

Exams will be on Fridays from 8-10 PM	
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2 - Keep an away Next [1...n]

Next[m] points to the position

of the next woman to that in

will be proposing to on his

ranked list.

Preference bist for men.

Yan Pref [1...n, 1...n]

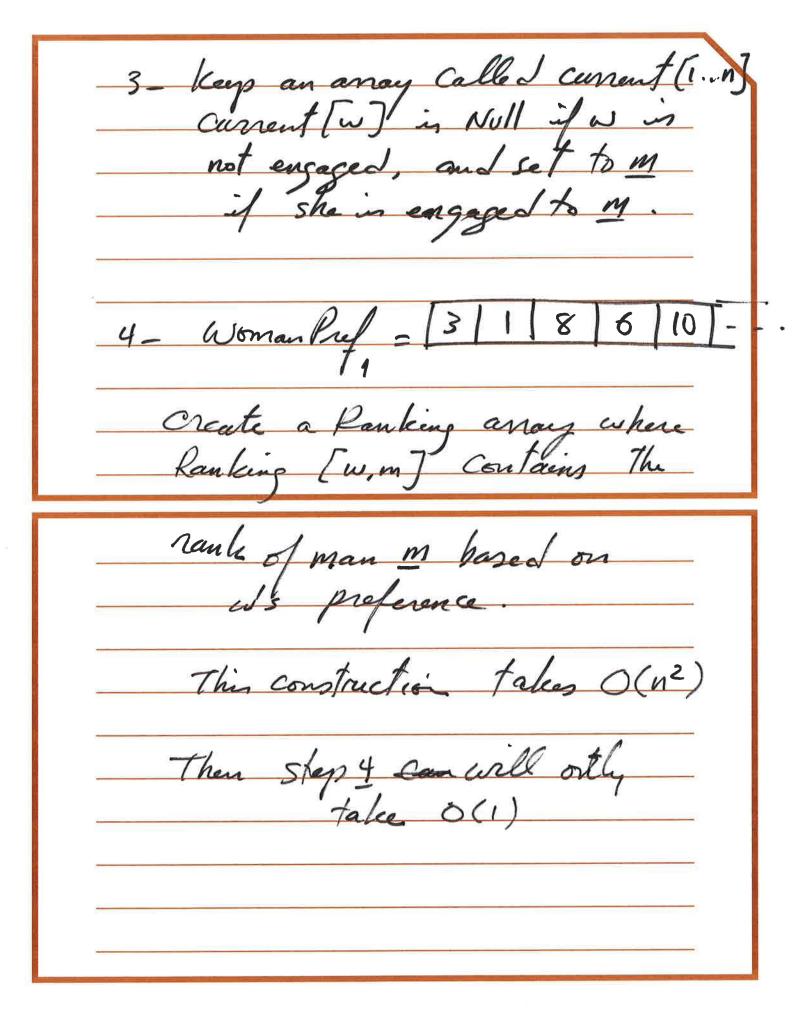
Man Prif [m, i] denotes the

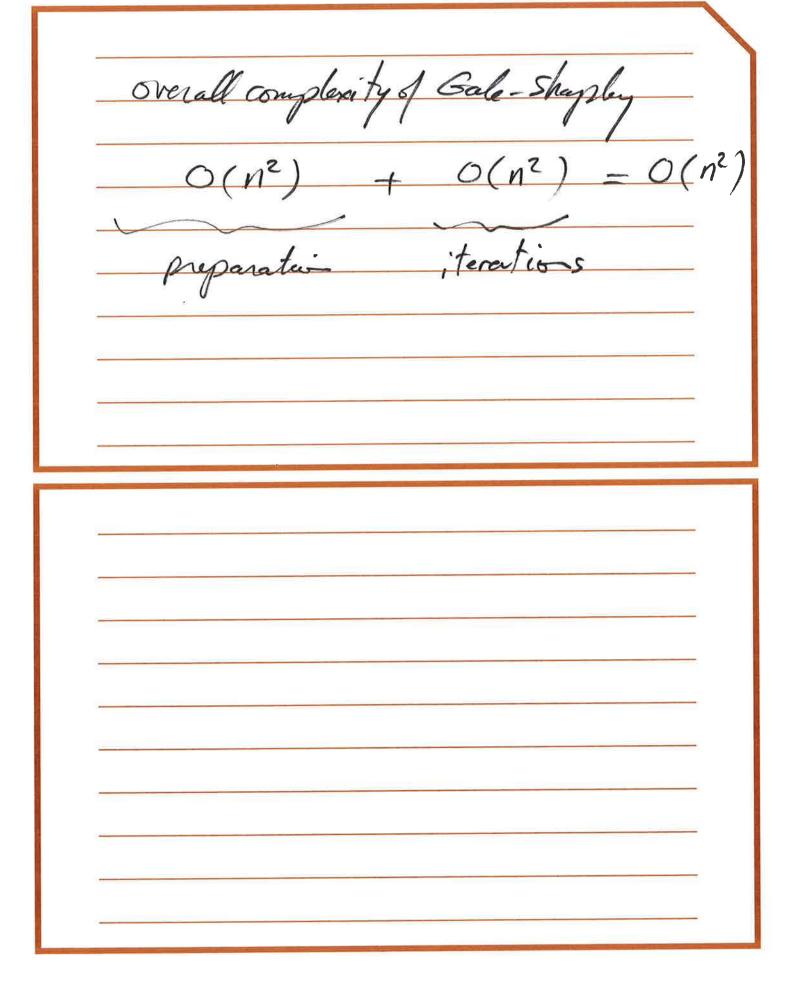
ith woman on man m's

Man m will propose to

Man Pref [m, Next (m)]

Steps involved in one iteration of
Gale-Shapley
Steps involved in one iteration of Gale-Shapley 1- Identify a free man O(1)
2- For a man m, identify the highest nanked woman to whom he has not yet proposed. O(1)
not yet proposed. O(1)
3- For a woman w, decide if wis
3- For a women w, decide if wis engaged, if so to whom $O(1)$
4- For a woman w and two men m8m' decide which man is preferred by w.
4- For a woman w and two men m8m' decide which man in preferred by W.
4- For a woman w and two men m8m' decide which man in preferred by w. 5- Place a man back in the
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Basics about you

- 1. Your name:
- 2. Your e-mail address:
- 3. Your major and degree program:
- 4. Your areas of research interests (if applicable) feel free to list multiple areas if you are undecided:
- 5. Titles of relevant classes you have taken before this may include algorithms, complexity, languages
- & automata, graph theory, discrete mathematics, probability, linear algebra, mathematical programming, or others that you can think of:

Background Knowledge

This section tries to ascertain some basic knowledge we hope you acquired before. This is not a quiz, and your performance here will not affect your grade. However, if you have serious problems in this section, it may be in your own best interest to review the background material in order to do well in this class.

- 1- Which of these sorting algorithms have a worst-case running time of $\Omega(n^2)$ mark all that apply: Bubble Sort, Heap Sort, Insertion Sort, Merge Sort, Quick Sort (with good median finding), Selection Sort.
- 2- Which of these sorting algorithms have a worst-case running time of O(n log n) mark all that apply: Bubble Sort, Heap Sort, Insertion Sort, Merge Sort, Quick Sort (with good median finding), Selection Sort
- 3- Which of these functions are $O(n^2)$ mark all that apply: 3, $(2n)^2$, $(\log n)^4$, 2^n , $1/100 n^3$, $\log \log n$, $4n \log n$, $n^2 + 4n \log n$.
- 4- Which of these functions are $\Omega(n^2)$ mark all that apply: 3, $(2n)^2$, $(\log n)^4$, 2^n , $1/100 n^3$, $\log \log n$, $4n \log n$, $n^2 + 4n \log n$.

