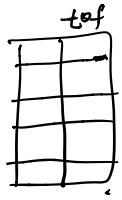
LRU PAGE REPLACEMENT ALGORITHM

- Using recent past as the approximation for the future
- Replace page from past that has not been used for longest period of time
- Optimal page replacement looking backwards
- Used in most modern operating systems
- Doesn't suffer from Belady's anomaly
- Implementations
  - Hardware: Use a counter with cpu and a field for time-of-use in each page table entry.
  - Use stack of page numbers. When a page is referenced, bring it at the top.
    - most recently used - top
    - least recently used - bottom



7	0	1	2	0	3	0	4	2	3	0	3	2	1	2	0	1	7	0	1	pages
7	7	7	2		2		4	4	4	0			1		1		1			frame 0
	0	0	0		0		0	0	3	3			3		0		0			frame 1
		1	1		3		3	2	2	2			2		2		7			frame 2

20 - 8 = 12

LRU: 12 → $\frac{12}{20} \times 100 = 60\%$

FIFO: 15 → 75%

Optimal: 9 → 45%