

COMPSCI 260 - Problem Set 5, Problem 1

Due: Fri 8 Nov 2019, 5pm

Name: Kyle Mitra

NetID: km423

Statement of collaboration and resources used (put None if you worked entirely without collaboration or resources; otherwise cite carefully): None

My solutions and comments for this problem are below.

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a)

Name	Gene Expression Profile	Class when k =1	Confidence	Class when k =3	Confidence
Alice	(2, 3)	Non-Responder	100%	Non-Responder	100%
Bobby	(10, 12)	Non-Responder	100%	Responder	100%
Cindy	(8, 10)	Responder	100%	Responder	100%
Donny	(4, 7)	Responder	100%	Non-Responder	100%
Ellen	(8, 7)	Non-Responder?	50% (Tie?)	Non-Responder	100%

b) See code

c) Prognosis of the 10 patients in gene.expression.test.set.txt

1 - {'class': 'R', 'expression': [1.653196898, 5.637709513, 3.721518849, 10.90617657, 10.6389355, 6.142868706, 2.070270091, 3.42973494, 7.216609645, 10.16846984]},

2 - {'class': 'N', 'expression': [21.58825919, 8.17972502, 3.574302564, 10.78881225, 13.67046058, 0.065446932, 1.477247695, 4.138809185, 6.907741304, 5.126537182]},

3 - {'class': 'R', 'expression': [2.268162748, 8.226492828, 2.77810369, 8.925616662, 3.596324029, 6.472577287, 2.43895312, 1.115694858, 7.121820717, 9.248797163]},

4 - {'class': 'N', 'expression': [14.15220885, 9.275673672, 4.181581323, 10.36572807, 5.15264169, 1.082422336, 1.917248467, 5.566465353, 7.04584425, 10.3060962]},

5 - {'class': 'R', 'expression': [2.22982616, 7.925312633, 2.750062587, 9.777426078, 7.533821332, 6.042874536, 2.350121567, 0.586045898, 6.197293962, 1.420999636]},

6 - {'class': 'R', 'expression': [7.945346712, 1.113429076, 9.975432912, 6.365298013, 9.783271209, 5.359012749, 9.015829043, 1.154098274, 10.02567291, 3.428901724]},

7 - {'class': 'N', 'expression': [7.298041968, 7.53099397, 1.99627993, 11.76734044,

8.234200565, 1.202603739, 2.543211443, 4.801669423, 7.677132005, 11.64136131]]},

8 - {'class': 'N', 'expression': [14.52719153, 7.876667309, 5.013647141, 9.99920334, 8.978912871, 1.376633484, 2.000480321, 5.307917128, 7.8054154, 8.616546368]}},

9 - {'class': 'R', 'expression': [1.411221314, 7.894233396, 2.421579328, 10.37279943, 3.469192836, 5.960700088, 1.744906445, 1.273354818, 7.82599982, 12.43359458]}},

10 - {'class': 'R', 'expression': [3.963657828, 5.979754919, 1.607210773, 8.776856872, 6.971965997, 5.053601353, 3.52838075, 2.205070582, 8.426286968, 8.921788549]}]}