

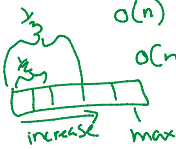
def max(n)

$O(1)$  largest = n[0]

$O(n)$  for i in range(n):

$O(n)$  if n[i] > n[0]:

fuzzy largest = n[i]  $\rightarrow$  worst  $\rightarrow O(n)$   
 return largest  $O(1)$  best  $\rightarrow O(\log n)$



$$1 + \frac{1}{2} + \frac{1}{3} \dots + \frac{1}{n} = \sum_{i=1}^n \frac{1}{i} \left\{ \begin{array}{l} n\text{-th} \\ \text{harmonic} \end{array} \right\} \left\{ \begin{array}{l} O(\log n) \\ \text{by making search} \\ \text{smaller each time} \end{array} \right.$$