In pattern recognition: the k-nearest nonparametric algorithm is used in classification and regression. Initial information includes the k closest, classification in k-NN.

- In order to ascertain the k most analogous data instances: calculate the similarities between data instances, note a solution includes Euclidean. Locate the k most analogous data instances. Implement a prediction algorithm and determine the accuracy. Next, implement:

    - regression: in the summarization of the closest instances use the mean, revise the model
    - normalization: attributes have the potential to dominate in the contribution to the distance measure: rescale all data attributes, revise the model.
    - measure: calculate an alternative distance measure

5.1,3.5,1.4,0.2,A	5.1,3.4,1.5,0.2,A	6.0,2.9,4.5,1.5,B	7.7,3.8,6.7,2.2,C
4.9,3.0,1.4,0.2,A	5.0,3.5,1.3,0.3,A	5.7,2.6,3.5,1.0,B	7.7,2.6,6.9,2.3,C
4.7,3.2,1.3,0.2,A	4.5,2.3,1.3,0.3,A	5.5,2.4,3.8,1.1,B	6.0,2.2,5.0,1.5,C
4.6,3.1,1.5,0.2,A	4.4,3.2,1.3,0.2,A	5.5,2.4,3.7,1.0,B	6.9,3.2,5.7,2.3,C
5.0,3.6,1.4,0.2,A	5.0,3.5,1.6,0.6,A	5.8,2.7,3.9,1.2,B	5.6,2.8,4.9,2.0,C
5.4,3.9,1.7,0.4,A	5.1,3.8,1.9,0.4,A	6.0,2.7,5.1,1.6,B	7.7,2.8,6.7,2.0,C
4.6,3.4,1.4,0.3,A	4.8,3.0,1.4,0.3,A	5.4,3.0,4.5,1.5,B	6.3,2.7,4.9,1.8,C
5.0,3.4,1.5,0.2,A	5.1,3.8,1.6,0.2,A	6.0,3.4,4.5,1.6,B	6.7,3.3,5.7,2.1,C
4.4,2.9,1.4,0.2,A	4.6,3.2,1.4,0.2,A	6.7,3.1,4.7,1.5,B	7.2,3.2,6.0,1.8,C
4.9,3.1,1.5,0.1,A	5.3,3.7,1.5,0.2,A	6.3,2.3,4.4,1.3,B	6.2,2.8,4.8,1.8,C
5.4,3.7,1.5,0.2,A	5.0,3.3,1.4,0.2,A	5.6,3.0,4.1,1.3,B	6.1,3.0,4.9,1.8,C
4.8,3.4,1.6,0.2,A	7.0,3.2,4.7,1.4,B	5.5,2.5,4.0,1.3,B	6.4,2.8,5.6,2.1,C
4.8,3.0,1.4,0.1,A	6.4,3.2,4.5,1.5,B	5.5,2.6,4.4,1.2,B	7.2,3.0,5.8,1.6,C
4.3,3.0,1.1,0.1,A	6.9,3.1,4.9,1.5,B	6.1,3.0,4.6,1.4,B	7.4,2.8,6.1,1.9,C
5.8,4.0,1.2,0.2,A	5.5,2.3,4.0,1.3,B	5.8,2.6,4.0,1.2,B	7.9,3.8,6.4,2.0,C
5.7,4.4,1.5,0.4,A	6.5,2.8,4.6,1.5,B	5.0,2.3,3.3,1.0,B	6.4,2.8,5.6,2.2,C
5.4,3.9,1.3,0.4,A	5.7,2.8,4.5,1.3,B	5.6,2.7,4.2,1.3,B	6.3,2.8,5.1,1.5,C
5.1,3.5,1.4,0.3,A	6.3,3.3,4.7,1.6,B	5.7,3.0,4.2,1.2,B	6.1,2.6,5.6,1.4,C
5.7,3.8,1.7,0.3,A	4.9,2.4,3.3,1.0,B	5.7,2.9,4.2,1.3,B	7.7,3.0,6.1,2.3,C
5.1,3.8,1.5,0.3,A	6.6,2.9,4.6,1.3,B	6.2,2.9,4.3,1.3,B	6.3,3.4,5.6,2.4,C
5.4,3.4,1.7,0.2,A	5.2,2.7,3.9,1.4,B	5.1,2.5,3.0,1.1,B	6.4,3.1,5.5,1.8,C
5.1,3.7,1.5,0.4,A	5.0,2.0,3.5,1.0,B	5.7,2.8,4.1,1.3,B	6.0,3.0,4.8,1.8,C
4.6,3.6,1.0,0.2,A	5.9,3.0,4.2,1.5,B	6.3,3.3,6.0,2.5,C	6.9,3.1,5.4,2.1,C
5.1,3.3,1.7,0.5,A	6.0,2.2,4.0,1.0,B	5.8,2.7,5.1,1.9,C	6.7,3.1,5.6,2.4,C
4.8,3.4,1.9,0.2,A	6.1,2.9,4.7,1.4,B	7.1,3.0,5.9,2.1,C	6.9,3.1,5.1,2.3,C
5.0,3.0,1.6,0.2,A	5.6,2.9,3.6,1.3,B	6.3,2.9,5.6,1.8,C	5.8,2.7,5.1,1.9,C
5.0,3.4,1.6,0.4,A	6.7,3.1,4.4,1.4,B	6.5,3.0,5.8,2.2,C	6.8,3.2,5.9,2.3,C
5.2,3.5,1.5,0.2,A	5.6,3.0,4.5,1.5,B	7.6,3.0,6.6,2.1,C	6.7,3.3,5.7,2.5,C
5.2,3.4,1.4,0.2,A	5.8,2.7,4.1,1.0,B	4.9,2.5,4.5,1.7,C	6.7,3.0,5.2,2.3,C
4.7,3.2,1.6,0.2,A	6.2,2.2,4.5,1.5,B	7.3,2.9,6.3,1.8,C	6.3,2.5,5.0,1.9,C
4.8,3.1,1.6,0.2,A	5.6,2.5,3.9,1.1,B	6.7,2.5,5.8,1.8,C	6.5,3.0,5.2,2.0,C
5.4,3.4,1.5,0.4,A	5.9,3.2,4.8,1.8,B	7.2,3.6,6.1,2.5,C	6.2,3.4,5.4,2.3,C
5.2,4.1,1.5,0.1,A	6.1,2.8,4.0,1.3,B	6.5,3.2,5.1,2.0,C	5.9,3.0,5.1,1.8,C
5.5,4.2,1.4,0.2,A	6.3,2.5,4.9,1.5,B	6.4,2.7,5.3,1.9,C	
4.9,3.1,1.5,0.1,A	6.1,2.8,4.7,1.2,B	6.8,3.0,5.5,2.1,C	
5.0,3.2,1.2,0.2,A	6.4,2.9,4.3,1.3,B	5.7,2.5,5.0,2.0,C	
5.5,3.5,1.3,0.2,A	6.6,3.0,4.4,1.4,B	5.8,2.8,5.1,2.4,C	
4.9,3.1,1.5,0.1,A	6.8,2.8,4.8,1.4,B	6.4,3.2,5.3,2.3,C	
4.4,3.0,1.3,0.2,A	6.7,3.0,5.0,1.7,B	6.5,3.0,5.5,1.8,C	