Report

Code starts by loading instructions and initialises their attributes, and then it checks if the current pc value instruction has been issued or not (and that there are not branch stalls or structural hazard stalls), then it issues by finding a slot in the station, else if not set stall to true (structural hazard)

Execute checks that the instructions in the buffer were not just issued in this same cycle, and then checks if it can be executed or not (all the needed attributes are there), then starts executing.

If finished, it adds the instruction to a queue to be written

In write back, it checks if there are any instructions ready to be written to the bus, and since we implement it using FIFO, whatever instruction finishes execution first will be first in queue to be written. Then after it is written the respective station is emptied, and anything awaiting that instruction updates its values.

Assumptions used:
Register size is 64, first half is for int and the second half for floating, we also assumed that when we branch we always branch to the beginning of the code. Also the instruction types like ADD for example is able to handle both float and int, rather than using DADD and ADD.D)

Test cases:

Input:
LD F0 2
ADDI R12 R12 99
SD R12 1
SUBI R15 R15 5
BNEZ R15 LOOP
ADDI R13 R13 99

Result:

end is 6
Instruction to be issued: LD F0 2 false
stall is now false : false
Issue cycle of LD F0 2 is 1
Clock Cycle: 1
PC Value: 1
Reservation Stations:
Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1
Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: 0.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 0.0
R13: Tag: Busy: 0 Value: 0.0

R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 10.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: ADDI R12 R12 99
Instructions To Write:
Stall Branch: false
Stall: false

Instruction to be issued: ADDI R12 R12 99 false
stall is now false : false
Issue cycle of ADDI R12 R12 99 is 2
Clock Cycle: 2
PC Value: 2
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADDI Vj: 0.0 Vk: 99 Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: 2   Execute End Cycle: 3   Duration left: 1 Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: 0.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: A1   Busy: 1 Value: 0.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 10.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: SD R12 1
Instructions To Write:
Stall Branch: false
Stall: false

Instruction to be issued: SD R12 1 false
stall is now false : false
Issue cycle of SD R12 1 is 3
Made load read to write
Clock Cycle: 3
PC Value: 3
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 3 Execute End Cycle: 4   Busy: 1 Instruction
Type: ADDI Vj: 0.0 Vk: 99 Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: 2   Execute End Cycle: 3   Duration left: 1
Ready To Write: true
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: 0.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0

R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: A1   Busy: 1 Value: 0.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 10.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: SUBI R15 R15 5
Instructions To Write:
LD F0 2
Stall Branch: false
Stall: false

Instruction to be issued: SUBI R15 R15 5 false
stall is now false : false
Issue cycle of SUBI R15 R15 5 is 4
Value of memory is: 2.0 and effective address is: 2
Instruction to be written: LD F0 2
Clock Cycle: 4
PC Value: 4
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 3 Execute End Cycle: 4   Busy: 1 Instruction
Type: ADDI Vj: 0.0 Vk: 99 Qj: Qk: A: Duration left: 1   Ready To Write: true
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: SUBI Vj: 10.0   Vk: 5   Qj: Qk: A: Duration left: 1 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:

Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: A1   Busy: 1 Value: 0.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: A2   Busy: 1 Value: 10.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0

M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: L1 Value: 2.0
Current Instruction in PC: BNEZ R15 LOOP
Instructions To Write:
ADDI R12 R12 99
Stall Branch: false
Stall: false

Instruction to be issued: BNEZ R15 LOOP false
stall is now false : false
--------Stall due to Branch-----------
Issue cycle of BNEZ R15 LOOP is 5
Instruction to be written: ADDI R12 R12 99
Clock Cycle: 5
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 5   Execute End Cycle: 6   Busy: 1 Instruction
Type: SUBI Vj: 10.0   Vk: 5   Qj: Qk: A: Duration left: 1 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: BNEZ Vj: Vk: Qj: A2 Qk: A: Duration left: 1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:

Tag: S1 Busy: 1 Effective Address: 1　　Start Cycle: -1 Execute End Cycle: -1 Duration left: 1　　Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1　　Start Cycle: -1 Execute End Cycle: -1 Duration left: -1　　Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1　　Start Cycle: -1 Execute End Cycle: -1 Duration left: -1　　Ready To Write: false

Register File:

R0: Tag:　　Busy: 0 Value: 2.0
R1: Tag:　　Busy: 0 Value: 0.0
R2: Tag:　　Busy: 0 Value: 3.0
R3: Tag:　　Busy: 0 Value: 0.0
R4: Tag:　　Busy: 0 Value: 1.0
R5: Tag:　　Busy: 0 Value: 0.0
R6: Tag:　　Busy: 0 Value: 0.0
R7: Tag:　　Busy: 0 Value: 0.0
R8: Tag:　　Busy: 0 Value: 0.0
R9: Tag:　　Busy: 0 Value: 0.0
R10: Tag:　　Busy: 0 Value: 0.0
R11: Tag:　　Busy: 0 Value: 0.0
R12: Tag:　　Busy: 0 Value: 99.0
R13: Tag:　　Busy: 0 Value: 0.0
R14: Tag:　　Busy: 0 Value: 0.0
R15: Tag: A2　　Busy: 1 Value: 10.0
R16: Tag:　　Busy: 0 Value: 0.0
R17: Tag:　　Busy: 0 Value: 0.0
R18: Tag:　　Busy: 0 Value: 0.0
R19: Tag:　　Busy: 0 Value: 0.0

Memory:

M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0

Common Data Bus:

Tag: A1 Value: 99.0

Current Instruction in PC: ADDI R13 R13 99

Instructions To Write:

Stall Branch: true

Stall: false

Instruction to be issued: ADDI R13 R13 99 false

Clock Cycle: 6

PC Value: 5

Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Adder position1: Tag: A2   Start Cycle: 5 Execute End Cycle: 6   Busy: 1 Instruction Type: SUBI Vj: 10.0   Vk: 5 Qj: Qk: A: Duration left: 1 Ready To Write: true

Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: BNEZ Vj: Vk: Qj: A2 Qk: A: Duration left: 1   Ready To Write: false

Multiplier:

Multiplier position0:

Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier position1:

Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Load Buffers:

Load buffer position0:

Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 1 Effective Address: 1   Start Cycle: 6   Execute End Cycle: 7   Duration left: 1 Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 99.0

R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: A2   Busy: 1 Value: 10.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A1 Value: 99.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
SUBI R15 R15 5
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
sTORE FINISHED-------
Instruction to be written: SUBI R15 R15 5
Clock Cycle: 7
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: BNEZ Vj: 5.0 Vk: Qj: Qk: A: Duration left: 1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 5.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:

Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
Clock Cycle: 8
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: 8 Execute End Cycle: 9   Busy: 1 Instruction
Type: BNEZ Vj: 5.0 Vk: Qj: Qk: A: Duration left: 1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0

R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 5.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
Clock Cycle: 9
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: 8 Execute End Cycle: 9 Busy: 1 Instruction
Type: BNEZ Vj: 5.0 Vk: Qj: Qk: A: Duration left: 1   Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:

Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0

Common Data Bus:
Tag: A2 Value: 5.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
BNEZ R15 LOOP
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
Instruction to be written: BNEZ R15 LOOP
Clock Cycle: 10
PC Value: 0
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:

R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A3 Value: PC value is: 0
Current Instruction in PC: LD F0 2
Instructions To Write:
Stall Branch: false
Stall: false

Instruction to be issued: LD F0 2 false
stall is now false : false
Issue cycle of LD F0 2 is 11
Clock Cycle: 11
PC Value: 1
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false

Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1
Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0

R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A3 Value: PC value is: 0
Current Instruction in PC: ADDI R12 R12 99
Instructions To Write:
Stall Branch: false
Stall: false

Instruction to be issued: ADDI R12 R12 99 false
stall is now false : false
Issue cycle of ADDI R12 R12 99 is 12
Clock Cycle: 12
PC Value: 2
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADDI Vj: 99.0   Vk: 99 Qj: Qk: A: Duration left: 1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: 12 Execute End Cycle: 13 Duration left:
1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:

Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: A1   Busy: 1 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A3 Value: PC value is: 0
Current Instruction in PC: SD R12 1
Instructions To Write:
Stall Branch: false
Stall: false

Instruction to be issued: SD R12 1 false
stall is now false : false
Issue cycle of SD R12 1 is 13

Made load read to write
Clock Cycle: 13
PC Value: 3
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 13 Execute End Cycle: 14 Busy: 1 Instruction
Type: ADDI Vj: 99.0   Vk: 99 Qj: Qk: A: Duration left: 1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: 12 Execute End Cycle: 13 Duration left:
1   Ready To Write: true
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0

R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: A1   Busy: 1 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A3 Value: PC value is: 0
Current Instruction in PC: SUBI R15 R15 5
Instructions To Write:
LD F0 2
Stall Branch: false
Stall: false

Instruction to be issued: SUBI R15 R15 5 false
stall is now false : false
Issue cycle of SUBI R15 R15 5 is 14
Value of memory is: 2.0 and effective address is: 2
Instruction to be written: LD F0 2
Clock Cycle: 14
PC Value: 4
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 13 Execute End Cycle: 14 Busy: 1 Instruction
Type: ADDI Vj: 99.0   Vk: 99 Qj: Qk: A: Duration left: 1 Ready To Write: true
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: SUBI Vj: 5.0 Vk: 5 Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:

Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: A1   Busy: 1 Value: 99.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: A2   Busy: 1 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0

M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: L1 Value: 2.0
Current Instruction in PC: BNEZ R15 LOOP
Instructions To Write:
ADDI R12 R12 99
Stall Branch: false
Stall: false

Instruction to be issued: BNEZ R15 LOOP false
stall is now false : false
--------Stall due to Branch-----------
Issue cycle of BNEZ R15 LOOP is 15
Instruction to be written: ADDI R12 R12 99
Clock Cycle: 15
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 15 Execute End Cycle: 16 Busy: 1 Instruction Type: SUBI Vj: 5.0 Vk: 5   Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: BNEZ Vj: Vk: Qj: A2 Qk: A: Duration left: 1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 1   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false
Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: A2   Busy: 1 Value: 5.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A1 Value: 198.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
Clock Cycle: 16
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false

Adder position1: Tag: A2   Start Cycle: 15 Execute End Cycle: 16 Busy: 1 Instruction
Type: SUBI Vj: 5.0 Vk: 5   Qj: Qk: A: Duration left: 1   Ready To Write: true
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: BNEZ Vj: Vk: Qj: A2 Qk: A: Duration left: 1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 1   Start Cycle: 16 Execute End Cycle: 17 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: A2   Busy: 1 Value: 5.0

R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 99.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A1 Value: 198.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
SUBI R15 R15 5
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
sTORE FINISHED-------
Instruction to be written: SUBI R15 R15 5
Clock Cycle: 17
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: BNEZ Vj: 0.0 Vk: Qj: Qk: A: Duration left: 1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 0.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
Clock Cycle: 18
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: 18 Execute End Cycle: 19 Busy: 1 Instruction
Type: BNEZ Vj: 0.0 Vk: Qj: Qk: A: Duration left: 1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0

R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 0.0
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
Clock Cycle: 19
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: 18 Execute End Cycle: 19 Busy: 1 Instruction
Type: BNEZ Vj: 0.0 Vk: Qj: Qk: A: Duration left: 1   Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0

Memory:

M0: 0.0
M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0

Common Data Bus:

Tag: A2 Value: 0.0

Current Instruction in PC: ADDI R13 R13 99

Instructions To Write:
BNEZ R15 LOOP
Stall Branch: true
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
Instruction to be written: BNEZ R15 LOOP
Clock Cycle: 20
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0

R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: Busy: 0 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A3 Value: PC value is: 5
Current Instruction in PC: ADDI R13 R13 99
Instructions To Write:
Stall Branch: false
Stall: false

Instruction to be issued: ADDI R13 R13 99 false
stall is now false : false
Issue cycle of ADDI R13 R13 99 is 21
Clock Cycle: 21
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADDI Vj: 0.0 Vk: 99 Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:

Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: A1   Busy: 1 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0

M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A3 Value: PC value is: 5
Instructions To Write:
Stall Branch: false
Stall: false

Clock Cycle: 22
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 22 Execute End Cycle: 23 Busy: 1 Instruction
Type: ADDI Vj: 0.0 Vk: 99 Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: A1   Busy: 1 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0

Memory:

M0: 0.0
M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0

Common Data Bus:
Tag: A3 Value: PC value is: 5
Instructions To Write:
Stall Branch: false
Stall: false

Clock Cycle: 23
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 22 Execute End Cycle: 23 Busy: 1 Instruction Type: ADDI Vj: 0.0 Vk: 99 Qj: Qk: A: Duration left: 1   Ready To Write: true
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:

Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: A1   Busy: 1 Value: 0.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:

M0: 0.0
M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A3 Value: PC value is: 5
Instructions To Write:
ADDI R13 R13 99
Stall Branch: false
Stall: false

Instruction to be written: ADDI R13 R13 99
Clock Cycle: 24
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: 0.0
R2: Tag: Busy: 0 Value: 3.0
R3: Tag: Busy: 0 Value: 0.0
R4: Tag: Busy: 0 Value: 1.0
R5: Tag: Busy: 0 Value: 0.0
R6: Tag: Busy: 0 Value: 0.0
R7: Tag: Busy: 0 Value: 0.0
R8: Tag: Busy: 0 Value: 0.0
R9: Tag: Busy: 0 Value: 0.0
R10: Tag: Busy: 0 Value: 0.0
R11: Tag: Busy: 0 Value: 0.0
R12: Tag: Busy: 0 Value: 198.0
R13: Tag: Busy: 0 Value: 99.0
R14: Tag: Busy: 0 Value: 0.0
R15: Tag: Busy: 0 Value: 0.0
R16: Tag: Busy: 0 Value: 0.0
R17: Tag: Busy: 0 Value: 0.0
R18: Tag: Busy: 0 Value: 0.0
R19: Tag: Busy: 0 Value: 0.0
Memory:
M0: 0.0
M1: 198.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A1 Value: 99.0
Instructions To Write:
Stall Branch: false
Stall: false

Input:
LD F0 2
MUL F4 F0 F2
SD F4 0
SUBI R15 R15 8
ADDI R16 R16 1
DIV R18 R16 R15

Result:
end is 6
stall is now false : false
Issue cycle of LD F0 2 is 1
Clock Cycle: 1
PC Value: 1
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: -1.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0

R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 9.0
R16: Tag: Busy: 0 Value: 10.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: MUL F4 F0 F2
Instructions To Write:
----
stall is now false : false
Issue cycle of MUL F4 F0 F2 is 2
Clock Cycle: 2
PC Value: 2
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk: 5.3
Qj: L1 Qk: A: Duration left: 3   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: 2   Execute End Cycle: 3   Duration left: 1
Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false

Register File:

R0: Tag: L1   Busy: 1 Value: -1.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: M1   Busy: 1 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 9.0
R16: Tag: Busy: 0 Value: 10.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0

Common Data Bus:

Tag: Value:

Current Instruction in PC: SD F4 0

Instructions To Write:

----

stall is now false : false

Issue cycle of SD F4 0 is 3

Made load read to write

Clock Cycle: 3

PC Value: 3

Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier:

Multiplier position0:

Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk: 5.3

Qj: L1 Qk: A: Duration left: 3   Ready To Write: false

Multiplier position1:

Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:

Qj: Qk: A: Duration left: -1   Ready To Write: false

Load Buffers:

Load buffer position0:

Tag: L1 Busy: 1 Effective Address: 2   Start Cycle: 2   Execute End Cycle: 3   Duration left: 1

Ready To Write: true

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:

-1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 1 Effective Address: 0   Start Cycle: -1 Execute End Cycle: -1 Duration left:

1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:

-1   Ready To Write: false

Register File:

R0: Tag: L1   Busy: 1 Value: -1.0

R1: Tag: Busy: 0 Value: -1.0

R2: Tag: Busy: 0 Value: 5.3

R3: Tag: Busy: 0 Value: -1.0

R4: Tag: M1   Busy: 1 Value: -1.0

R5: Tag: Busy: 0 Value: -1.0

R6: Tag: Busy: 0 Value: -1.0

R7: Tag: Busy: 0 Value: -1.0

R8: Tag: Busy: 0 Value: -1.0

R9: Tag: Busy: 0 Value: -1.0

R10: Tag: Busy: 0 Value: -1.0

R11: Tag: Busy: 0 Value: -1.0

R12: Tag: Busy: 0 Value: -1.0

R13: Tag: Busy: 0 Value: -1.0

R14: Tag: Busy: 0 Value: -1.0

R15: Tag: Busy: 0 Value: 9.0

R16: Tag: Busy: 0 Value: 10.0

R17: Tag: Busy: 0 Value: -1.0

R18: Tag: Busy: 0 Value: -1.0

R19: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0

M1: 0.0

M2: 2.0

M3: 0.0

M4: 0.0

M5: 0.0
M6: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: SUBI R15 R15 8
Instructions To Write:
LD F0 2
----
stall is now false : false
Issue cycle of SUBI R15 R15 8 is 4
Value of memory is: 2.0 and effective address is: 2
Instruction to be written: LD F0 2
Clock Cycle: 4
PC Value: 4
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: SUBI Vj: 9.0 Vk: 8   Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: 2.0 Vk:
5.3 Qj: Qk: A: Duration left: 3   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 0   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: M1   Busy: 1 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0

R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: A1   Busy: 1 Value: 9.0
R16: Tag: Busy: 0 Value: 10.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: L1 Value: 2.0
Current Instruction in PC: ADDI R16 R16 1
Instructions To Write:
----
stall is now false : false
Issue cycle of ADDI R16 R16 1 is 5
CAN EXECUTE MULTIPLY MUL F4 F0 F2
Clock Cycle: 5
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 5   Execute End Cycle: 6   Busy: 1 Instruction
Type: SUBI Vj: 9.0 Vk: 8   Qj: Qk: A: Duration left: 1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADDI Vj: 10.0   Vk: 1 Qj: Qk: A: Duration left: 1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction Type: MUL   Vj: 2.0 Vk:
5.3 Qj: Qk: A: Duration left: 3   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:

Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 0   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: M1   Busy: 1 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: A1   Busy: 1 Value: 9.0
R16: Tag: A2   Busy: 1 Value: 10.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: L1 Value: 2.0
Current Instruction in PC: DIV R18 R16 R15
Instructions To Write:
----
stall is now false : false
Issue cycle of DIV R18 R16 R15 is 6

Clock Cycle: 6
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 5 Execute End Cycle: 6 Busy: 1 Instruction Type: SUBI Vj: 9.0 Vk: 8   Qj: Qk: A: Duration left: 1   Ready To Write: true
Adder position1: Tag: A2   Start Cycle: 6 Execute End Cycle: 7 Busy: 1 Instruction Type: ADDI Vj: 10.0   Vk: 1 Qj: Qk: A: Duration left: 1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 5 Execute End Cycle: 8 Busy: 1 Instruction Type: MUL Vj: 2.0 Vk: 5.3 Qj: Qk: A: Duration left: 2   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: DIV Vj: Vk: Qj: A2 Qk: A1 A: Duration left: 3   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1 Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1 Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 0   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1 Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: M1   Busy: 1 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: A1   Busy: 1 Value: 9.0
R16: Tag: A2   Busy: 1 Value: 10.0
R17: Tag: Busy: 0 Value: -1.0

R18: Tag: M2   Busy: 1 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: L1 Value: 2.0
Instructions To Write:
SUBI R15 R15 8

Instruction to be written: SUBI R15 R15 8
Clock Cycle: 7
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 6 Execute End Cycle: 7   Busy: 1 Instruction
Type: ADDI Vj: 10.0   Vk: 1   Qj: Qk: A: Duration left: 1 Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction Type: MUL   Vj: 2.0 Vk:
5.3 Qj: Qk: A: Duration left: 1   Ready To Write: true
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: DIV   Vj: Vk: 1.0
Qj: A2 Qk: A: Duration left: 3   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 0   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0

R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: M1   Busy: 1 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 1.0
R16: Tag: A2   Busy: 1 Value: 10.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: M2   Busy: 1 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A1 Value: 1.0
Instructions To Write:
MUL F4 F0 F2
ADDI R16 R16 1

Instruction to be written: MUL F4 F0 F2
Clock Cycle: 8
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 6   Execute End Cycle: 7   Busy: 1 Instruction
Type: ADDI Vj: 10.0   Vk: 1   Qj: Qk: A: Duration left: 1 Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: DIV   Vj: Vk: 1.0
Qj: A2 Qk: A: Duration left: 3   Ready To Write: false

Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 0   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: 10.600000381469727
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 1.0
R16: Tag: A2   Busy: 1 Value: 10.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: M2   Busy: 1 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: M1 Value: 10.6
Instructions To Write:
ADDI R16 R16 1

Instruction to be written: ADDI R16 R16 1
Clock Cycle: 9
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1　　Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj:　Vk:　Qj:　Qk:　A:　Duration left: -1 Ready To Write: false
Adder position1: Tag: A2　　Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj:　Vk:　Qj:　Qk:　A:　Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj:　Vk:
Qj:　Qk:　A:　Duration left: -1　Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: DIV　Vj: 11.0
Vk: 1.0 Qj:　Qk:　A:　Duration left: 3　Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1　Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1　Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1　Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1　Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 0　Start Cycle: 9　Execute End Cycle: 10 Duration left:
1　Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1　Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1　Ready To Write: false
Register File:
R0: Tag:　　Busy: 0 Value: 2.0
R1: Tag:　　Busy: 0 Value: -1.0
R2: Tag:　　Busy: 0 Value: 5.3
R3: Tag:　　Busy: 0 Value: -1.0
R4: Tag:　　Busy: 0 Value: 10.600000381469727
R5: Tag:　　Busy: 0 Value: -1.0
R6: Tag:　　Busy: 0 Value: -1.0
R7: Tag:　　Busy: 0 Value: -1.0
R8: Tag:　　Busy: 0 Value: -1.0
R9: Tag:　　Busy: 0 Value: -1.0
R10: Tag:　　Busy: 0 Value: -1.0
R11: Tag:　　Busy: 0 Value: -1.0
R12: Tag:　　Busy: 0 Value: -1.0
R13: Tag:　　Busy: 0 Value: -1.0
R14: Tag:　　Busy: 0 Value: -1.0
R15: Tag:　　Busy: 0 Value: 1.0
R16: Tag:　　Busy: 0 Value: 11.0

R17: Tag: Busy: 0 Value: -1.0
R18: Tag: M2   Busy: 1 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 11.0
Instructions To Write:

CAN EXECUTE MULTIPLY DIV R18 R16 R15
Clock Cycle: 10
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 10 Execute End Cycle: 13 Busy: 1 Instruction Type: DIV   Vj: 11.0
Vk: 1.0 Qj: Qk: A: Duration left: 3 Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0

R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: 10.600000381469727
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 1.0
R16: Tag: Busy: 0 Value: 11.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: M2   Busy: 1 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 10.600000381469727
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 11.0
Instructions To Write:

Clock Cycle: 11
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 10 Execute End Cycle: 13 Busy: 1 Instruction Type: DIV   Vj: 11.0
Vk: 1.0 Qj: Qk: A: Duration left: 2   Ready To Write: false
Load Buffers:
Load buffer position0:

Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: 10.600000381469727
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 1.0
R16: Tag: Busy: 0 Value: 11.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: M2   Busy: 1 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 10.600000381469727
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 11.0
Instructions To Write:

Clock Cycle: 12
PC Value: 6
Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier:

Multiplier position0:

Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier position1:

Tag: M2 Start Cycle: 10 Execute End Cycle: 13 Busy: 1 Instruction Type: DIV   Vj: 11.0 Vk: 1.0 Qj: Qk: A: Duration left: 1   Ready To Write: true

Load Buffers:

Load buffer position0:

Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: 10.600000381469727
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 1.0
R16: Tag: Busy: 0 Value: 11.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: M2   Busy: 1 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0

Memory:

M0: 10.600000381469727
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 11.0
Instructions To Write:
DIV R18 R16 R15

Instruction to be written: DIV R18 R16 R15
Clock Cycle: 13
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 2.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: 5.3
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: 10.600000381469727

R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: 1.0
R16: Tag: Busy: 0 Value: 11.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: 11.0
R19: Tag: Busy: 0 Value: -1.0
Memory:
M0: 10.600000381469727
M1: 0.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: M2 Value: 11.0
Instructions To Write:

Input:

LD R0, 1
LD R1, 2
MUL R0,R0,R20
MUL R1,R1,R20
ADD R2,R0,R1
ADD R20,R20,R20
SD R2,5

Result:

stall is now false : false
Issue cycle of LD R0, 1 is 1
Clock Cycle: 1
PC Value: 1
Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier:

Multiplier position0:

Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier position1:

Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Load Buffers:

Load buffer position0:

Tag: L1 Busy: 1 Effective Address: 1   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1 Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: L1   Busy: 1 Value: -1.0
R1: Tag: Busy: 0 Value: -1.0
R2: Tag: Busy: 0 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 3.0

R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: LD R1, 2
Instructions To Write:
----
stall is now false : false
Issue cycle of LD R1, 2 is 2
Clock Cycle: 2
PC Value: 2
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 1   Start Cycle: 2   Execute End Cycle: 3   Duration left: 1
Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 1 Effective Address: 2   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1
Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: L1   Busy: 1 Value: -1.0
R1: Tag: L2   Busy: 1 Value: -1.0

R2: Tag: Busy: 0 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 3.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: MUL R0,R0,R20
Instructions To Write:
----
stall is now false : false
Issue cycle of MUL R0,R0,R20 is 3
Made load read to write
Clock Cycle: 3
PC Value: 3
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk: 3.0
Qj: L1 Qk: A: Duration left: 3   Ready To Write: false

Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 1 Effective Address: 1   Start Cycle: 2   Execute End Cycle: 3   Duration left: 1
Ready To Write: true
Load buffer position1:
Tag: L2 Busy: 1 Effective Address: 2   Start Cycle: 3   Execute End Cycle: 4   Duration left: 1
Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: M1   Busy: 1 Value: -1.0
R1: Tag: L2   Busy: 1 Value: -1.0
R2: Tag: Busy: 0 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 3.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0

Common Data Bus:
Tag: Value:
Current Instruction in PC: MUL R1,R1,R20
Instructions To Write:
LD R0, 1
----
stall is now false : false
Issue cycle of MUL R1,R1,R20 is 4
Made load read to write
Value of memory is: 1.0 and effective address is: 1
Instruction to be written: LD R0, 1
Clock Cycle: 4
PC Value: 4
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
3.0 Qj: Qk: A: Duration left: 3   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk: 3.0
Qj: L2 Qk: A: Duration left: 3   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 1 Effective Address: 2   Start Cycle: 3   Execute End Cycle: 4   Duration left: 1
Ready To Write: true
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: M1   Busy: 1 Value: 1.0
R1: Tag: M2   Busy: 1 Value: -1.0
R2: Tag: Busy: 0 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0

R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 3.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: L1 Value: 1.0
Current Instruction in PC: ADD R2,R0,R1
Instructions To Write:
LD R1, 2
----
stall is now false : false
Issue cycle of ADD R2,R0,R1 is 5
CAN EXECUTE MULTIPLY MUL R0,R0,R20
Value of memory is: 2.0 and effective address is: 2
Instruction to be written: LD R1, 2
Clock Cycle: 5
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: Qj: M1 Qk: M2 A: Duration left: 2   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
3.0 Qj: Qk: A: Duration left: 3   Ready To Write: false
Multiplier position1:

Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 3   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: M1   Busy: 1 Value: 1.0
R1: Tag: M2   Busy: 1 Value: 2.0
R2: Tag: A1   Busy: 1 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 3.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:

Tag: L2 Value: 2.0
Current Instruction in PC: ADD R20,R20,R20
Instructions To Write:
----
stall is now false : false
Issue cycle of ADD R20,R20,R20 is 6
CAN EXECUTE MULTIPLY MUL R1,R1,R20
Clock Cycle: 6
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: Qj: M1 Qk: M2 A: Duration left: 2   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: 3.0 Vk: 3.0 Qj: Qk: A: Duration left: 2   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
3.0 Qj: Qk: A: Duration left: 2   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 6   Execute End Cycle: 9   Busy: 1 Instruction Type: MUL   Vj: 2.0 Vk:
3.0 Qj: Qk: A: Duration left: 3   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: M1   Busy: 1 Value: 1.0
R1: Tag: M2   Busy: 1 Value: 2.0
R2: Tag: A1   Busy: 1 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0

R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: A2 Busy: 1 Value: 3.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: L2 Value: 2.0
Current Instruction in PC: SD R2,5
Instructions To Write:
----
stall is now false : false
Issue cycle of SD R2,5 is 7
Clock Cycle: 7
PC Value: 7
Reservation Stations:
Adder:
Adder position0: Tag: A1 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD Vj: Vk: Qj: M1 Qk: M2 A: Duration left: 2 Ready To Write: false
Adder position1: Tag: A2 Start Cycle: 7 Execute End Cycle: 9 Busy: 1 Instruction Type: ADD Vj: 3.0 Vk: 3.0 Qj: Qk: A: Duration left: 2 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 5 Execute End Cycle: 8 Busy: 1 Instruction Type: MUL Vj: 1.0 Vk: 3.0 Qj: Qk: A: Duration left: 1 Ready To Write: true
Multiplier position1:
Tag: M2 Start Cycle: 6 Execute End Cycle: 9 Busy: 1 Instruction Type: MUL Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 2 Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1 Start Cycle: -1 Execute End Cycle: -1 Duration left: -1 Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1 Start Cycle: -1 Execute End Cycle: -1 Duration left: -1 Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 1 Effective Address: 5   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: M1   Busy: 1 Value: 1.0

R1: Tag: M2   Busy: 1 Value: 2.0

R2: Tag: A1   Busy: 1 Value: -1.0

R3: Tag: Busy: 0 Value: -1.0

R4: Tag: Busy: 0 Value: -1.0

R5: Tag: Busy: 0 Value: -1.0

R6: Tag: Busy: 0 Value: -1.0

R7: Tag: Busy: 0 Value: -1.0

R8: Tag: Busy: 0 Value: -1.0

R9: Tag: Busy: 0 Value: -1.0

R10: Tag: Busy: 0 Value: -1.0

R11: Tag: Busy: 0 Value: -1.0

R12: Tag: Busy: 0 Value: -1.0

R13: Tag: Busy: 0 Value: -1.0

R14: Tag: Busy: 0 Value: -1.0

R15: Tag: Busy: 0 Value: -1.0

R16: Tag: Busy: 0 Value: -1.0

R17: Tag: Busy: 0 Value: -1.0

R18: Tag: Busy: 0 Value: -1.0

R19: Tag: Busy: 0 Value: -1.0

R20: Tag: A2   Busy: 1 Value: 3.0

R21: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0

M1: 1.0

M2: 2.0

M3: 0.0

M4: 0.0

M5: 0.0

M6: 0.0

Common Data Bus:

Tag: L2 Value: 2.0

Instructions To Write:

MUL R0,R0,R20

Instruction to be written: MUL R0,R0,R20

Clock Cycle: 8

PC Value: 7

Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD   Vj: 3.0 Vk: Qj: Qk: M2 A: Duration left: 2   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 7 Execute End Cycle: 9 Busy: 1 Instruction Type: ADD   Vj: 3.0 Vk: 3.0 Qj: Qk: A: Duration left: 1   Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 6 Execute End Cycle: 9 Busy: 1 Instruction Type: MUL   Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 1   Ready To Write: true
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 5   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 3.0
R1: Tag: M2   Busy: 1 Value: 2.0
R2: Tag: A1   Busy: 1 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: A2   Busy: 1 Value: 3.0
R21: Tag: Busy: 0 Value: -1.0

Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: M1 Value: 3.0
Instructions To Write:
MUL R1,R1,R20
ADD R20,R20,R20

Instruction to be written: MUL R1,R1,R20
Clock Cycle: 9
PC Value: 7
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD   Vj: 3.0 Vk: 6.0 Qj: Qk: A: Duration left: 2   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 7 Execute End Cycle: 9   Busy: 1 Instruction Type: ADD   Vj: 3.0 Vk: 3.0 Qj: Qk: A: Duration left: 1   Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 5   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 3.0
R1: Tag: Busy: 0 Value: 6.0
R2: Tag: A1   Busy: 1 Value: -1.0

R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: A2   Busy: 1 Value: 3.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: M2 Value: 6.0
Instructions To Write:
ADD R20,R20,R20

Instruction to be written: ADD R20,R20,R20
Clock Cycle: 10
PC Value: 7
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 10 Execute End Cycle: 12 Busy: 1 Instruction Type: ADD   Vj: 3.0 Vk: 6.0 Qj: Qk: A: Duration left: 2   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 5   Start Cycle: -1 Execute End Cycle: -1 Duration left: 1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 3.0
R1: Tag: Busy: 0 Value: 6.0
R2: Tag: A1   Busy: 1 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 6.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 6.0
Instructions To Write:

Clock Cycle: 11
PC Value: 7
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 10 Execute End Cycle: 12 Busy: 1 Instruction
Type: ADD   Vj: 3.0 Vk: 6.0 Qj: Qk: A: Duration left: 1   Ready To Write: true
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 5   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 3.0
R1: Tag: Busy: 0 Value: 6.0
R2: Tag: A1   Busy: 1 Value: -1.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0

R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 6.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A2 Value: 6.0
Instructions To Write:
ADD R2,R0,R1

Instruction to be written: ADD R2,R0,R1
Clock Cycle: 12
PC Value: 7
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 5   Start Cycle: -1 Execute End Cycle: -1 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false

Register File:
R0: Tag: Busy: 0 Value: 3.0
R1: Tag: Busy: 0 Value: 6.0
R2: Tag: Busy: 0 Value: 9.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 6.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:
Tag: A1 Value: 9.0
Instructions To Write:

Clock Cycle: 13
PC Value: 7
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:

Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 1 Effective Address: 5   Start Cycle: 13 Execute End Cycle: 14 Duration left:
1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 3.0
R1: Tag: Busy: 0 Value: 6.0
R2: Tag: Busy: 0 Value: 9.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 6.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 0.0
M6: 0.0
Common Data Bus:

Tag: A1 Value: 9.0
Instructions To Write:

Clock Cycle: 14
PC Value: 7
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: 3.0
R1: Tag: Busy: 0 Value: 6.0
R2: Tag: Busy: 0 Value: 9.0
R3: Tag: Busy: 0 Value: -1.0
R4: Tag: Busy: 0 Value: -1.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: -1.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: -1.0
R9: Tag: Busy: 0 Value: -1.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0

R15: Tag: Busy: 0 Value: -1.0
R16: Tag: Busy: 0 Value: -1.0
R17: Tag: Busy: 0 Value: -1.0
R18: Tag: Busy: 0 Value: -1.0
R19: Tag: Busy: 0 Value: -1.0
R20: Tag: Busy: 0 Value: 6.0
R21: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 0.0
M5: 9.0
M6: 0.0
Common Data Bus:
Tag: A1 Value: 9.0
Instructions To Write:

Input:

MUL R3, R1, R2
ADD R5, R3, R4
ADD R7, R2, R6
ADD R10, R8, R9
MUL R11, R7, R10
ADD R5, R5, R11

Result:

end is 6
stall is now false : false
Issue cycle of MUL R3, R1, R2 is 1
Clock Cycle: 1
PC Value: 1
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk: 2.0 Qj: Qk: A: Duration left: 6   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: M1   Busy: 1 Value: -1.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: Busy: 0 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0

M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: ADD R5, R3, R4
Instructions To Write:
----
stall is now false : false
Issue cycle of ADD R5, R3, R4 is 2
CAN EXECUTE MULTIPLY MUL R3, R1, R2
Clock Cycle: 2
PC Value: 2
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: 3.0 Qj: M1 Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 2   Execute End Cycle: 7   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
2.0 Qj: Qk: A: Duration left: 6   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: M1   Busy: 1 Value: -1.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: ADD R7, R2, R6
Instructions To Write:
----
stall is now false : false
Issue cycle of ADD R7, R2, R6 is 3
Clock Cycle: 3

PC Value: 3
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: 3.0 Qj: M1 Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 4.0 Qj: Qk: A: Duration left: 4 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 2 Execute End Cycle: 7   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
2.0 Qj: Qk: A: Duration left: 5   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: M1   Busy: 1 Value: -1.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: A2   Busy: 1 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: -1.0

R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: ADD R10, R8, R9
Instructions To Write:
----
stall is now false : false
Issue cycle of ADD R10, R8, R9 is 4
Clock Cycle: 4
PC Value: 4
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: 3.0 Qj: M1 Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 4   Execute End Cycle: 7   Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 4.0 Qj: Qk: A: Duration left: 4 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 6.0 Qj: Qk: A: Duration left: 4 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 2   Execute End Cycle: 7   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
2.0 Qj: Qk: A: Duration left: 4   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: M1   Busy: 1 Value: -1.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: A2   Busy: 1 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: A3   Busy: 1 Value: -1.0
R11: Tag: Busy: 0 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0

Common Data Bus:
Tag: Value:
Current Instruction in PC: MUL R11, R7, R10
Instructions To Write:
----
stall is now false : false
Issue cycle of MUL R11, R7, R10 is 5
Clock Cycle: 5
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: 3.0 Qj: M1 Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 4   Execute End Cycle: 7   Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 4.0 Qj: Qk: A: Duration left: 3 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 6.0 Qj: Qk: A: Duration left: 4 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 2   Execute End Cycle: 7   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
2.0 Qj: Qk: A: Duration left: 3   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk:
Qj: A2 Qk: A3 A: Duration left: 6   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0

R3: Tag: M1   Busy: 1 Value: -1.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: A2   Busy: 1 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: A3   Busy: 1 Value: -1.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: ADD R5, R5, R11
Instructions To Write:

--------Stall due to Issue---
STALL
Clock Cycle: 6
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: 3.0 Qj: M1 Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 4   Execute End Cycle: 7   Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 4.0 Qj: Qk: A: Duration left: 2 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 6.0 Qj: Qk: A: Duration left: 3 Ready To Write: false
Multiplier:
Multiplier position0:

Tag: M1 Start Cycle: 2   Execute End Cycle: 7   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk: 2.0 Qj: Qk: A: Duration left: 2   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk: Qj: A2 Qk: A3 A: Duration left: 6   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: M1   Busy: 1 Value: -1.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: A2   Busy: 1 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: A3   Busy: 1 Value: -1.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0

M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: ADD R5, R5, R11
Instructions To Write:

--------Stall due to Issue---
STALL
Clock Cycle: 7
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: 3.0 Qj: M1 Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 4   Execute End Cycle: 7   Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 4.0 Qj: Qk: A: Duration left: 1 Ready To Write: true
Adder position2: Tag: A3   Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 6.0 Qj: Qk: A: Duration left: 2 Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: 2   Execute End Cycle: 7   Busy: 1 Instruction Type: MUL   Vj: 1.0 Vk:
2.0 Qj: Qk: A: Duration left: 1   Ready To Write: true
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk:
Qj: A2 Qk: A3 A: Duration left: 6   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: M1   Busy: 1 Value: -1.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: A2   Busy: 1 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: A3   Busy: 1 Value: -1.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: Value:
Current Instruction in PC: ADD R5, R5, R11
Instructions To Write:
MUL R3, R1, R2
ADD R7, R2, R6

--------Stall due to Issue---
STALL
Instruction to be written: MUL R3, R1, R2
Clock Cycle: 8

PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD   Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 4 Execute End Cycle: 7   Busy: 1 Instruction Type: ADD   Vj: 2.0 Vk: 4.0 Qj: Qk: A: Duration left: 1 Ready To Write: true
Adder position2: Tag: A3   Start Cycle: 5 Execute End Cycle: 8   Busy: 1 Instruction Type: ADD   Vj: 5.0 Vk: 6.0 Qj: Qk: A: Duration left: 1 Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: Vk: Qj: A2 Qk: A3 A: Duration left: 6   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: A2   Busy: 1 Value: -1.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: A3   Busy: 1 Value: -1.0

R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: M1 Value: 2.0
Current Instruction in PC: ADD R5, R5, R11
Instructions To Write:
ADD R7, R2, R6
ADD R10, R8, R9

--------Stall due to Issue---
STALL
Instruction to be written: ADD R7, R2, R6
Clock Cycle: 9
PC Value: 5
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 9   Execute End Cycle: 12 Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 4 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: 5   Execute End Cycle: 8   Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 6.0 Qj: Qk: A: Duration left: 1 Ready To Write: true
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk:
Qj: Qk: A3 A: Duration left: 6   Ready To Write: false
Load Buffers:

Load buffer position0:

Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A1   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: A3   Busy: 1 Value: -1.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0

M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: A2 Value: 6.0
Current Instruction in PC: ADD R5, R5, R11
Instructions To Write:
ADD R10, R8, R9

----

stall is now false : false
Issue cycle of ADD R5, R5, R11 is 10
Instruction to be written: ADD R10, R8, R9
Clock Cycle: 10
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 9   Execute End Cycle: 12 Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 3 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: Qj: A1 Qk: M2 A: Duration left: 4 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk:
11.0   Qj: Qk: A: Duration left: 6   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0

Common Data Bus:

Tag: A3 Value: 11.0

Instructions To Write:

CAN EXECUTE MULTIPLY MUL R11, R7, R10

Clock Cycle: 11

PC Value: 6

Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: 9 Execute End Cycle: 12 Busy: 1 Instruction Type: ADD   Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 2 Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD   Vj: Vk: Qj: A1 Qk: M2 A: Duration left: 4 Ready To Write: false

Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 11 Execute End Cycle: 16 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk: 11.0   Qj: Qk: A: Duration left: 6   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0

M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: A3 Value: 11.0
Instructions To Write:

Clock Cycle: 12
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: 9   Execute End Cycle: 12 Busy: 1 Instruction
Type: ADD   Vj: 2.0 Vk: 3.0 Qj: Qk: A: Duration left: 1 Ready To Write: true
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: Vk: Qj: A1 Qk: M2 A: Duration left: 4 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 11 Execute End Cycle: 16 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk:
11.0   Qj: Qk: A: Duration left: 5   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1 Start Cycle: -1 Execute End Cycle: -1 Duration left: -1 Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1 Start Cycle: -1 Execute End Cycle: -1 Duration left: -1 Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2 Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: M2 Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0

Common Data Bus:

Tag: A3 Value: 11.0

Instructions To Write:

ADD R5, R3, R4

Instruction to be written: ADD R5, R3, R4

Clock Cycle: 13

PC Value: 6

Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD   Vj: 5.0 Vk: Qj: Qk: M2 A: Duration left: 4 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 11 Execute End Cycle: 16 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk: 11.0   Qj: Qk: A: Duration left: 4   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0

R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: A1 Value: 5.0
Instructions To Write:

Clock Cycle: 14
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD   Vj: 5.0 Vk: Qj: Qk: M2 A: Duration left: 4 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 11 Execute End Cycle: 16 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk: 11.0   Qj: Qk: A: Duration left: 3   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0

Common Data Bus:

Tag: A1 Value: 5.0

Instructions To Write:

Clock Cycle: 15

PC Value: 6

Reservation Stations:

Adder:

Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction Type: ADD   Vj: 5.0 Vk: Qj: Qk: M2 A: Duration left: 4 Ready To Write: false

Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier:

Multiplier position0:

Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false

Multiplier position1:

Tag: M2 Start Cycle: 11 Execute End Cycle: 16 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk: 11.0   Qj: Qk: A: Duration left: 2   Ready To Write: false

Load Buffers:

Load buffer position0:

Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: M2   Busy: 1 Value: -1.0

R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: A1 Value: 5.0
Instructions To Write:

Clock Cycle: 16
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: Qj: Qk: M2 A: Duration left: 4 Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: 11 Execute End Cycle: 16 Busy: 1 Instruction Type: MUL   Vj: 6.0 Vk:
11.0   Qj: Qk: A: Duration left: 1   Ready To Write: true
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: M2   Busy: 1 Value: -1.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: A1 Value: 5.0
Instructions To Write:
MUL R11, R7, R10

Instruction to be written: MUL R11, R7, R10
Clock Cycle: 17
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 66.0   Qj: Qk: A: Duration left: 4   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0

R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: Busy: 0 Value: 66.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: M2 Value: 66.0
Instructions To Write:

Clock Cycle: 18
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 18 Execute End Cycle: 21 Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 66.0   Qj: Qk: A: Duration left: 4   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false

Load buffer position1:

Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Load buffer position2:

Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store Buffers:

Store buffer position0:

Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position1:

Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Store buffer position2:

Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false

Register File:

R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: Busy: 0 Value: 66.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0

Memory:

M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0

Common Data Bus:
Tag: M2 Value: 66.0
Instructions To Write:

Clock Cycle: 19
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 18 Execute End Cycle: 21 Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 66.0   Qj: Qk: A: Duration left: 3   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0

R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: Busy: 0 Value: 66.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: M2 Value: 66.0
Instructions To Write:

Clock Cycle: 20
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 18 Execute End Cycle: 21 Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 66.0   Qj: Qk: A: Duration left: 2   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:

Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left: -1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: Busy: 0 Value: 66.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0

M13: 0.0
M14: 0.0
Common Data Bus:
Tag: M2 Value: 66.0
Instructions To Write:

Clock Cycle: 21
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: 18 Execute End Cycle: 21 Busy: 1 Instruction
Type: ADD   Vj: 5.0 Vk: 66.0   Qj: Qk: A: Duration left: 1   Ready To Write: true
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:
Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0

R4: Tag: Busy: 0 Value: 3.0
R5: Tag: A2   Busy: 1 Value: -1.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: Busy: 0 Value: 66.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0
M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: M2 Value: 66.0
Instructions To Write:
ADD R5, R5, R11

Instruction to be written: ADD R5, R5, R11
Clock Cycle: 22
PC Value: 6
Reservation Stations:
Adder:
Adder position0: Tag: A1   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position1: Tag: A2   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Adder position2: Tag: A3   Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction
Type: None Vj: Vk: Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier:
Multiplier position0:
Tag: M1 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Multiplier position1:

Tag: M2 Start Cycle: -1 Execute End Cycle: -1 Busy: 0 Instruction Type: None Vj: Vk:
Qj: Qk: A: Duration left: -1   Ready To Write: false
Load Buffers:
Load buffer position0:
Tag: L1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position1:
Tag: L2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Load buffer position2:
Tag: L3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store Buffers:
Store buffer position0:
Tag: S1 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position1:
Tag: S2 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Store buffer position2:
Tag: S3 Busy: 0 Effective Address: -1   Start Cycle: -1 Execute End Cycle: -1 Duration left:
-1   Ready To Write: false
Register File:
R0: Tag: Busy: 0 Value: -1.0
R1: Tag: Busy: 0 Value: 1.0
R2: Tag: Busy: 0 Value: 2.0
R3: Tag: Busy: 0 Value: 2.0
R4: Tag: Busy: 0 Value: 3.0
R5: Tag: Busy: 0 Value: 71.0
R6: Tag: Busy: 0 Value: 4.0
R7: Tag: Busy: 0 Value: 6.0
R8: Tag: Busy: 0 Value: 5.0
R9: Tag: Busy: 0 Value: 6.0
R10: Tag: Busy: 0 Value: 11.0
R11: Tag: Busy: 0 Value: 66.0
R12: Tag: Busy: 0 Value: -1.0
R13: Tag: Busy: 0 Value: -1.0
R14: Tag: Busy: 0 Value: -1.0
Memory:
M0: 0.0
M1: 1.0
M2: 2.0
M3: 0.0
M4: 3.0
M5: 0.0
M6: 4.0
M7: 0.0
M8: 5.0

M9: 6.0
M10: 0.0
M11: 0.0
M12: 0.0
M13: 0.0
M14: 0.0
Common Data Bus:
Tag: A2 Value: 71.0
Instructions To Write: