Homework 0: The Foster Method

Sunday, January 30, 2022 2:29 PM

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Data: abcfgvhbcdsb

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

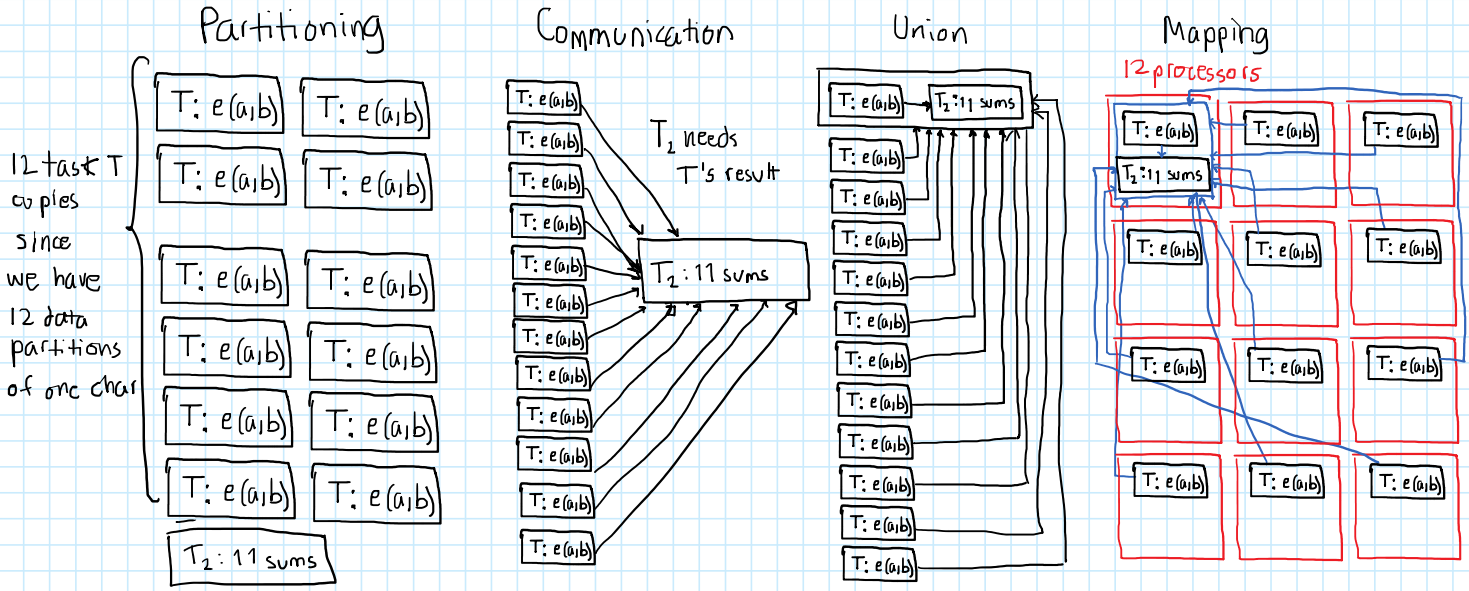
↳ basic operation: equals(a,b) { T if a=b, F if a!=b } ⇨ T: e(a,b)

↳ counter: c = int(r1) + int(r2) + ... int(r12) ⇨ T2: 11 sums

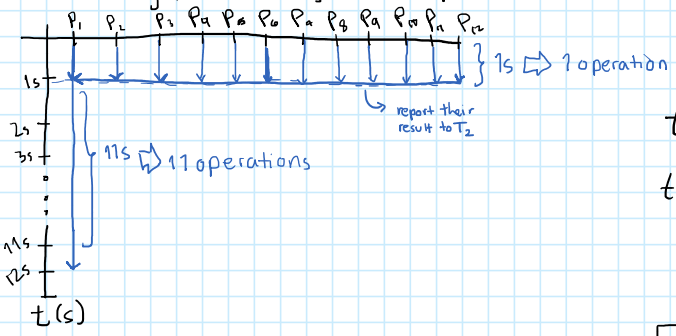
Assuming int(equals(a,b)) outputs 0 or 1.

(1) 12 processors, data partition

Solution



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



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

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

$t_{TOTAL} = 12s$