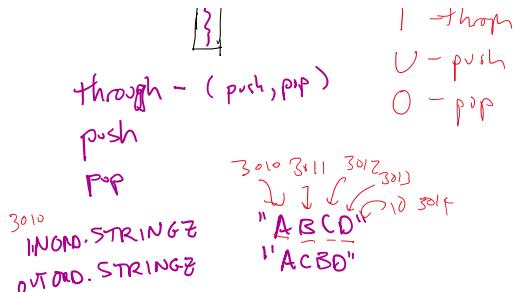
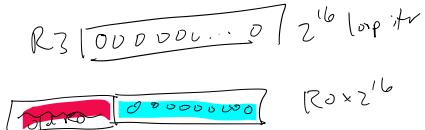
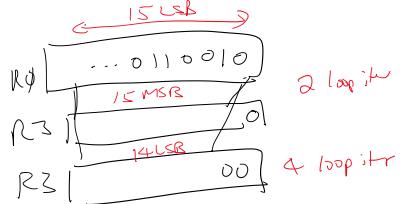


## Lecture 5

Tuesday, September 6, 2022 10:57 AM



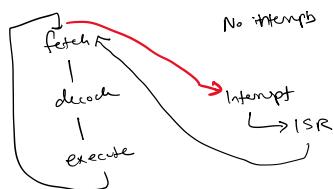
### Polling vs Interrupts

`LDI R0, KBSR  
BRzp #.2  
LDI R0, KBDR` ] inefficient!

`LDI R0, KBSR  
BRA HANDLE-KEY  
;  
D...  
;` adds code complexity  
break tasks up  
save R0, go back to same place  
programmer decides!

interrupt ring checklist vs polling regularly check outside

### Normal LC-3 execution

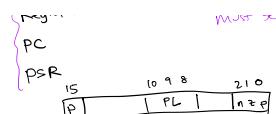


### Interrupt

- ① Cannot support infinitely nested interrupts
- Priority can only interrupt lower priority execution
- ② Handling
  - initiate interrupt (INT)
  - service (os code to handle the interrupt)
  - return

### Processor State

MUST NOT CHANGE from interrupt happens → return  
(Registers (R0-R7) ... to saved)



Supervisor Stack  
Every interrupt pushes 2 things to Supervisor Stack:

- ① PC
- ② PSR

R6 stack pointer  
in user mode USP  
in supervisor mode SSP