

INSTRUCTION LIST :

MULTD F4 F0 F8
MULTD F0 F4 F2
ADDD F2 F2 F8

Clock cycle : 0

TIMING TABLE

PC	INSTRUCTION	ISSUED	STARTED	FINISHED	Write CDB
0	MULTD F4 F0 F8	-	-	-	-
1	MULTD F0 F4 F2	-	-	-	-
2	ADDD F2 F2 F8	-	-	-	-

Reservation Station

Time left	Tag	OP	Busy	valueJ	valueK	Qj	Qk
	Add0		False	0	0		
	Add1		False	0	0		
	Add2		False	0	0		
	Mult0		False	0	0		
	Mult1		False	0	0		

Load Station

Time left	Tag	Busy	Address
	Load0	False	
	Load1	False	
	Load2	False	
	Load3	False	
	Load4	False	
	Load5	False	

Register

Name	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
Qi										
Value	6.0	0.0	3.5	0.0	10.0	0.0	0.0	0.0	7.8	0.0

Clock cycle : 1
PC : 0

NEXT FP INSTRUCTION TO BE ISSUED: 'MULTD F4 F0 F8'

Instruction 'MULTD F4 F0 F8' ISSUED at clock 1 in 'Mult0'

TIMING TABLE

PC	INSTRUCTION	ISSUED	STARTED	FINISHED	Write CDB
0	MULTD F4 F0 F8	1	-	-	-
1	MULTD F0 F4 F2	-	-	-	-
2	ADDD F2 F2 F8	-	-	-	-

Reservation Station

Time left	Tag	OP	Busy	valueJ	valueK	Qj	Qk
	Add0		False	0	0		
	Add1		False	0	0		
	Add2		False	0	0		
5	Mult0	MULTD	True	6.0	7.8		
	Mult1		False	0	0		

Load Station

Time left	Tag	Busy	Address
	Load0	False	
	Load1	False	
	Load2	False	
	Load3	False	
	Load4	False	
	Load5	False	

Register										
Name	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
Qi					Mult0					
Value	6.0	0.0	3.5	0.0	10.0	0.0	0.0	0.0	7.8	0.0

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Clock cycle : 2

PC : 1

NEXT FP INSTRUCTION TO BE ISSUED: 'MULTD F0 F4 F2'

Instruction 'MULTD F0 F4 F2' ISSUED at clock 2 in 'Mult1'

Instruction 'MULTD F4 F0 F8' STARTED at clock 2 in 'Mult0'

TIMING TABLE						
PC	INSTRUCTION	ISSUED	STARTED	FINISHED	Write CDB	
0	MULTD F4 F0 F8	1	2	-	-	
1	MULTD F0 F4 F2	2	-	-	-	
2	ADDD F2 F2 F8	-	-	-	-	

Reservation Station							
Time left	Tag	OP	Busy	valueJ	valueK	Qj	Qk
	Add0		False	0	0		
	Add1		False	0	0		
	Add2		False	0	0		
4	Mult0	MULTD	True	6.0	7.8		
6	Mult1	MULTD	True	10.0	3.5	Mult0	

Load Station			
Time left	Tag	Busy	Address
	Load0	False	
	Load1	False	
	Load2	False	
	Load3	False	
	Load4	False	
	Load5	False	

Register										
Name	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
Qi	Mult1				Mult0					
Value	6.0	0.0	3.5	0.0	10.0	0.0	0.0	0.0	7.8	0.0

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Clock cycle : 3

PC : 2

NEXT FP INSTRUCTION TO BE ISSUED: 'ADDD F2 F2 F8'

Instruction 'ADDD F2 F2 F8' ISSUED at clock 3 in 'Add0'

TIMING TABLE						
PC	INSTRUCTION	ISSUED	STARTED	FINISHED	Write CDB	
0	MULTD F4 F0 F8	1	2	-	-	
1	MULTD F0 F4 F2	2	-	-	-	
2	ADDD F2 F2 F8	3	-	-	-	

Reservation Station							
Time left	Tag	OP	Busy	valueJ	valueK	Qj	Qk
1	Add0	ADDD	True	3.5	7.8	Add0	
	Add1		False	0	0		
	Add2		False	0	0		
3	Mult0	MULTD	True	6.0	7.8		

6

Mult1

MULTD

True

10.0

3.5

Mult0

Load Station			
Time left	Tag	Busy	Address
	Load0	False	
	Load1	False	
	Load2	False	
	Load3	False	
	Load4	False	
	Load5	False	

Register										
Name	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
Qi	Mult1		Add0		Mult0					
Value	6.0	0.0	3.5	0.0	10.0	0.0	0.0	0.0	7.8	0.0

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Clock cycle : 4

PC : 3

Instruction 'ADD F2 F2 F8' STARTED at clock 4 in 'Add0'

TIMING TABLE						
PC	INSTRUCTION	ISSUED	STARTED	FINISHED	Write CDB	
0	MULTD F4 F0 F8	1	2	-	-	-
1	MULTD F0 F4 F2	2	-	-	-	-
2	ADD F2 F2 F8	3	4	-	-	-

Reservation Station							
Time left	Tag	OP	Busy	valueJ	valueK	Qj	Qk
0	Add0	ADD	True	3.5	7.8	Add0	
	Add1		False	0	0		
	Add2		False	0	0		
2	Mult0	MULTD	True	6.0	7.8		
6	Mult1	MULTD	True	10.0	3.5	Mult0	

Load Station			
Time left	Tag	Busy	Address
	Load0	False	
	Load1	False	
	Load2	False	
	Load3	False	
	Load4	False	
	Load5	False	

Register										
Name	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
Qi	Mult1		Add0		Mult0					
Value	6.0	0.0	3.5	0.0	10.0	0.0	0.0	0.0	7.8	0.0

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Clock cycle : 5

PC : 3

Instruction 'ADD F2 F2 F8' FINISHED at clock 5 in 'Add0'

TIMING TABLE						
PC	INSTRUCTION	ISSUED	STARTED	FINISHED	Write CDB	
0	MULTD F4 F0 F8	1	2	-	-	-
1	MULTD F0 F4 F2	2	-	-	-	-
2	ADD F2 F2 F8	3	4	5	-	-

Reservation Station							
Time left	Tag	OP	Busy	valueJ	valueK	Qj	Qk
0	Add0	ADDD	True	3.5	7.8	Add0	
	Add1		False	0	0		
	Add2		False	0	0		
1	Mult0	MULTD	True	6.0	7.8		
6	Mult1	MULTD	True	10.0	3.5	Mult0	

Load Station			
Time left	Tag	Busy	Address
	Load0	False	
	Load1	False	
	Load2	False	
	Load3	False	
	Load4	False	
	Load5	False	

Register										
Name	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
Qi	Mult1		Add0		Mult0					
Value	6.0	0.0	3.5	0.0	10.0	0.0	0.0	0.0	7.8	0.0

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Clock cycle : 6
PC : 3

Instruction 'ADDD F2 F2 F8' BROADCASTED in CDB at clock 6 with value '11.3'

TIMING TABLE						
PC	INSTRUCTION	ISSUED	STARTED	FINISHED	Write CDB	
0	MULTD F4 F0 F8	1	2	-	-	
1	MULTD F0 F4 F2	2	-	-	-	
2	ADDD F2 F2 F8	3	4	5	6	

Reservation Station							
Time left	Tag	OP	Busy	valueJ	valueK	Qj	Qk
	Add0		False	0	0		
	Add1		False	0	0		
	Add2		False	0	0		
0	Mult0	MULTD	True	6.0	7.8		
6	Mult1	MULTD	True	10.0	3.5	Mult0	

Load Station			
Time left	Tag	Busy	Address
	Load0	False	
	Load1	False	
	Load2	False	
	Load3	False	
	Load4	False	
	Load5	False	

Register										
Name	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9
Qi	Mult1				Mult0					
Value	6.0	0.0	11.3	0.0	10.0	0.0	0.0	0.0	7.8	0.0

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Clock cycle : 7
PC : 3

Instruction 'MULTD F4 F0 F8' FINISHED at clock 7 in 'Mult0'

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## TIMING TABLE

| PC | INSTRUCTION    | ISSUED | STARTED | FINISHED | Write CDB |
|----|----------------|--------|---------|----------|-----------|
| 0  | MULTD F4 F0 F8 | 1      | 2       | 7        | -         |
| 1  | MULTD F0 F4 F2 | 2      | -       | -        | -         |
| 2  | ADDD F2 F2 F8  | 3      | 4       | 5        | 6         |

## Reservation Station

| Time left | Tag   | OP    | Busy  | valueJ | valueK | Qj    | Qk |
|-----------|-------|-------|-------|--------|--------|-------|----|
|           | Add0  |       | False | 0      | 0      |       |    |
|           | Add1  |       | False | 0      | 0      |       |    |
|           | Add2  |       | False | 0      | 0      |       |    |
| 0         | Mult0 | MULTD | True  | 6.0    | 7.8    |       |    |
| 6         | Mult1 | MULTD | True  | 10.0   | 3.5    | Mult0 |    |

## Load Station

| Time left | Tag   | Busy  | Address |
|-----------|-------|-------|---------|
|           | Load0 | False |         |
|           | Load1 | False |         |
|           | Load2 | False |         |
|           | Load3 | False |         |
|           | Load4 | False |         |
|           | Load5 | False |         |

## Register

| Name  | F0    | F1  | F2   | F3  | F4    | F5  | F6  | F7  | F8  | F9  |
|-------|-------|-----|------|-----|-------|-----|-----|-----|-----|-----|
| Qi    | Mult1 |     |      |     | Mult0 |     |     |     |     |     |
| Value | 6.0   | 0.0 | 11.3 | 0.0 | 10.0  | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |

Clock cycle : 8

PC : 3

Instruction 'MULTD F4 F0 F8' BROADCASTED in CDB at clock 8 with value '46.8'

## TIMING TABLE

| PC | INSTRUCTION    | ISSUED | STARTED | FINISHED | Write CDB |
|----|----------------|--------|---------|----------|-----------|
| 0  | MULTD F4 F0 F8 | 1      | 2       | 7        | 8         |
| 1  | MULTD F0 F4 F2 | 2      | -       | -        | -         |
| 2  | ADDD F2 F2 F8  | 3      | 4       | 5        | 6         |

## Reservation Station

| Time left | Tag   | OP    | Busy  | valueJ | valueK | Qj | Qk |
|-----------|-------|-------|-------|--------|--------|----|----|
|           | Add0  |       | False | 0      | 0      |    |    |
|           | Add1  |       | False | 0      | 0      |    |    |
|           | Add2  |       | False | 0      | 0      |    |    |
|           | Mult0 |       | False | 0      | 0      |    |    |
| 5         | Mult1 | MULTD | True  | 46.8   | 3.5    |    |    |

## Load Station

| Time left | Tag   | Busy  | Address |
|-----------|-------|-------|---------|
|           | Load0 | False |         |
|           | Load1 | False |         |
|           | Load2 | False |         |
|           | Load3 | False |         |
|           | Load4 | False |         |
|           | Load5 | False |         |

## Register

| Name  | F0    | F1  | F2   | F3  | F4   | F5  | F6  | F7  | F8  | F9  |
|-------|-------|-----|------|-----|------|-----|-----|-----|-----|-----|
| Qi    | Mult1 |     |      |     |      |     |     |     |     |     |
| Value | 6.0   | 0.0 | 11.3 | 0.0 | 46.8 | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |

## Register

| Name  | F0    | F1  | F2   | F3  | F4   | F5  | F6  | F7  | F8  | F9  |
|-------|-------|-----|------|-----|------|-----|-----|-----|-----|-----|
| Qi    | Mult1 |     |      |     |      |     |     |     |     |     |
| Value | 6.0   | 0.0 | 11.3 | 0.0 | 46.8 | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |

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Clock cycle : 11

PC : 3

| TIMING TABLE |                |        |         |          |           |  |
|--------------|----------------|--------|---------|----------|-----------|--|
| PC           | INSTRUCTION    | ISSUED | STARTED | FINISHED | Write CDB |  |
| 0            | MULTD F4 F0 F8 | 1      | 2       | 7        | 8         |  |
| 1            | MULTD F0 F4 F2 | 2      | 9       | -        | -         |  |
| 2            | ADDD F2 F2 F8  | 3      | 4       | 5        | 6         |  |

| Reservation Station |       |       |       |        |        |    |    |
|---------------------|-------|-------|-------|--------|--------|----|----|
| Time left           | Tag   | OP    | Busy  | valueJ | valueK | Qj | Qk |
|                     | Add0  |       | False | 0      | 0      |    |    |
|                     | Add1  |       | False | 0      | 0      |    |    |
|                     | Add2  |       | False | 0      | 0      |    |    |
|                     | Mult0 |       | False | 0      | 0      |    |    |
| 2                   | Mult1 | MULTD | True  | 46.8   | 3.5    |    |    |

| Load Station |       |       |         |
|--------------|-------|-------|---------|
| Time left    | Tag   | Busy  | Address |
|              | Load0 | False |         |
|              | Load1 | False |         |
|              | Load2 | False |         |
|              | Load3 | False |         |
|              | Load4 | False |         |
|              | Load5 | False |         |

| Register |       |     |      |     |      |     |     |     |     |     |
|----------|-------|-----|------|-----|------|-----|-----|-----|-----|-----|
| Name     | F0    | F1  | F2   | F3  | F4   | F5  | F6  | F7  | F8  | F9  |
| Qi       | Mult1 |     |      |     |      |     |     |     |     |     |
| Value    | 6.0   | 0.0 | 11.3 | 0.0 | 46.8 | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |

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Clock cycle : 12

PC : 3

| TIMING TABLE |                |        |         |          |           |  |
|--------------|----------------|--------|---------|----------|-----------|--|
| PC           | INSTRUCTION    | ISSUED | STARTED | FINISHED | Write CDB |  |
| 0            | MULTD F4 F0 F8 | 1      | 2       | 7        | 8         |  |
| 1            | MULTD F0 F4 F2 | 2      | 9       | -        | -         |  |
| 2            | ADDD F2 F2 F8  | 3      | 4       | 5        | 6         |  |

| Reservation Station |       |       |       |        |        |    |    |
|---------------------|-------|-------|-------|--------|--------|----|----|
| Time left           | Tag   | OP    | Busy  | valueJ | valueK | Qj | Qk |
|                     | Add0  |       | False | 0      | 0      |    |    |
|                     | Add1  |       | False | 0      | 0      |    |    |
|                     | Add2  |       | False | 0      | 0      |    |    |
|                     | Mult0 |       | False | 0      | 0      |    |    |
| 1                   | Mult1 | MULTD | True  | 46.8   | 3.5    |    |    |

| Load Station |       |       |         |
|--------------|-------|-------|---------|
| Time left    | Tag   | Busy  | Address |
|              | Load0 | False |         |
|              | Load1 | False |         |
|              | Load2 | False |         |
|              | Load3 | False |         |

Load4 False  
Load5 False

Register

| Name  | F0    | F1  | F2   | F3  | F4   | F5  | F6  | F7  | F8  | F9  |
|-------|-------|-----|------|-----|------|-----|-----|-----|-----|-----|
| Qi    | Mult1 |     |      |     |      |     |     |     |     |     |
| Value | 6.0   | 0.0 | 11.3 | 0.0 | 46.8 | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |

Clock cycle : 13  
PC : 3

TIMING TABLE

| PC | INSTRUCTION    | ISSUED | STARTED | FINISHED | Write CDB |
|----|----------------|--------|---------|----------|-----------|
| 0  | MULTD F4 F0 F8 | 1      | 2       | 7        | 8         |
| 1  | MULTD F0 F4 F2 | 2      | 9       | -        | -         |
| 2  | ADDD F2 F2 F8  | 3      | 4       | 5        | 6         |

Reservation Station

| Time left | Tag   | OP    | Busy  | valueJ | valueK | Qj | Qk |
|-----------|-------|-------|-------|--------|--------|----|----|
|           | Add0  |       | False | 0      | 0      |    |    |
|           | Add1  |       | False | 0      | 0      |    |    |
|           | Add2  |       | False | 0      | 0      |    |    |
|           | Mult0 |       | False | 0      | 0      |    |    |
| 0         | Mult1 | MULTD | True  | 46.8   | 3.5    |    |    |

Load Station

| Time left | Tag   | Busy  | Address |
|-----------|-------|-------|---------|
|           | Load0 | False |         |
|           | Load1 | False |         |
|           | Load2 | False |         |
|           | Load3 | False |         |
|           | Load4 | False |         |
|           | Load5 | False |         |

Register

| Name  | F0    | F1  | F2   | F3  | F4   | F5  | F6  | F7  | F8  | F9  |
|-------|-------|-----|------|-----|------|-----|-----|-----|-----|-----|
| Qi    | Mult1 |     |      |     |      |     |     |     |     |     |
| Value | 6.0   | 0.0 | 11.3 | 0.0 | 46.8 | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |

Clock cycle : 14  
PC : 3

Instruction 'MULTD F0 F4 F2' FINISHED at clock 14 in 'Mult1'

TIMING TABLE

| PC | INSTRUCTION    | ISSUED | STARTED | FINISHED | Write CDB |
|----|----------------|--------|---------|----------|-----------|
| 0  | MULTD F4 F0 F8 | 1      | 2       | 7        | 8         |
| 1  | MULTD F0 F4 F2 | 2      | 9       | 14       | -         |
| 2  | ADDD F2 F2 F8  | 3      | 4       | 5        | 6         |

Reservation Station

| Time left | Tag   | OP    | Busy  | valueJ | valueK | Qj | Qk |
|-----------|-------|-------|-------|--------|--------|----|----|
|           | Add0  |       | False | 0      | 0      |    |    |
|           | Add1  |       | False | 0      | 0      |    |    |
|           | Add2  |       | False | 0      | 0      |    |    |
|           | Mult0 |       | False | 0      | 0      |    |    |
| 0         | Mult1 | MULTD | True  | 46.8   | 3.5    |    |    |



# Load Station

| Time left | Tag   | Busy  | Address |
|-----------|-------|-------|---------|
|           | Load0 | False |         |
|           | Load1 | False |         |
|           | Load2 | False |         |
|           | Load3 | False |         |
|           | Load4 | False |         |
|           | Load5 | False |         |

# Register

| Name  | F0    | F1  | F2   | F3  | F4   | F5  | F6  | F7  | F8  | F9  |
|-------|-------|-----|------|-----|------|-----|-----|-----|-----|-----|
| Qi    | Mult1 |     |      |     |      |     |     |     |     |     |
| Value | 6.0   | 0.0 | 11.3 | 0.0 | 46.8 | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |

Clock cycle : 15  
PC : 3

Instruction 'MULTD F0 F4 F2' BROADCASTED in CDB at clock 15 with value '163.8'

# TIMING TABLE

| PC | INSTRUCTION    | ISSUED | STARTED | FINISHED | Write CDB |
|----|----------------|--------|---------|----------|-----------|
| 0  | MULTD F4 F0 F8 | 1      | 2       | 7        | 8         |
| 1  | MULTD F0 F4 F2 | 2      | 9       | 14       | 15        |
| 2  | ADDD F2 F2 F8  | 3      | 4       | 5        | 6         |

# Reservation Station

| Time left | Tag   | OP | Busy  | valueJ | valueK | Qj | Qk |
|-----------|-------|----|-------|--------|--------|----|----|
|           | Add0  |    | False | 0      | 0      |    |    |
|           | Add1  |    | False | 0      | 0      |    |    |
|           | Add2  |    | False | 0      | 0      |    |    |
|           | Mult0 |    | False | 0      | 0      |    |    |
|           | Mult1 |    | False | 0      | 0      |    |    |

# Load Station

| Time left | Tag   | Busy  | Address |
|-----------|-------|-------|---------|
|           | Load0 | False |         |
|           | Load1 | False |         |
|           | Load2 | False |         |
|           | Load3 | False |         |
|           | Load4 | False |         |
|           | Load5 | False |         |

# Register

| Name  | F0    | F1  | F2   | F3  | F4   | F5  | F6  | F7  | F8  | F9  |
|-------|-------|-----|------|-----|------|-----|-----|-----|-----|-----|
| Qi    |       |     |      |     |      |     |     |     |     |     |
| Value | 163.8 | 0.0 | 11.3 | 0.0 | 46.8 | 0.0 | 0.0 | 0.0 | 7.8 | 0.0 |