

Question5:

To restore this information, we will construct two 2d arrays of size  $n$  by  $n$  where  $n$  is the total number of employees or interns.

We will make two 2D arrays each of size  $n \times n$  where  $n$  is number of Employees/Interns. So we will edit the preferences such that for Interns array, every row will correspond to the preferences of an intern and every column will correspond to the Employee which the interns prefer. So thats how we can store the employee's 'y' preference number by intern 'x' in the position  $arr[x][y]$ . So the overall space would be  $O(n^2)$  for both the arrays and we can refer to each query in  $O(1)$ .