

CS613 Homework 5 - full program/all dependencies	Code	Dependencies
	1 add x1, x0, x0 // Zero Register #0	None
	2 addi x2, x1, 10 // Set counter (lcv) #10	Line 2, x1 depends on line 1's x1, true data dependency
	3 addi x5, x0, 2000 // get address of A[]'s first element	none
	4 Strt: ld x7, 0(x5) // get A[i]	Line 4, x5 depends on line 3's x5, true data dependency
	5 addi x7, x7, 12	line 5, x7 depends on line 4's x7, true data dependency
	6 sd x7, 0(x5)	line 6, x7 depends on line 5's x7, true data dependency
	7 addi x5, x5, 8	none
	8 subi x2, x2, 1 // decrement lcv #9	none
	9 bne x2, x1, Strt	line 9, x2 depends on line 8's x2, true data dependency
	10 Strt: ld x7, 0(x5)	line 10, x5 depends on line 7's x5, true data dependency
	11 addi x7, x7, 12	line 11, x7 depends on line 10's x7, true data dependency
	12 sd x7, 0(x5)	line 12, x7 depends on line 11's x7, true data dependency
	13 addi x5, x5, 8	none
	14 subi x2, x2, 1 // decrement lcv #8	none
	15 bne x2, x1, Strt	line 15, x2 depends on line 14's x2, true data dependency
	16 Strt: ld x7, 0(x5)	line 16, x5 depends on line 3's x5, true data dependency
	17 addi x7, x7, 12	line 17, x7 depends on line 16's x7, true data dependency
	18 sd x7, 0(x5)	line 18, x7 depends on line 17's x7, true data dependency
	19 addi x5, x5, 8	none
	20 subi x2, x2, 1 // decrement lcv #7	none
	21 bne x2, x1, Strt	line 21, x2 depends on line 20's x2, true data dependency
	22 Strt: ld x7, 0(x5)	line 22, x5 depends on line 19's x5, true data dependency
	23 addi x7, x7, 12	line 23, x7 depends on line 22's x7, true data dependency
	24 sd x7, 0(x5)	line 24, x7 depends on line 23's x7, true data dependency
	25 addi x5, x5, 8	none
	26 subi x2, x2, 1 // decrement lcv #6	none
	27 bne x2, x1, Strt	line 27, x2 depends on line 26's x2, true data dependency
	28 Strt: ld x7, 0(x5)	line 28, x5 depends on line 25's x5, true data dependency
	29 addi x7, x7, 12	line 29, x7 depends on line 28's x7, true data dependency
	30 sd x7, 0(x5)	line 30, x7 depends on line 29's x7, true data dependency
	31 addi x5, x5, 8	none
	32 subi x2, x2, 1 // decrement lcv #5	none
	33 bne x2, x1, Strt	line 33, x2 depends on line 32's x2, true data dependency
	34 Strt: ld x7, 0(x5)	line 34, x5 depends on line 31's x5, true data dependency
	35 addi x7, x7, 12	line 35, x7 depends on line 34's x7, true data dependency
	36 sd x7, 0(x5)	line 36, x7 depends on line 35's x7, true data dependency
	37 addi x5, x5, 8	none
	38 subi x2, x2, 1 // decrement lcv #4	none
	39 bne x2, x1, Strt	line 39, x2 depends on line 38's x2, true data dependency
	40 Strt: ld x7, 0(x5)	line 40, x5 depends on line 37's x5, true data dependency
	41 addi x7, x7, 12	line 41, x7 depends on line 40's x7, true data dependency
	42 sd x7, 0(x5)	line 42, x7 depends on line 41's x7, true data dependency
	43 addi x5, x5, 8	none
	44 subi x2, x2, 1 // decrement lcv #3	none
	45 bne x2, x1, Strt	line 45, x2 depends on line 44's x2, true data dependency
	46 Strt: ld x7, 0(x5)	line 46, x5 depends on line 43's x5, true data dependency
	47 addi x7, x7, 12	line 47, x7 depends on line 46's x7, true data dependency
	48 sd x7, 0(x5)	line 48, x7 depends on line 47's x7, true data dependency
	49 addi x5, x5, 8	none
	50 subi x2, x2, 1 // decrement lcv #2	none
	51 bne x2, x1, Strt	line 51, x2 depends on line 50's x2, true data dependency
	52 Strt: ld x7, 0(x5)	line 52, x5 depends on line 49's x5, true data dependency
	53 addi x7, x7, 12	line 53, x7 depends on line 52's x7, true data dependency
	54 sd x7, 0(x5)	line 54, x7 depends on line 53's x7, true data dependency
	55 addi x5, x5, 8	none
	56 subi x2, x2, 1 // decrement lcv #1	none
	57 bne x2, x1, Strt	line 57, x2 depends on line 56's x2, true data dependency
	58 Strt: ld x7, 0(x5)	line 58, x5 depends on line 55's x5, true data dependency
	59 addi x7, x7, 12	line 59, x7 depends on line 58's x7, true data dependency
	60 sd x7, 0(x5)	line 60, x7 depends on line 59's x7, true data dependency
	61 addi x5, x5, 8	none
	62 subi x2, x2, 1 // decrement lcv #0	none
	63 bne x2, x1, Strt	line 63, x2 depends on line 62's x2, true data dependency
	64 End: xor x4, x1 // first loop, don't reach here	line 64, depends on line 63, Control dependency