**COMP9101 Ass02**

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**Q2:**

In order to assign the largest number of workers to the jobs according to the job requirement. One possible way is that we first assign the lowest xi to the corresponding P entry-level job, which means, the lowest xi worker will first get the smallest pi job among all P entry level job. For senior job, it is similar as the entry level job, we assign the highest xi worker to the highest qi job, the sudo-code may show like below:

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描述已自动生成

From line1-3, we first sort N,P, Q in ascending order, which the time complexity is O(NlogN+PlogP+QlogQ) ,from line 10 to 18, we maintain two pointer, to find the workers which satisfy the lowest Pi, the time complexity for this step is O(P + N), which is the length of array N and P. similar for the line 20-28, we find the workers which satisfy the requirement Q, the time complexity is also O(N+Q); Compare to the NlogN+PlogP+QlogQ, the time complexity 2N + P +Q should not be consider according to the rules, therefore the total time complexity is O(NlogN+PlogP+QlogQ).