z 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 = z 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 = z SHF = 0
                   MEM_STAGE:  RAM_CTRL = 0001  L = 1  RF_LE = 1
                   WB_STAGE:   RF_LE = 1


Current Time Unit = 26
                   Ins. =     LDIL 00100001111000000011111100001010
                   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 = z SHF = 0
                   MEM_STAGE:  RAM_CTRL = 0111  L = 0  RF_LE = 0
                   WB_STAGE:   RF_LE = 1


Current Time Unit = 30
                   Ins. =      BL 11101010100000000000000000010000
                   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 = z 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 = z SHF = 0
                   MEM_STAGE:  RAM_CTRL = 0000  L = 0  RF_LE = 1
                   WB_STAGE:   RF_LE = 0


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 = z SHF = 1
                   MEM_STAGE:  RAM_CTRL = 0000  L = 0  RF_LE = 1
                   WB_STAGE:   RF_LE = 1


Current Time Unit = 42
                   Ins. =      NOP 00000000000000000000000000000000
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                    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 = z 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 = z 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 = z SHF = 0
                    MEM_STAGE:  RAM_CTRL = 0000  L = 0  RF_LE = 0
                    WB_STAGE:   RF_LE = 0


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 = z 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 = z 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 = z 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 = z 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 = z 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 = z 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)
```