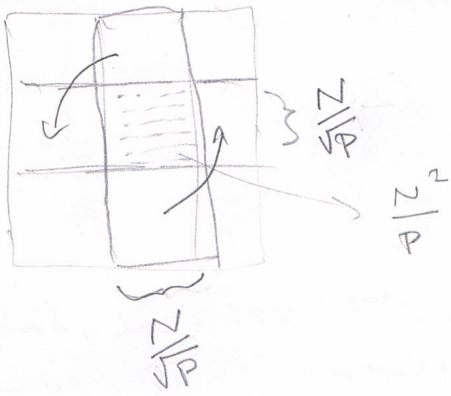
3.6

b)



$T_R = t_c \frac{N^2}{P}$

$T_k = t_s + t_w \frac{N^2}{P}$

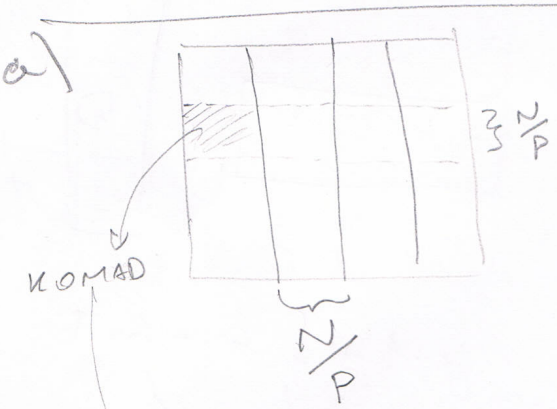
$$S = \frac{t_c N^2}{t_c N^2 + t_s P + t_w N^2}$$

$N = \sqrt{P}$

$t_c \approx \varepsilon (t_c + t_s + t_w)$

$O(P)$

a)



$T_R = \frac{N^2}{P} \cdot t_c$

$T_k = (P-1) \cdot \left(t_s + t_w \frac{N^2}{P^2}\right)$

šalje komad podataka drugim procesima.

ovaj $\frac{N^2}{P^2}$ šalje jednaki broj podataka kao i $\frac{N^2}{P}$ u b) slučaju

$$S = \frac{t_c N^2}{t_c N^2 + (P-1)\left(t_s P + t_w \frac{N^2}{P}\right)}$$

(P-1) → zanemarivo

$N = P$

$t_c N^2 \sim \varepsilon (t_c N^2 + t_s P^2 + t_w N^2) / N^2$

$t_c \sim \varepsilon (t_c + t_s + t_w$

izo → $O(P^2)$

3.5

1€/h po proc.

$T_p = 50 + \frac{150}{P}$ (u h)

$D = \max(0, 18 \cdot (T_1 - T_p))$ (u €)

ovo je ili , a ne decimalna točka

$Z = D - C$

$Z = \underbrace{18T_1 - 18T_p}_{D} - \underbrace{P \cdot T_p \cdot (1€)}_{C}$

uvrsti

$Z = 18T_1 - 18\left(50 + \frac{150}{P}\right) - P \cdot (1€) \cdot \left(50 + \frac{150}{P}\right)$

$Z = 18T_1 - \left(900 + \frac{2700}{P}\right) - (50P + 150) =$

$Z = 18T_1 - 1050 - \frac{2700}{P} - 50P$ / po P

KOD PROF PIŠE −750 → KRIVO? → NE UTJEČE NA REZ

$\frac{dZ}{dP} = -50 + \frac{2700}{P^2} = 0$ → izjednačimo sa 0

$50P_2 = 2700$

$P^2 = 54$ → $P_1 = +7{,}348$ → zaokružimo na 7

$P_2 = -7{,}348$

$T_p = 50 + \frac{150}{7} = 71{,}43h$

$C = 1€ \cdot P \cdot T_p \approx 500€$

$E = \frac{T_1}{P \cdot T_p} = \frac{200}{500} \approx 0{,}4$

$T_1 = 50 + \frac{150}{1} = 200h$

$D = 18 \cdot (200 - 71{,}43) = 2314.26$

$Z = D - C = 1814$ kn

3.3

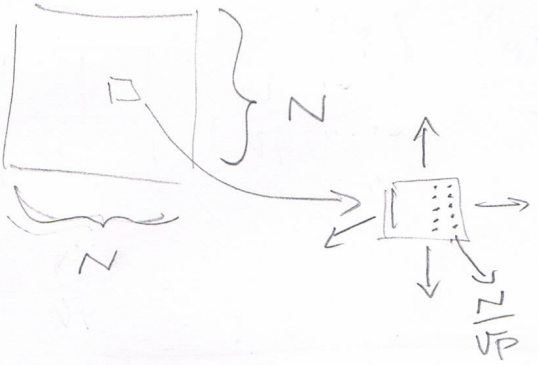
$T_K = N^2 \cdot t_c$

$T_K = 4 \cdot \left[t_s + \left(\frac{N}{\sqrt{P}} \cdot t_w \cdot 2 \right) \right]$

GORE DOLJE LIJEVO DESNO

MOŽDA DODATI · 2???

5)



$\frac{N}{\sqrt{P}}$ točkica → 2× jer DVA SLOJA!

T_1 tj $P=1$

$$E = \frac{t_c \frac{N^2}{P}}{\left(t_c \frac{N^2}{P} + 4t_s + 8t_w \frac{N}{\sqrt{P}} \right) \cdot P}$$

T_P

$$E = \frac{t_c N^2}{t_c N^2 + 4t_s P + 8t_w N \frac{P}{\sqrt{P}}} \longrightarrow \frac{P}{\sqrt{P}} \cdot \frac{\sqrt{P}}{\sqrt{P}} = \frac{P\sqrt{P}}{P} = \sqrt{P}$$

$N = \sqrt{P}$

$t_c P \sim E \left(t_c P + 4 t_s P + 8 t_w P \frac{\sqrt{P}}{\sqrt{P}} \right) \quad / : P$

$t_c \sim E (t_c + 4t_s + 8t_w)$

iso → $O(P)$

a)

2× sloj po N točkica

$T_K = t_c \cdot \frac{N^2}{P}$

$T_K = 2 (t_s + 2 t_w N)$

LIJEVO i DESNO

$T_P = t_c \frac{N^2}{P} + 2t_s + 4t_w N$

NEMA SMISLA GORE DOLJE pošto te podatke već imam

$$E = \frac{t_c N^2 \to P=1 \text{ za nestane}}{t_c N^2 + 2t_s P + 4t_w N P} = \frac{T_1}{P \cdot T_P}$$

$P = N$

$$t_c N^2 \sim E\,(t_c N^2 + 2t_s P + 4t_w N P) : / P^2$$

$$t_c \sim t_c + \frac{2t_s}{P} + 4t_w$$

iso $O(P^2)$

3.1

$T_R = t_c \cdot \frac{N^2}{P}$ $\quad T_k = 2\left(t_s + 1 \cdot t_w \frac{N}{\sqrt{P}}\right)$

(2 ↓ gore i lijevo)

b)

$$E = \frac{t_c N^2 \to P=1}{t_c N^2 + 2t_s P + 2t_w \sqrt{P}} \to \text{iso} = O(P)$$

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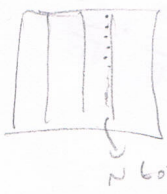
a)



$T_k = 1\,(t_s + 1 \cdot t_w N)$

(1 ↓ samo lijevo)

jer gore i sve u stupcu već imamo

$$E = \frac{t_c N^2}{t_c N^2 + t_s P + t_w N P} \to \text{iso } N=P \to O(P^2)$$

3.4

$C_{vm} = 2kn \cdot p \cdot T_p$ cijena = 2kn po h po proc

$T_1 = 336h$

$T_p = 120h$

$E_p = \frac{3}{(2+p)}$ $E_p = \frac{T_1}{p T_p}$

$\frac{3}{2+p} = \frac{T_1}{p T_p} \Rightarrow 3p T_p = 2T_1 + T_1 p$

$3p \cdot 120 = 2 \cdot 336 + 336p$

$360p - 336p = 672$

$24p = 672$

$p = 28$ procesora

$C = 2kn \cdot p \cdot T_p = 6720kn$

---

min trajanje:

$E_p = \frac{3}{(2+p)} = \frac{T_1}{p \cdot T_p} \Rightarrow 3p T_p = 2T_1 + T_1 p \; /:3p$

$T_p = \frac{2T_1}{3p} + \frac{T_1 p}{3p}$

$\lim_{p \to \infty} T_p = \frac{2T_1}{3p} + \frac{T_1}{3} = \frac{2T_1}{\infty} + \frac{T_1}{3} \rightarrow$ min trajanje

$\frac{2T_1}{\infty} \rightarrow 0$