k-Nearest Neighbors Homework
CS 4499/5599

For this assignment you will practice predicting the output class for a new instance given a training set using the *k*-Nearest Neighbors algorithm.

Assume the following training set:

x	*y*	*Target*
0.3	*0.8*	*A*
-0.3	*1.6*	*B*
0.9	*0*	*B*
1	*1*	*A*

Assume a new point: (.5, .2)

- For nearest neighbor distance **use Manhattan distance:** $d_1(\mathbf{p}, \mathbf{q}) = \|\mathbf{p} - \mathbf{q}\|_1 = \sum_{i=1}^{n} |p_i - q_i|,$
- What would the output be for 3-nn with no distance weighting? Show work and vote.
- What would the output be for 3-nn with distance weighting? Show work and vote.