

Program Execution

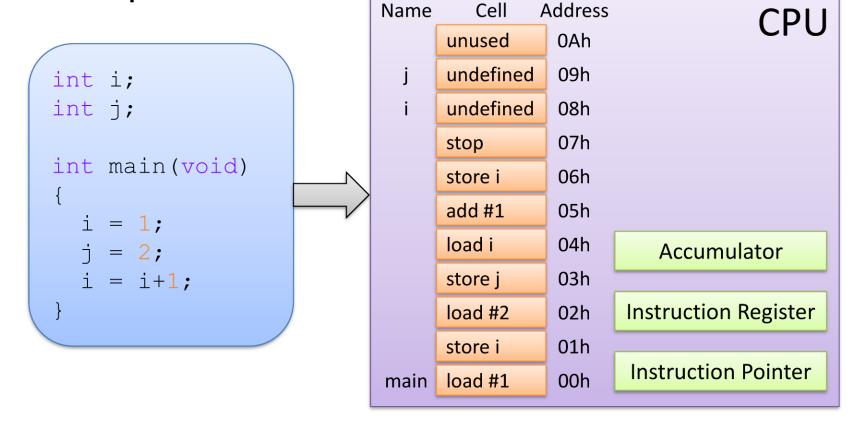
Embedded Systems

Wolfgang Neff



Program Execution (1)

Compilation





Program Execution (2)

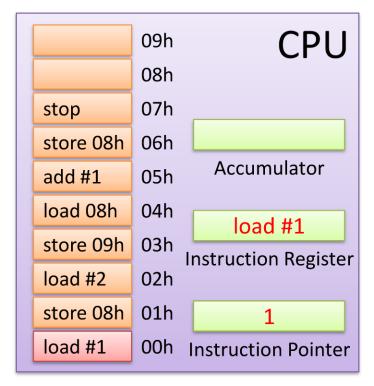
Initial State

	09h	CPU
	08h	3. 3
stop	07h	
store 08h	06h	
add #1	05h	Accumulator
load 08h	04h	
store 09h	03h	nstruction Register
load #2	02h	nstruction register
store 08h	01h	0
load #1	00h	nstruction Pointer



Program Execution (3)

First Instruction – Instruction Fetch

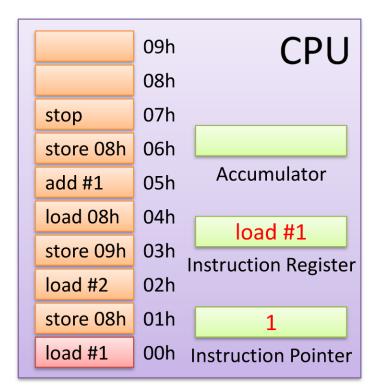


After Instruction Fetch

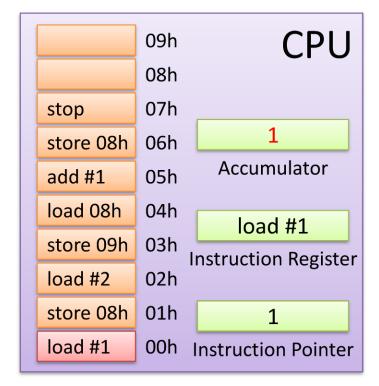


Program Execution (3)

First Instruction – Execution



After Instruction Fetch

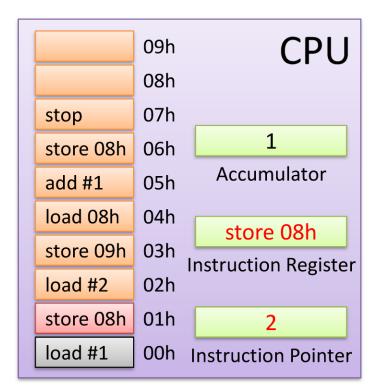


After Execute



Program Execution (4)

Second Instruction – Instruction Fetch

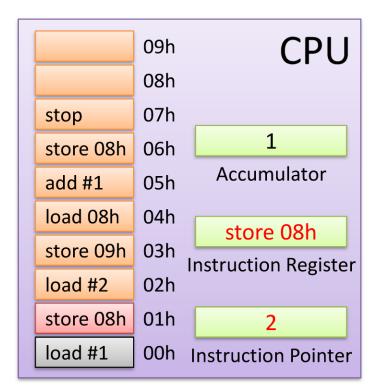


After Instruction Fetch

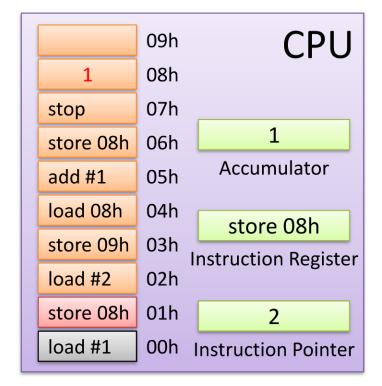


Program Execution (4)

Second Instruction – Execution



After Instruction Fetch

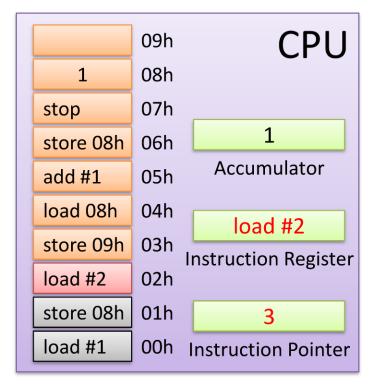


After Execute



Program Execution (5)

Third Instruction – Instruction Fetch

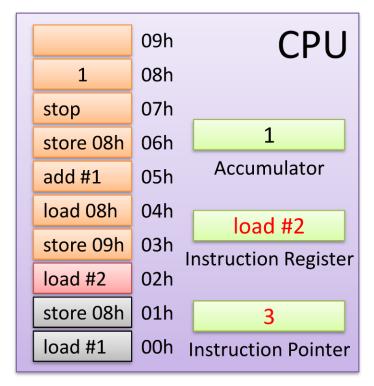


After Instruction Fetch

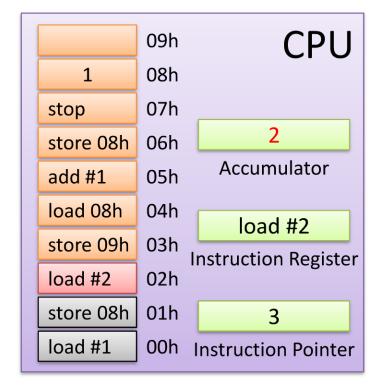


Program Execution (5)

Third Instruction – Execution



After Instruction Fetch

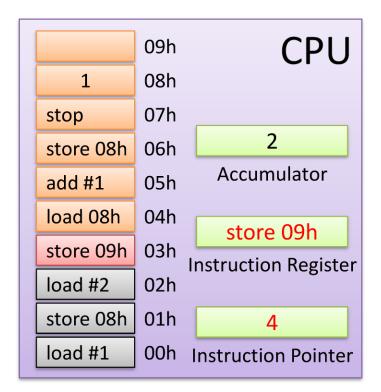


After Execute



Program Execution (6)

Fourth Instruction – Instruction Fetch

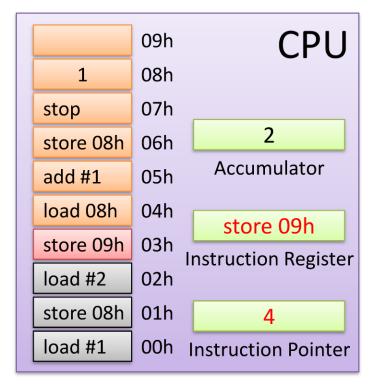


After Instruction Fetch

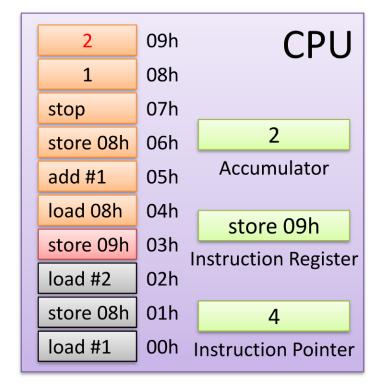


Program Execution (6)

Fourth Instruction – Execution



After Instruction Fetch

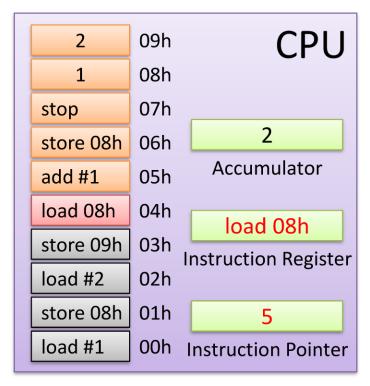


After Execute



Program Execution (7)

Fifth Instruction – Instruction Fetch

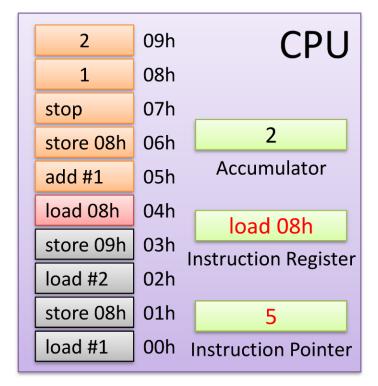


After Instruction Fetch

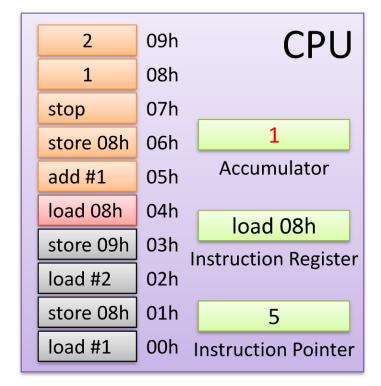


Program Execution (7)

Fifth Instruction – Execution



After Instruction Fetch

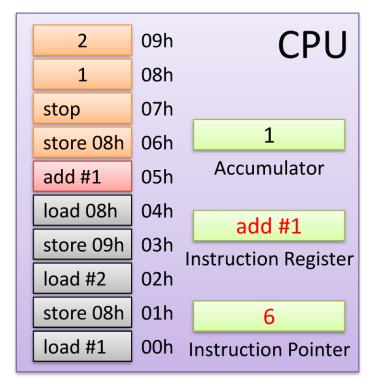


After Execute



Program Execution (8)

Sixth Instruction – Instruction Fetch

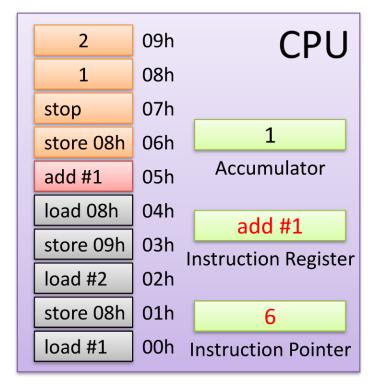


After Instruction Fetch

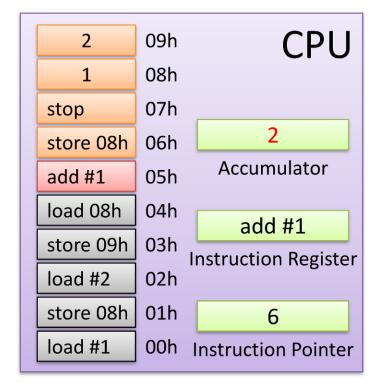


Program Execution (8)

Sixth Instruction – Execution



After Instruction Fetch

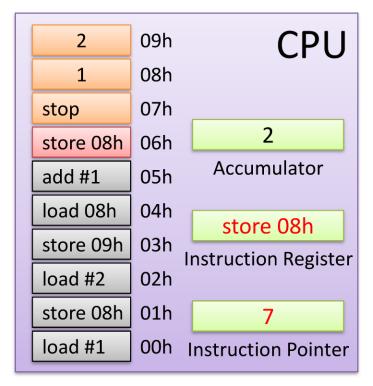


After Execute



Program Execution (9)

Seventh Instruction – Instruction Fetch

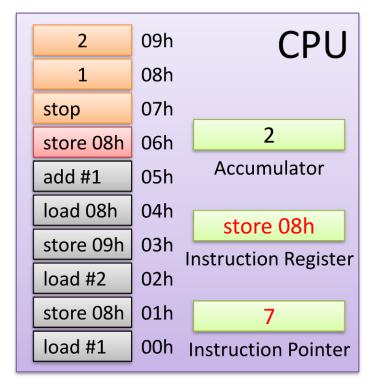


After Instruction Fetch

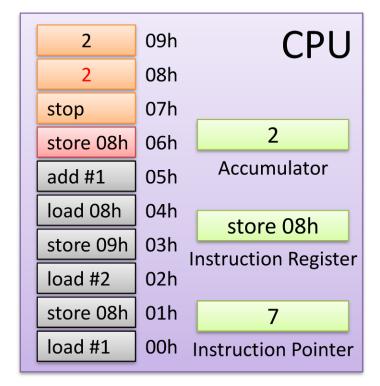


Program Execution (9)

Seventh Instruction – Execution



After Instruction Fetch

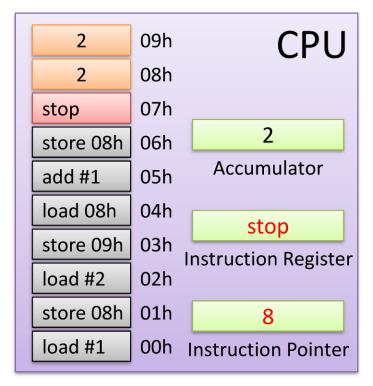


After Execute



Program Execution (10)

Eight Instruction – Instruction Fetch

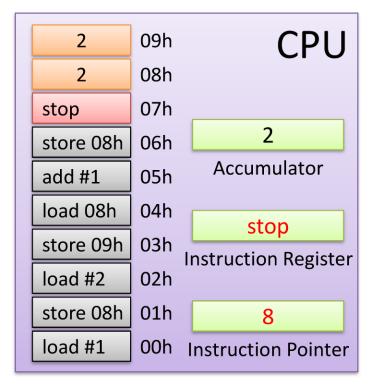


After Instruction Fetch

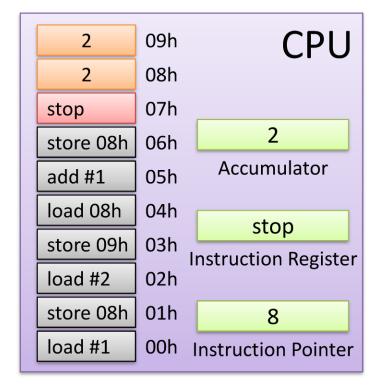


Program Execution (10)

Eight Instruction – Execution



After Instruction Fetch



After Execute



Program Execution (11)

Final State

