

Homework #2 CSE-107

4i- b) $m \in [1, \dots, M]$ $0.5 \leq x \leq M+0.5$

Input: pixel location of $x \in [1, 2, \dots, M]$

Output: 1st 2 closest m pixel to x

Step 1: Subtract x from each m of $[1, 2, \dots, M]$ say it be X'

Step 2: Sort X' using any good sorting algorithm in increasing order

Step 3: Output the element from m from $[1, 2, \dots, M]$ corresponding to the 1st element of X'

c) Input: pixel location of x and $[1, 2, \dots, M]$

Output: first 2 closest m, and m pixel to x

Step 1: Subtract x from each m of $[1, 2, \dots, M]$ say its X'

Step 2: sort X' using any sorting algorithm in increasing order

Step 3: output the element from m, $\in M$, from $[1, 2, \dots, M]$ corresponding to first two elements of X'

d) * Try finding the closest pixel to $p(x, y)$

Input: pixel location of (x, y) and $[(1, 1), \dots, (M, N)]$

Output: Closest pixel location (m, n) to p.

Step 1: subtract (x, y) from all of (m, n) and say its (x', y')

Step 2: move an array called D of elements $d = \sqrt{x'^2 + y'^2}$

Step 3: sort D

Step 4: output the element from (m, n) from $[(1, 1), \dots, (M, N)]$ corresponding to the first element of D'