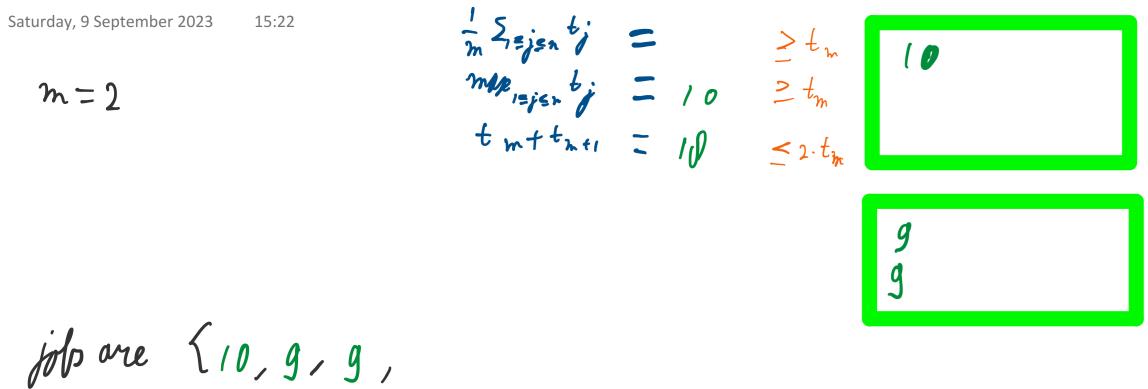
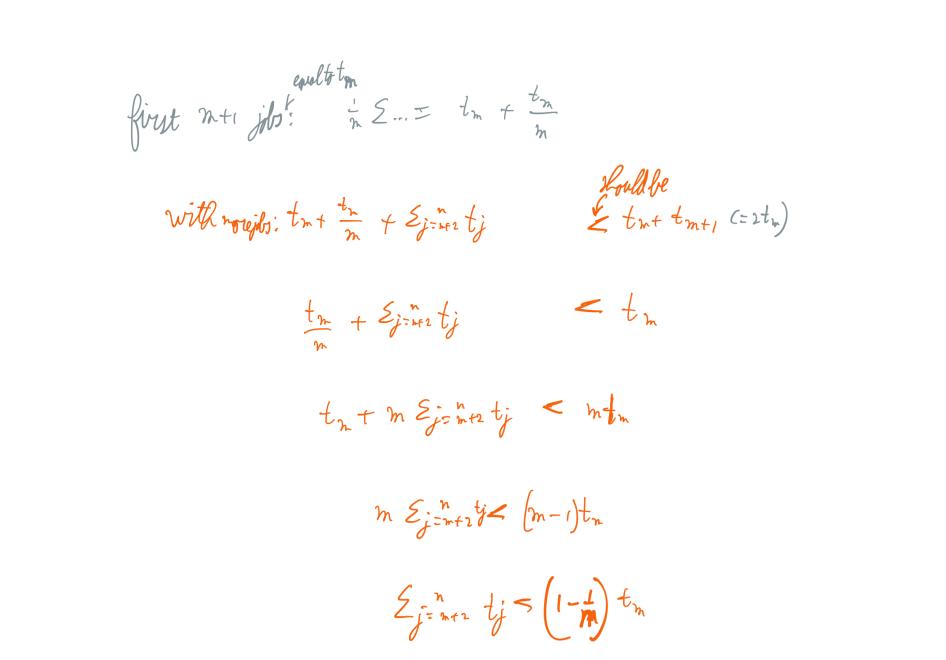
Exercise 1.8

m=2

Saturday, 9 September 2023 15:22



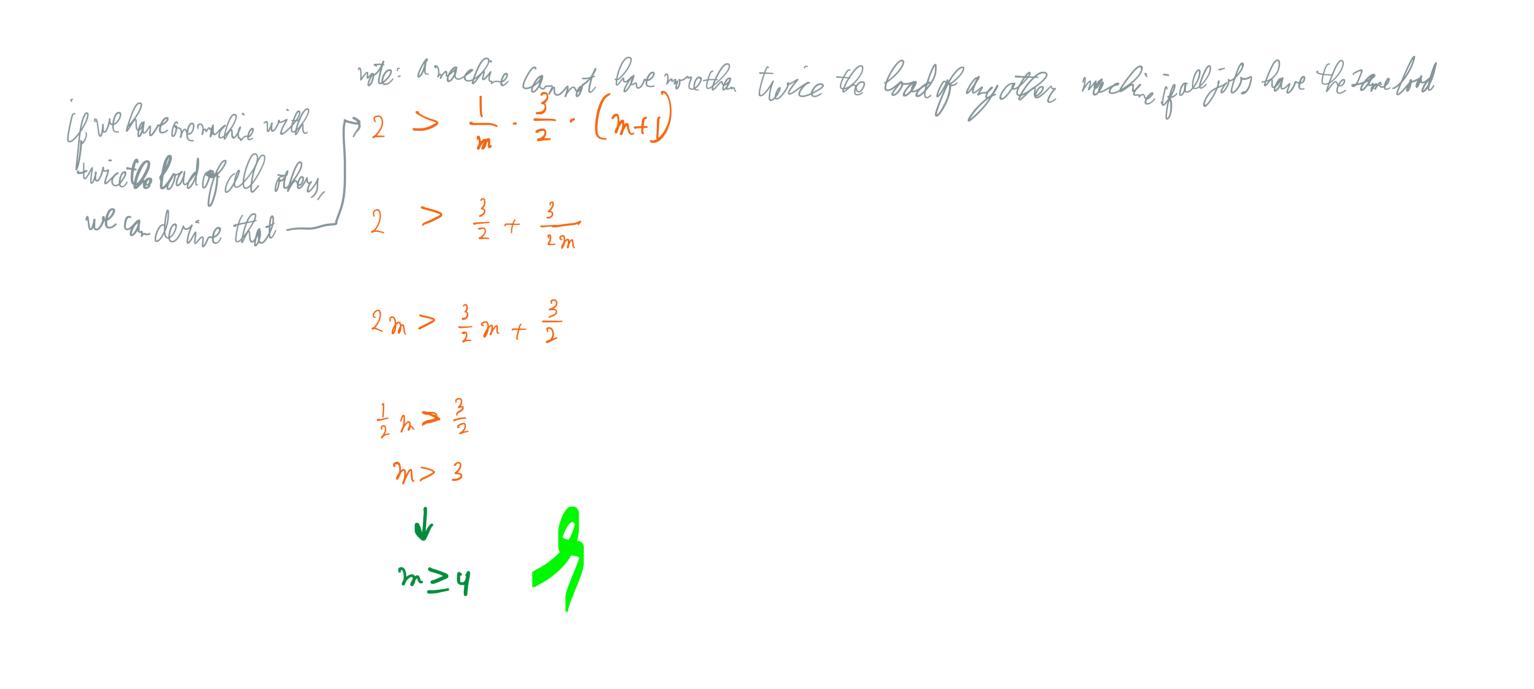


OPT=12 3 OPT= (0 4 ALG=13 3 3 ALG=11 4 5 5 55 017=15 7 OPT = 215 5 5 ALG = 17 7 7 ALG = 237 7 9 9 9 g $\frac{1}{m} \sum_{j} \xi_{j}^{j} = 2q_{-5} = 2\ell + \frac{3}{2}\gamma$ max $\xi_{j}^{j} = 13 = 2\ell + \frac{3}{2}\gamma$ 20 lut $\xi_{j}^{j} = 2\ell + \frac{3}{2}\gamma$ g 27 29 33 35 **g** ll sy 1 g 11 11 13 = 2 13 vill rever work OPT = 3q0 PT= 10 9 5 ALG=19 9 9 ALG = 35 5 5 17 17 g g 33 dg 3 3 3 90 g 0 333 5553 £ 2-1 2-1 555 **5**555

= 22 - 1 highert load on machine m (with $t \in \mathbb{Z}$) 20hutin = 2 x-1 $average = \frac{1}{2} (\chi + 1(\chi - 1)) = \frac{1}{2} (3\chi - 2) = \frac{3}{2}\chi - 1$ $w_{\chi} = \chi$ $2\chi - 1 > \frac{3}{2}\chi - \frac{1}{2}\chi > 1 \rightarrow \chi > 2$ Vivial $2\chi - 1 > \frac{3}{2} \cdot (\frac{3}{2}\chi - 1) = \frac{g}{4}\chi - \frac{3}{2}$ $\frac{1}{2} - \frac{1}{4}\chi$ $2 < \chi$

> *99* 100 100 100

 $Load'(M_i*) + b_j* > \frac{3}{2} \frac{1}{m} \in j \leq x \neq j$ $Load'(M_i^*) + b_j^* > \frac{3}{2} mage t_j$



This words for m=4 and the set of jobs \$ 100, 100, 100, 100, 100.

They $\frac{3}{2} map (...) = \frac{3}{2} map (\frac{1}{4} \cdot 500, 100)$

 $=\frac{3}{2} \cdot 125$ =187,5 < 200, which is the optimal solution (and have best possible one obtained by ordered - scheduling)