



## Query Optimization

11. Exercise

Due January 29, 2018, 9 AM

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### Exercise 1

Given a relation with 3 pages and two tuples per page, compute the average number of accessed pages when reading 4 not necessarily distinct tuples.

### Exercise 2

Include the expected number of accessed pages when reading 1, 2, ..., 1000 not necessarily distinct tuples using Cheung's formula into your plot from the previous exercise. In addition, include the approximation of Cardenas into your plot.

### Exercise 3

Given the following histogram of an integer attribute  $R.a$ :

bucket	[0, 20)	[20, 40)	[40, 60)	[60, 80)	[80, 100)
count	1	3	4	2	0

Estimate the number of elements for which  $R.a \geq 55$  holds true.