feb 17

#steps

$c \cdot N^d$

input size: N

↳ increases by a constant factor: $5N$

$c \cdot (5N)^d$

$= c \cdot 5^d \cdot N^d$

$= 5^d \cdot c \cdot N^d$

Os implementation

initialization ← T_0

while (...) ← # iterations $= T_1 \leq n^2$

body ← T_2

output s ← T_3

overall runtime $\leq T_0 + T_1 \cdot T_2 + T_3$

$\leq T_0 + n^2 \cdot T_2 + T_3$

$\leq O(n^2) + n^2 \cdot O(1) + O(n^2)$

$\leq O(n^2) + O(n^2) + O(n^2)$

$\leq O(n^2)$

gb we can argue:

(i) $T_0, T_3 \leq O(n^2)$

(ii) $T_2 \leq O(1)$

notation change:

$M = [n] \overset{\text{def}}{=} \{1, \ldots, n\}$

$W = [n]$

$\{m_1, \ldots, m_n\} \to \{1, \ldots, n\}$

$\{w_1, \ldots, w_n\} \to \{1, \ldots, n\}$

array indices start at 1.

(20) How is the input represented?

2-D arrays

womanPref[w][i] = ID of the ith most preferred man in Lw.