

# ICLAB-Lab02

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# Area\*Latency

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- Reduce the latency -> customize all the cases!
- 17 cases:

## REST\_0

five\_5A0B  
five\_3A2B  
five\_2A3B  
five\_1A4B  
five\_0A5B

## REST\_1

four\_4A0B  
four\_3A1B  
four\_2A2B  
four\_1A3B  
four\_0A4B

## REST\_2

three\_3A0B  
three\_2A1B  
three\_1A2B  
three\_0A3B

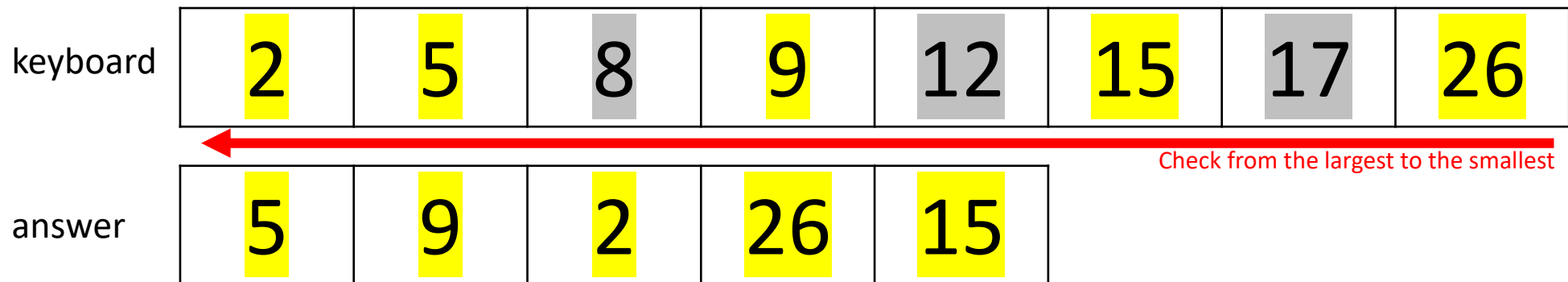
## REST\_3

two\_2A0B  
two\_1A1B  
two\_0A2B

# REST\_0~REST\_3

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- Since the keyboard are sorted, try to find the digits that are neither “A” nor “B” in keyboard(from the largest to the smallest) and store them in the register(not\_ans)
- EX: REST\_2: find the largest(not\_ans[0]) and the second large(not\_ans[1]) value that doesn't exist in the answer



>>> not\_ans[0] = 17, not\_ans[1] = 12 (later will use these two values in the case of REST\_2 )

# REST\_2: Take 3A0B for example

- If  $A > B > C$ , and  $D > E > F$ , then  $AD + BE + CF$  is the biggest combination

- |   |   |   |   |   |
|---|---|---|---|---|
| V | V | V | x | x |
| V | V | x | V | x |
| V | V | x | x | V |
| V | x | V | V | x |
| V | x | V | x | V |
| V | x | x | V | V |
| x | V | V | V | x |
| x | V | V | x | V |
| x | V | x | V | V |
| x | x | V | V | V |

V : right place and right digit

x : neither A nor B (place not\_ans[0] and not\_ans[1] according to their weight)

keyboard

2	5	8	9	12	15	17	26
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answer

5	9	2	26	15
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weight

8	5	13	9	1
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12	9	2	17	15
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Since  $9 > 8$ , place not\_ans[1]

Since  $9 > 8$ , place not\_ans[0]

not\_ans[0] = 17, not\_ans[1] = 12

Need only 10 cycles for 3A0B!

# Appendix: # of cycles

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five\_5A0B: 1 cycle

five\_3A2B: 10 cycles

five\_2A3B: 20 cycles

five\_1A4B: 45 cycles

five\_0A5B: 44 cycles

four\_4A0B: 5 cycles

four\_3A1B: 20 cycles

four\_2A2B: 90 cycles

four\_1A3B: 220 cycles

four\_0A4B: 265 cycles

three\_3A0B: 10 cycles

three\_2A1B: 60 cycles

three\_1A2B: 210 cycles

three\_0A3B: 340 cycles

two\_2A0B: 10 cycles

two\_1A1B: 60 cycles

two\_0A2B: 130 cycles

Thank you!