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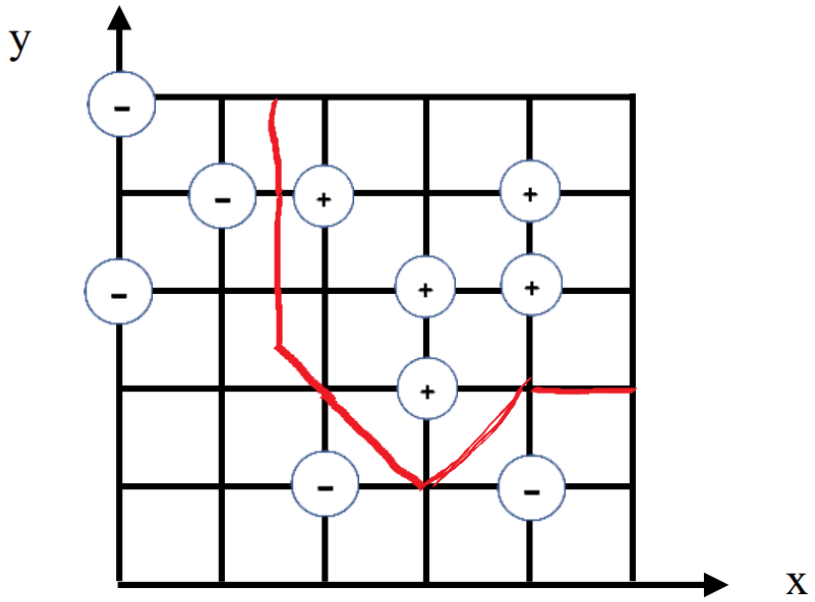
1. a) d1 = FN
   d2 = TP
   d3 = TN
   d4 = TN
   d5 = FP
   d6 = TN
   d7 = TP
   d8 = TN

   accuracy = (TP + TN) / (TP + TN + FP + FN) = (2 + 4) / (2 + 4 + 1 + 1) = 0.75

   b) precision = TP / (TP + FP) = 2 / (2 + 1) = 2 / 3 ~= 0.67
   recall = TP / (TP + FN) = 2 / (2 + 1) ~= 0.67
   F1 = 2rp/(r + p) ~= 2 * 0.67 * 0.67 / (0.67 + 0.67) = 0.67

2. https://github.com/garyjsk271/assignment-2

3. a) error rate = 4/10 = 0.4
   b) error rate = 1/10 = 0.1
   c) error rate = 10/10 = 1.0



   d)
   e) https://github.com/garyjsk271/assignment-2

4. d(10, 1) = ((154-220)^2 + (205-20)^2 + (50-60)^2)^½ ~= 196.67
   d(10, 2) = ((154-255)^2 + (205-99)^2 + (50-21)^2)^½ ~= 149.26
   d(10, 3) = ((154-250)^2 + (205-128)^2 + (50-14)^2)^½ ~= 128.22
   d(10, 4) = ((154-144)^2 + (205-238)^2 + (50-144)^2)^½ ~= 100.12
   d(10, 5) = ((154-107)^2 + (205-142)^2 + (50-35)^2)^½ ~= 80.02
   d(10, 6) = ((154-46)^2 + (205-139)^2 + (50-87)^2)^½ ~= 131.87
   d(10, 7) = ((154-64)^2 + (205-224)^2 + (50-208)^2)^½ ~= 182.83
   d(10, 8) = ((154-176)^2 + (205-224)^2 + (50-23)^2)^½ ~= 39.67
   d(10, 9) = ((154-100)^2 + (205-149)^2 + (50-237)^2)^½ ~= 202.54

   3NN = { 8, 5, 4 }
   Class of 10 is 2 based on 3NN.

5. a) P(class = No | a1 = Sunny, a2 = Mild, a3 = normal, a4 = weak) =
   P(Sunny | No) * P(Mild | No) * P(normal | No) * P(weak | No) * P(No) =
   (3/5) * (1/5) * (1/5) * (2/5) * (5/14) ~= 0.0034

   P(class = Yes | a1 = Sunny, a2 = Mild, a3 = normal, a4 = weak) =
   P(Sunny | Yes) * P(Mild | Yes) * P(normal | Yes) * P(weak | Yes) * P(Yes) =
   (2/9) * (4/9) * (6/9) * (6/9) * (9/14) ~= 0.028

   After normalization:
   P(class = No | a1 = Sunny, a2 = Mild, a3 = normal, a4 = weak) ~=
   0.0034 / (0.0034 + 0.028) ~= 0.11
   P(class = Yes | a1 = Sunny, a2 = Mild, a3 = normal, a4 = weak) ~=
   0.028 / (0.0034 + 0.028) ~= 0.89

   Most probable classification of D15 is Yes.

   b) https://github.com/garyjsk271/assignment-2