

## ADDRESSING MODE

ADD R0, R1, R2

Dest SRC1 SRC2

3 operands and all 3 use Register mode

AND R0, R0, #0 ← Immediate

LD R3, x4F

PC-Relative or PC + offset

+2  $\left\{ \begin{array}{l} \text{Base + offset} \\ \text{Indirect} \end{array} \right.$

PS 8 compute  $3+2+1$  and store @  $M[x3050]$

```
00 .ORIG x3000
01 AND R0, R0, #0
02 ADD R0, R0, #3
03 ADD R0, R0, #2
04 ADD R0, R0, #1
   ST R0, x4B
   TRAP x25  $\equiv$  HALT
   .END
   .ORIG x3050
   .BLKW #1
   .END
```

PS 1

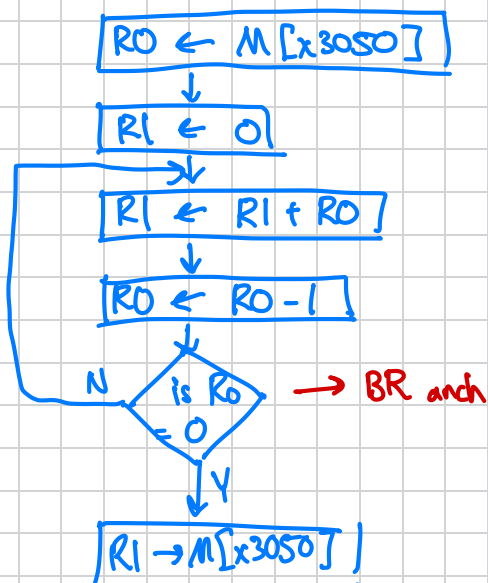
Compute  $N + (N-1) + (N-2)$

Sum =

N is @ x3050 Sum is @ x3051

Algorithm

- ① get N into (R0)
- ② Set sum = 0 (R1)
- ③ Sum = Sum + R0
- ④ Decrement (R0)
- ⑤ If R0 is nonzero then go back to ③
- ⑥ Store R1 to x3051



```
.ORIG x3000
00 LD R0, x4F
01 AND R1, R1, #0
02 ADD R1, R1, R0
03 ADD R0, R0, #-1
04 BR np #-3
05 ST R1, x4B
    HALT .END
```

BR Z  $\Rightarrow Z = 1$   
BR NP  $\Rightarrow Z \neq 1$