

PFDS §5.2 Queues

@shtaag

First...

- ✦ <http://www.kmonos.net/pub/Presen/PFDS.pdf>

Banker's method

- ✧ $\text{snoc} = 1 \text{ step} + 1 \text{ credit}$
- ✧ $\text{tail (w/o reverse)} = 1 \text{ step}$
- ✧ $\text{tail (w/ reverse)} = (m+1) \text{ steps} - m \text{ credits}$
- ✧ $\text{tail} . \text{tail} . \text{tail} . \text{snoc } 3 . \text{snoc } 2 . \text{snoc } 1$

real amortized

▪ snoc 1 -> [] [1] -> [1] []	2	2
▪ snoc 2 -> [1] [2]	1	2
▪ snoc 3 -> [1] [3,2]	1	2
▪ tail -> [] [3,2] -> [2,3] []	3	1
▪ tail -> [3] []	1	1
▪ tail -> [] []	1	1

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real amortized

- snoc 1 -> [] [1] -> [1] [] 2 2
- snoc 2 -> [1] [2] 1 2
- snoc 3 -> [1] [3,2] 1 2
- tail -> [] [3,2] -> [2,3] [] 3 1

▪ tail -> [3] [] 1 1

▪ tail -> []

借金する前に積み立てておく

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Physicist's method

- ✧ Φ = length of the rear list
- ✧ $\text{snoc} = 1 \text{ step} + 1 \text{ potential (for 1 elem)}$
- ✧ $\text{tail (w/o reverse)} = 1 \text{ step}$
- ✧ $\text{tail (w/ reverse)} = (m+1) \text{ steps} - m \text{ potentials}$