

Q#1

Compare zero-, one-, two-, and three-address machines by writing programs to compute $X = (A + B * C) / (D - E * F)$

for each of the four machines. The instructions available for use are as follows:

0 Address	1 Address	2 Address	3 Address
PUSH M	LOAD M	MOVE ($X \leftarrow Y$)	MOVE ($X \leftarrow Y$)
POP M	STORE M	ADD ($X \leftarrow X + Y$)	ADD ($X \leftarrow Y + Z$)
ADD	ADD M	SUB ($X \leftarrow X - Y$)	SUB ($X \leftarrow Y - Z$)
SUB	SUB M	MUL ($X \leftarrow X \times Y$)	MUL ($X \leftarrow Y \times Z$)
MUL	MUL M	DIV ($X \leftarrow X / Y$)	DIV ($X \leftarrow Y / Z$)
DIV	DIV M		

solution:

بس اطلع على اول 3 والاخيرة انساك منها.

PUSH A	LOAD E	MOV R0, E	MUL R0, E, F
PUSH B	MUL F	MUL R0, F	SUB R0, D, R0
PUSH C	STORE T	MOV R1, D	MUL R1, B, C
MUL	LOAD D	SUB R1, R0	ADD R1, A, R1
ADD	SUB T	MOV R0, B	DIV X, R0, R1
PUSH D	STORE T	MOV R0, C	
PUSH E	LOAD B	ADD R0, A	
PUSH F	MUL C	DIV R0, R1	
MUL	ADD A	MOV X, R0	
SUB	DIV T		
DIV	STO X		
POP X			