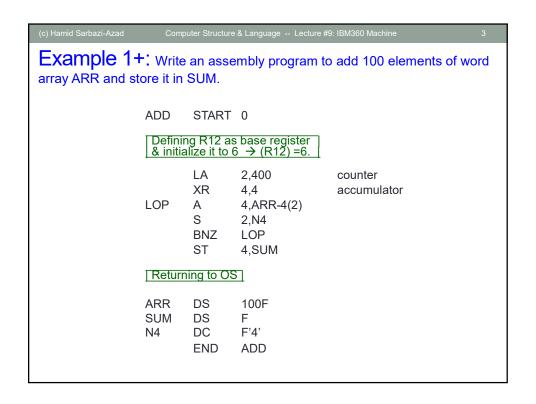
Computer Structure and Language

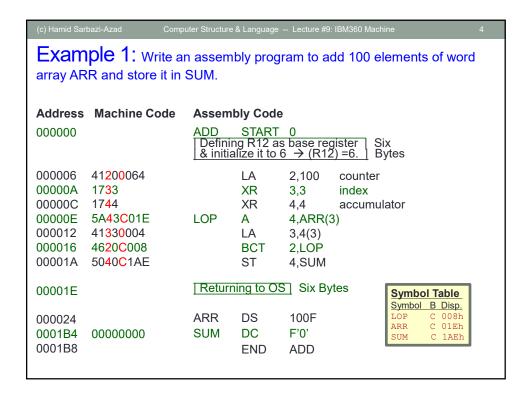
Hamid Sarbazi-Azad

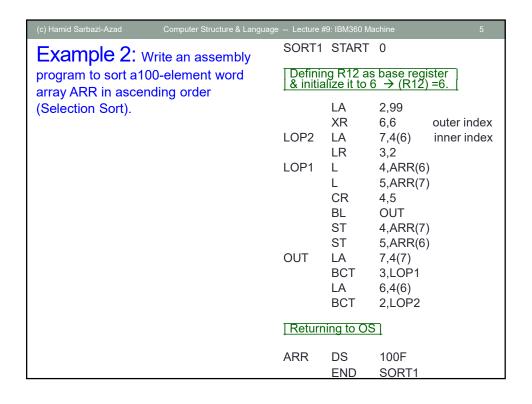
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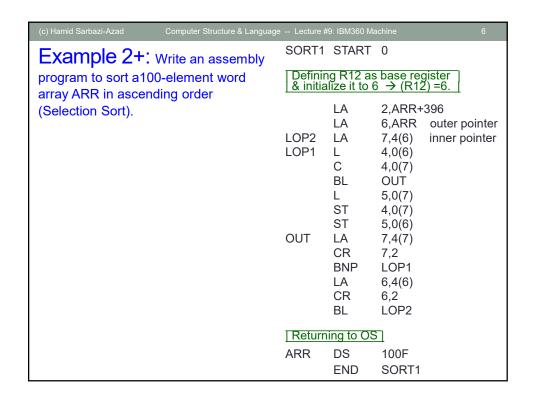


```
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                       Computer Structure & Language -- Lecture #9: IBM360 Machine
Example 1: Write an assembly program to add 100 elements of word
array ARR and store it in SUM.
                   ADD
                            START 0
                    Defining R12 as base register & initialize it to 6 → (R12) =6.
                                     2,100
                            XR
                                              index = SR 3,3 = LA 3,0
                                     3,3
                            XR
                                     4,4
                                              accumulator = SR 4,4 = LA 4,0 = LR 4,3
                   LOP
                                     4,ARR(3)
                                     3,4(3)
                            LA
                            BCT
                                     2,LOP
                                     4,SUM
                            ST
                   Returning to OS
                   SUM
                            DS
                   ARR
                            DS
                                     100F
                            END
                                     ADD
```









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Example 3: Write an as	SORT:	2 START	0	
program to sort a100-element word array ARR in ascending order	nt word Defin	Defining R12 as base register & initialize it to 6 → (R12) =6.		
(Bubble Sort).		LA XR	2,99 7,7	
	LOP2	LR LR	6,7 3,2	
	LOP1	L L	4,ARR(6) 5,ARR+4(6)	
		CR BL	4,5 OUT	
		ST ST	4,ARR+4(6)	
	OUT	LA BCT	6,4(6)	
		LA BCT	7,4(7)	
	∏Retur	[Returning to OS]		
	ARR	DS END	100F SORT2	

