

SPA3 assignment 06

6.2

fails = [1, 7, 5, 57, 8, 6, 22, 13, 41, 18, 0, 29, 35, 17, 4, 25, 54, 39, 6, 7]

f.sorted = [0, 1, 4, 5, 6, 6, 7, 7, 8, 13, 17, 18, 22, 25, 29, 35, 39, 41, 54, 57]

different strategies to obtain an estimate of p

- mean

$$\mu = \frac{1}{20} \sum_{i=0}^{19} \text{fails}[i] = 19,05$$

→ it takes about 19 unsuccessful mails until the prof responds

→ prof answers every 20 mails

$$\rightarrow p = \frac{1}{20} = 0,05$$

- median

$$\mu = \frac{13+17}{2} = 15$$

$$\rightarrow p = \frac{1}{16} = 0,0625$$

- 50% quantil

we start to count at 0

$$0,5 \cdot 20 = 10, \text{ fails}[9] = 13 \rightarrow p = \frac{1}{14} \approx 0,0714$$

All 3 strategies have their advantages and disadvantages.

Median and 50% quantil depend a lot on how the values are distributed.

Still all methods return a probability between $\sim 5\%$ and $\sim 7\%$, somewhere inbetween lies the truth.

Nevertheless the prof should really work on her responding behaviour!