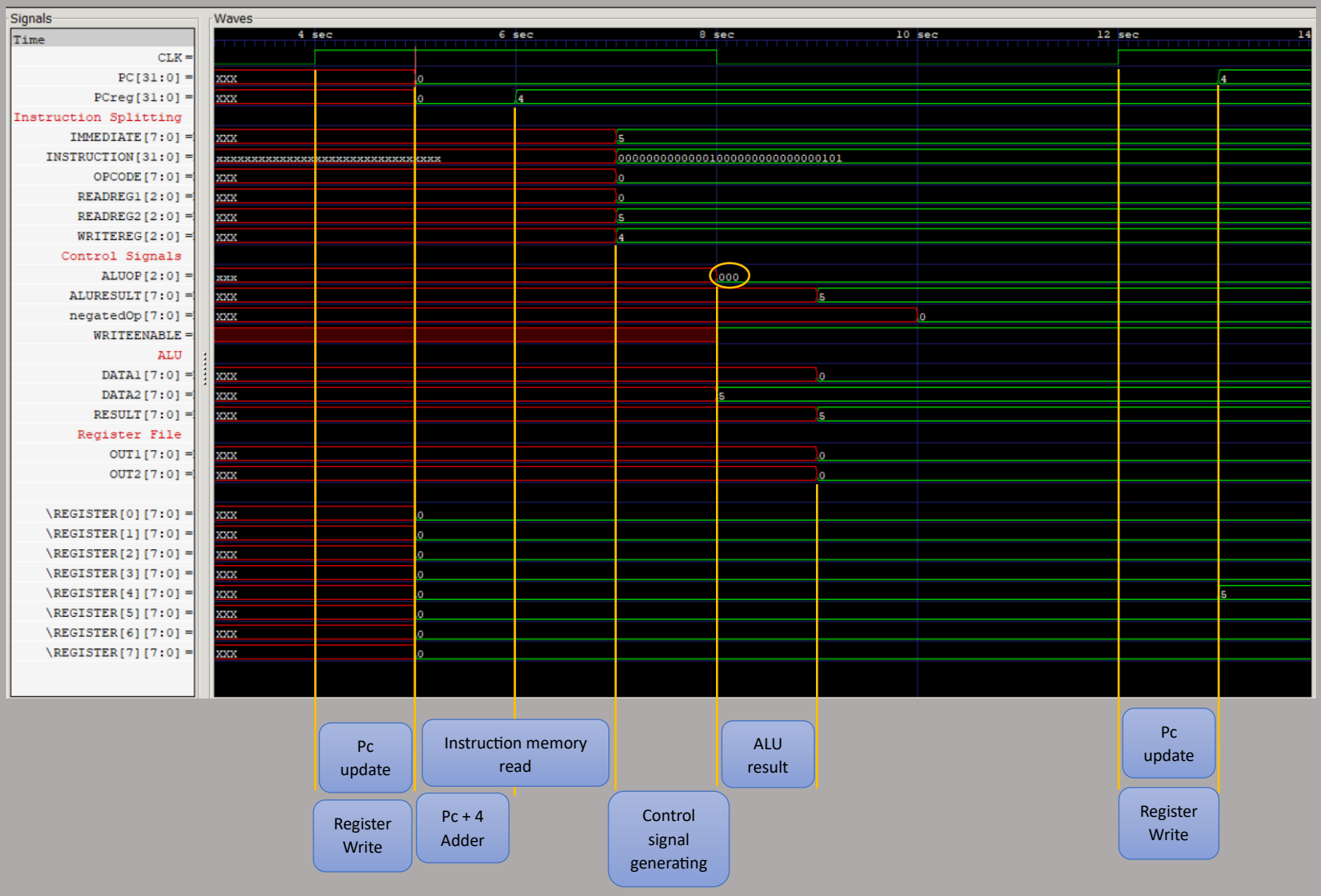
Lab 5 – Part 3 Group 49

Timing Diagrams

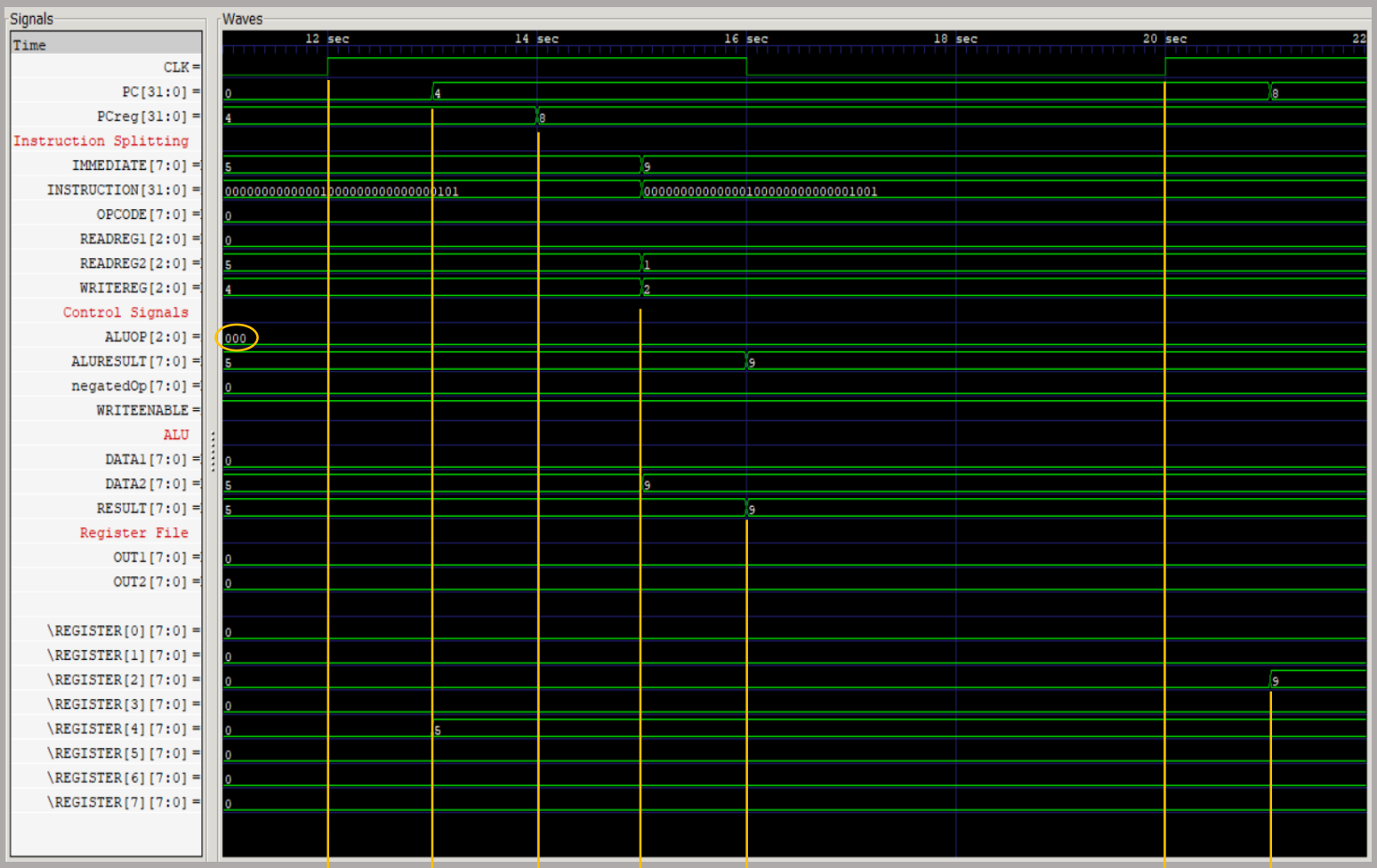
Instructions

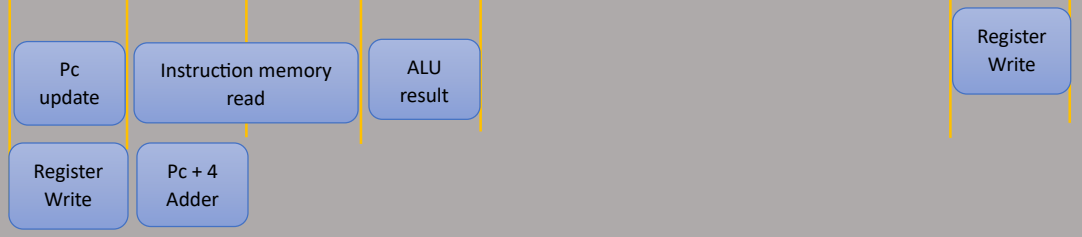
```
ASM sample_program.s
1   //This is a sample assembly program for CO224 Lab 5
2   loadi 4 0x05     // r4 = 5
3   loadi 2 0x09     // r2 = 9
4   add 6 4 2        // r6 = r4 + r2
5   mov 0 6          // r0 = r6
6   loadi 1 0x01     // r1 = 1
7   add 2 2 1        // r2 = r2 + r1 (r2++)
8   //j 0xFB             // jump to line 4
9
```

1. loadi 4 0x05



2. loadi 2 0x09

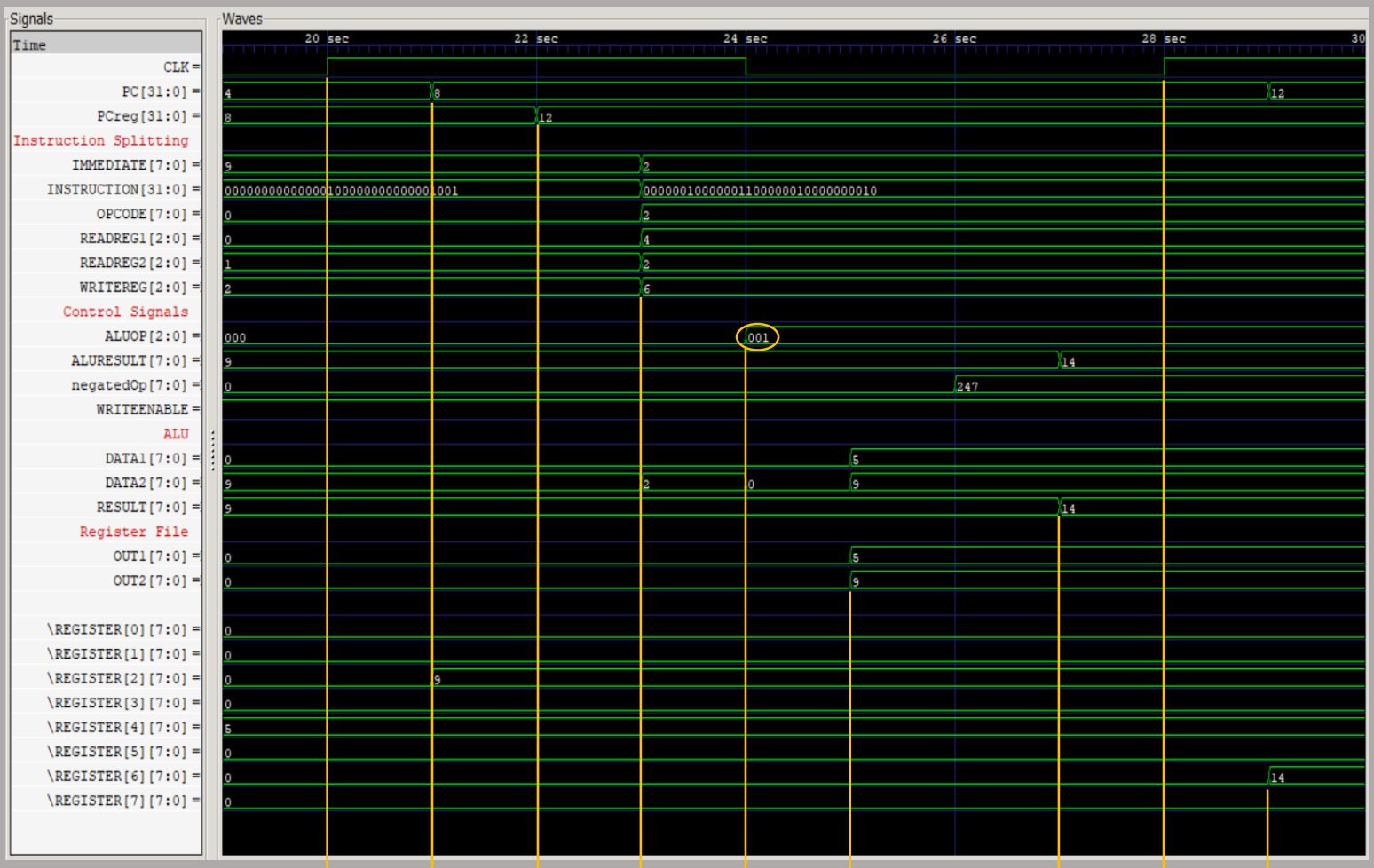




loadi:

PC Update	Instruction Memory Read		ALU	
#1	#2		#1	
	PC+4 Adder	Decode		
	#1	#1		
Register Write				
#1				

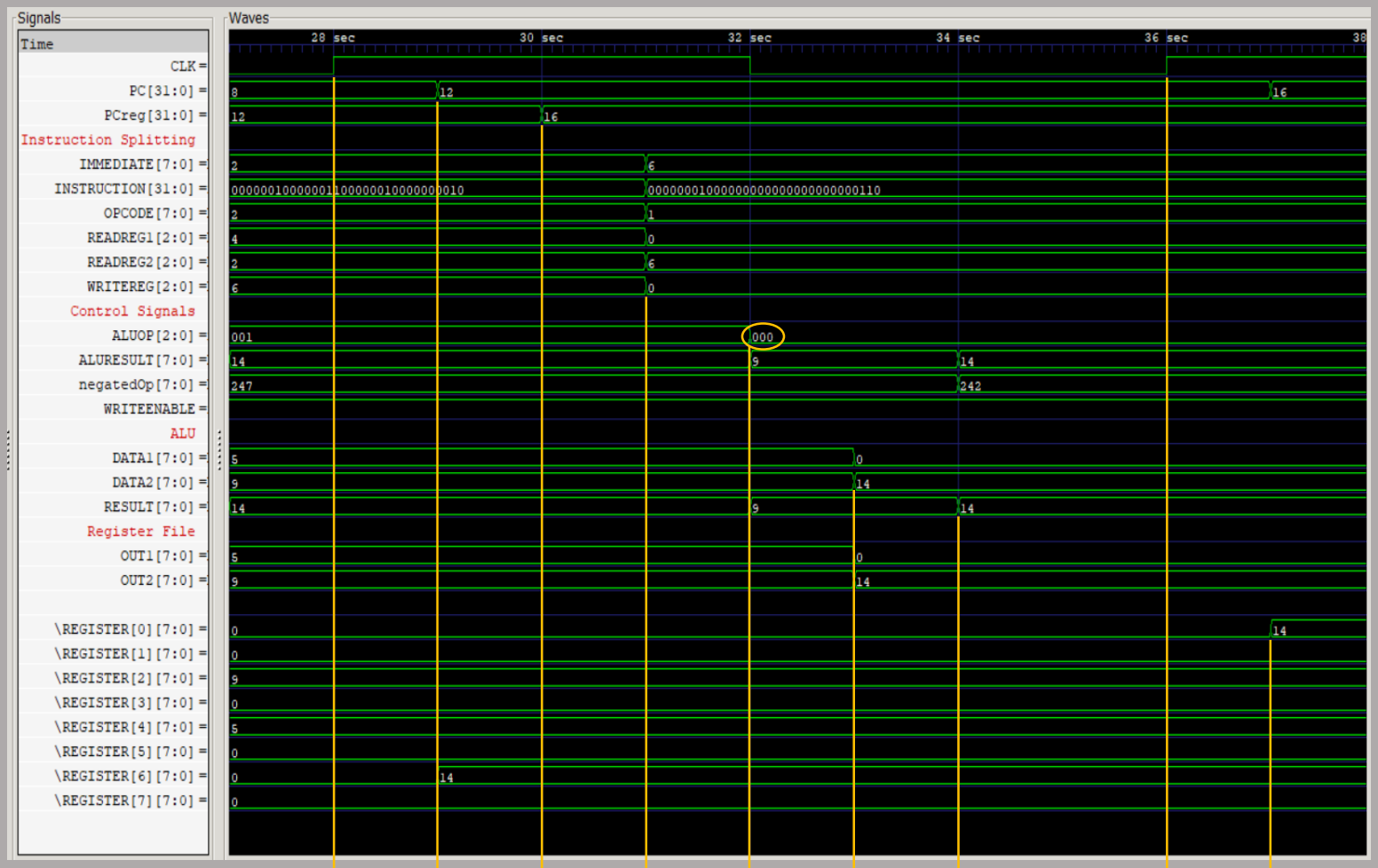
3. add 6 4 2



add:

PC Update	Instruction Memory Read		Register Read	ALU	
#1	#2		#2	#2	
	PC+4 Adder		Decode		
	#1		#1		
Register Write					
#1					

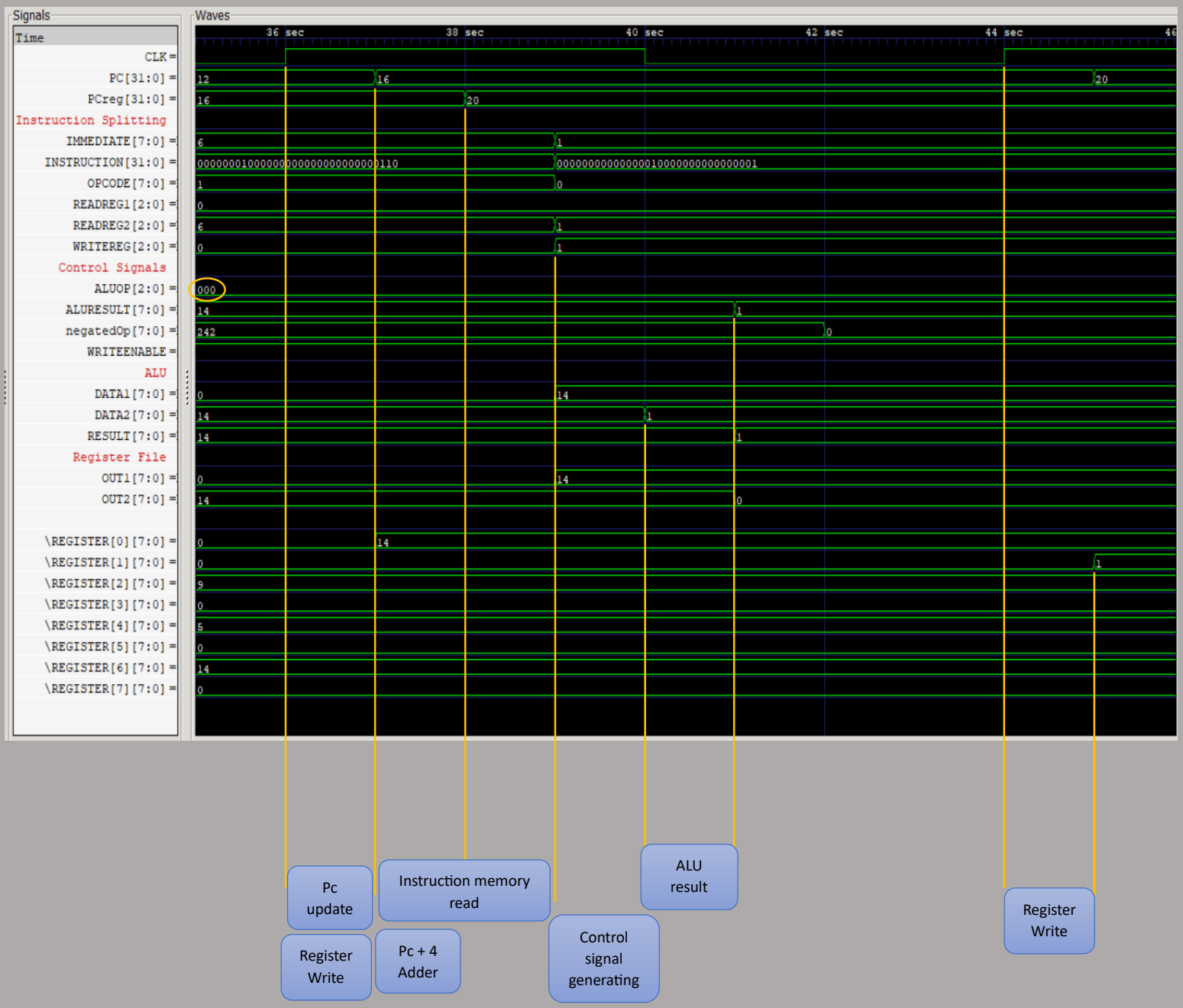
4. mov 0 6



and/or/mov:

PC Update	Instruction Memory Read		Register Read	ALU	
#1	#2		#2	#1	
	PC+4 Adder		Decode		
	#1		#1		
Register Write					
#1					

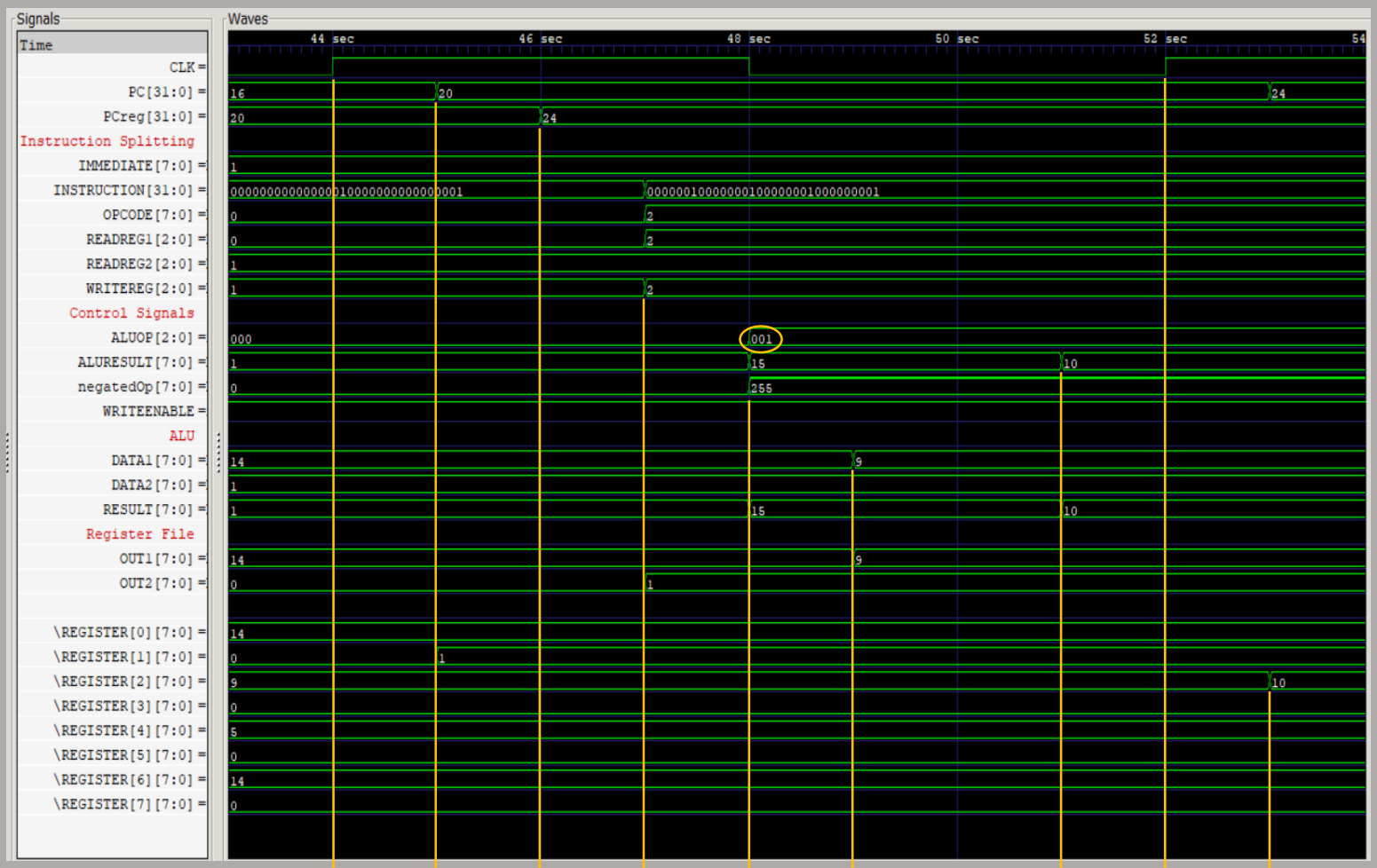
5. loadi 1 0x01

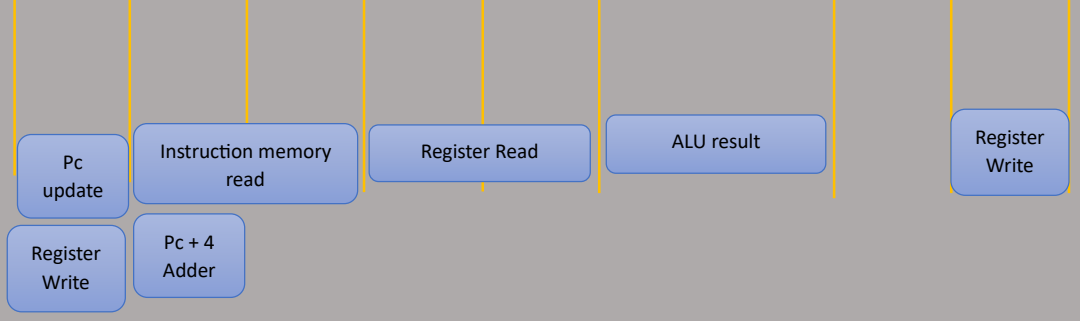


loadi:

PC Update	Instruction Memory Read		ALU	
#1	#2		#1	
	PC+4 Adder		Decode	
	#1		#1	
Register Write				
#1				

6. add 2 2 1





add:

PC Update	Instruction Memory Read		Register Read	ALU	
#1	#2		#2	#2	
	PC+4 Adder		Decode		
	#1		#1		
Register Write					
#1					