

Homework 0: The Foster Method

Sunday, January 30, 2022 2:29 PM

Data: abcdefghbcdsb

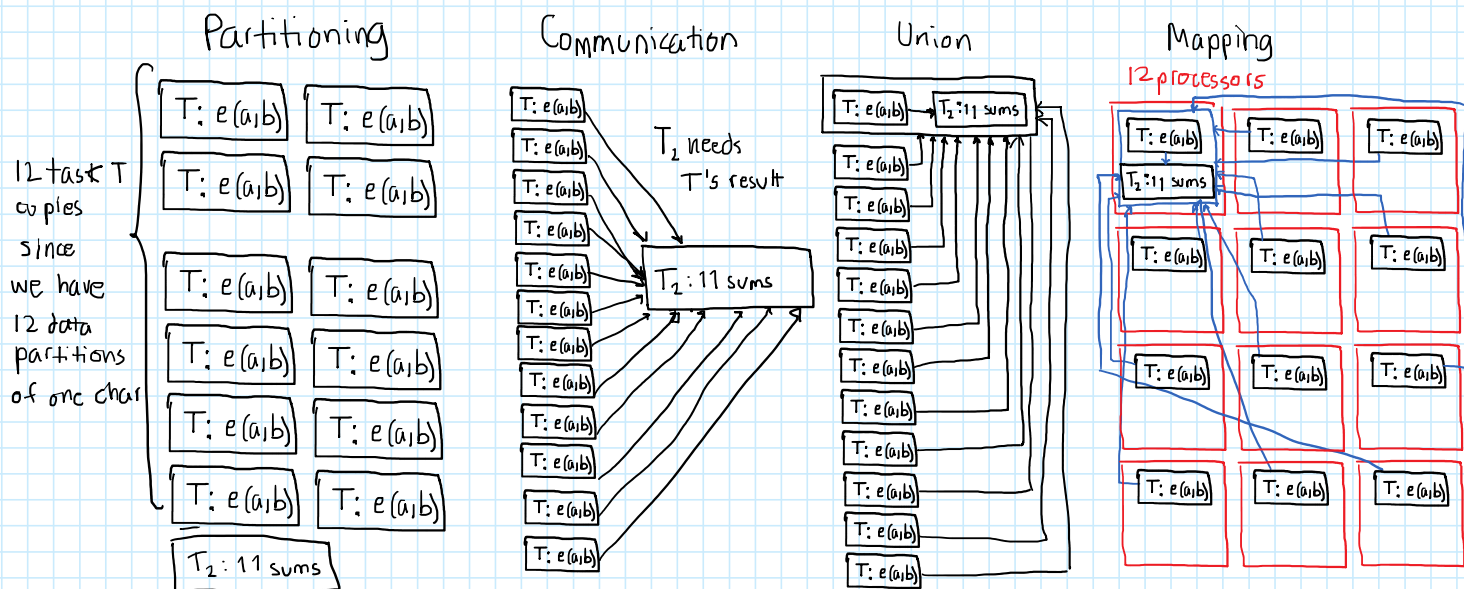
Task: count the number of "b" in the data.

↳ basic operation: equals(a,b) $\begin{cases} T & \text{if } a=b \\ F & \text{if } a \neq b \end{cases} \Rightarrow T: e(a,b)$

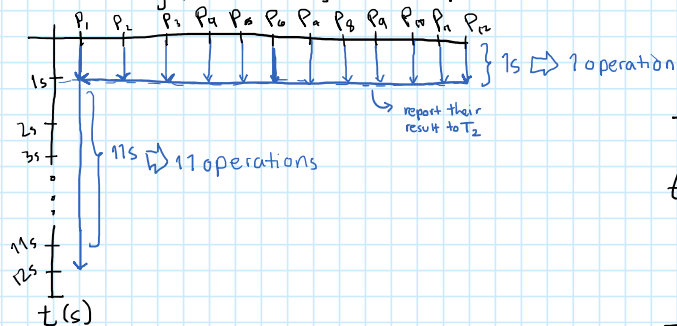
↳ counter: $C = \text{int}(r_1) + \text{int}(r_2) + \dots + \text{int}(r_{12}) \Rightarrow T_2: 11 \text{ sums}$
 $C = a + a + a + a + a + a$

① 12 processors, 1 data partition

Solution



Time diagram: Assuming that 1 operation ($=, +, -, *, /$) takes 1s:



$$t_{TOTAL} = \max\{P_1, P_2, P_3, \dots, P_{12}\}$$

$$t_{TOTAL} = \max\{12s, 1s, 1s, 1s, 1s, 1s, 1s, 1s, 1s, 1s, 1s, 1s\}$$

$$t_{TOTAL} = 12s$$