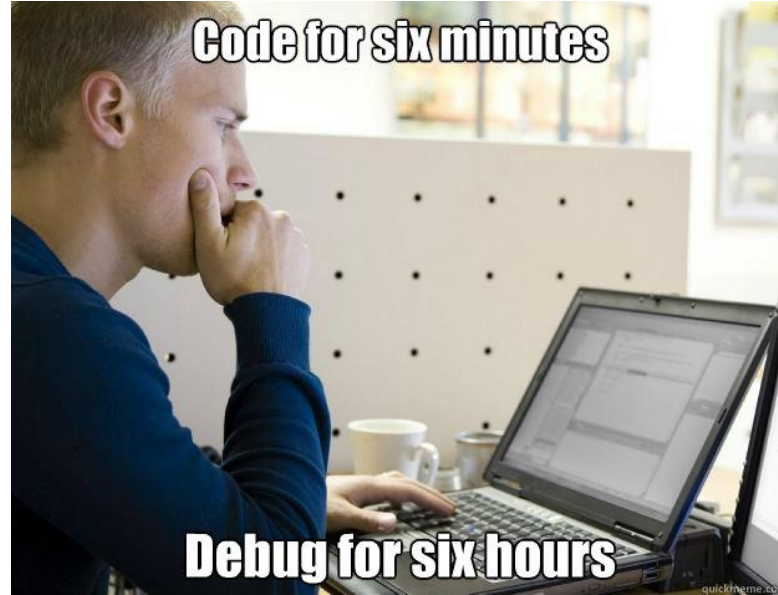
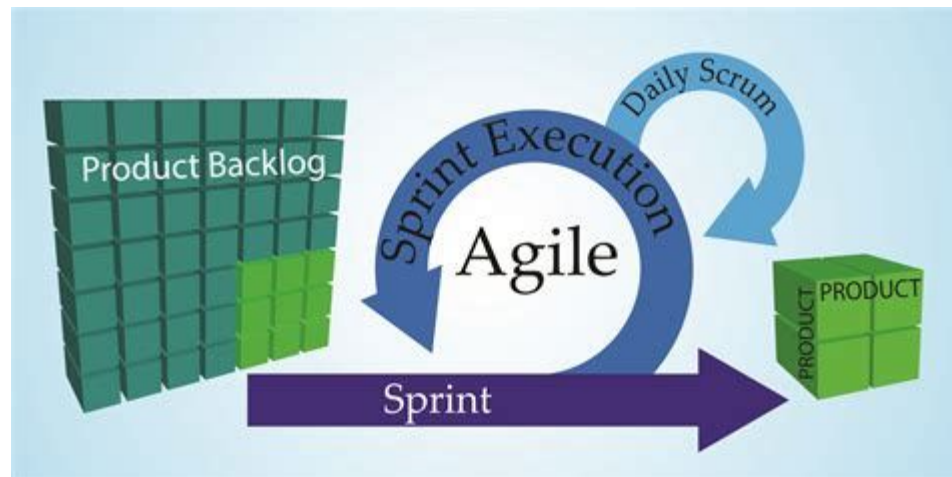
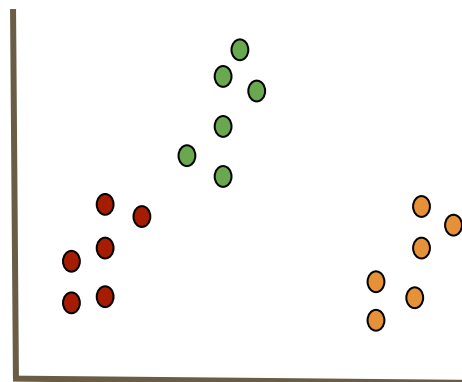
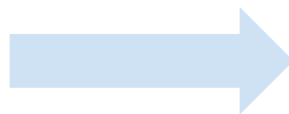
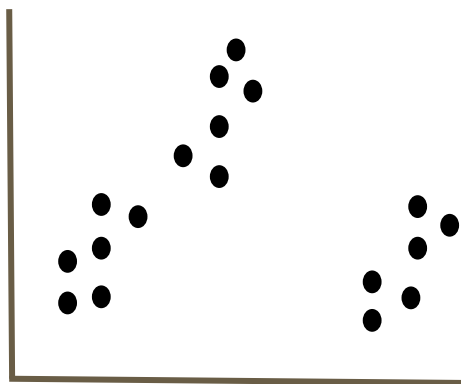

CS 506

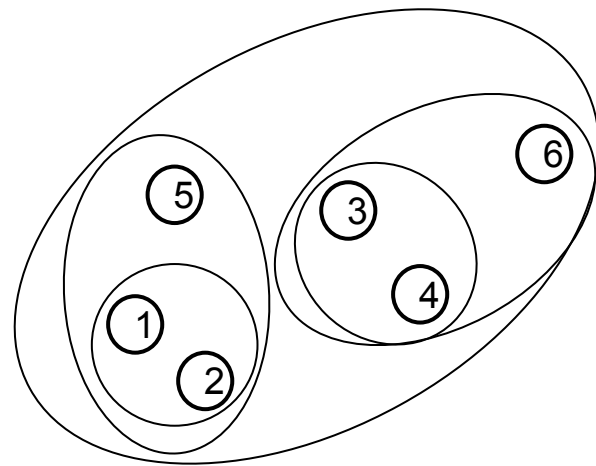
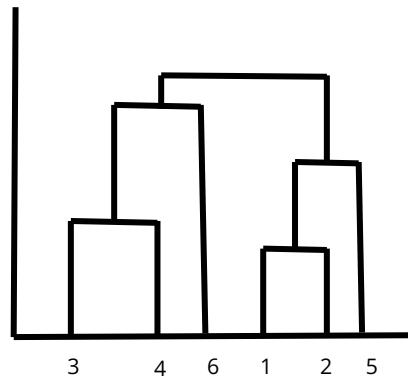
— Boston University CS 506 - Lance Galletti —

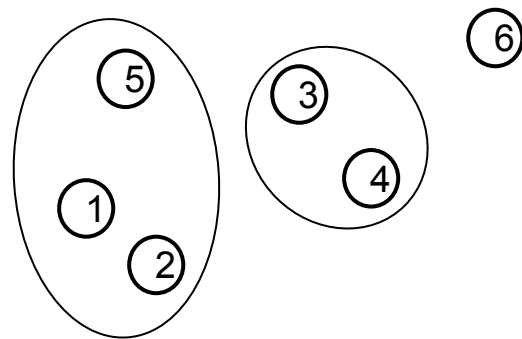
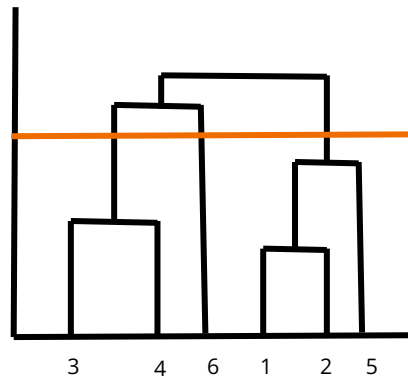


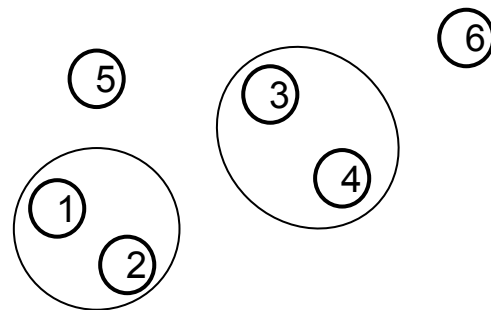
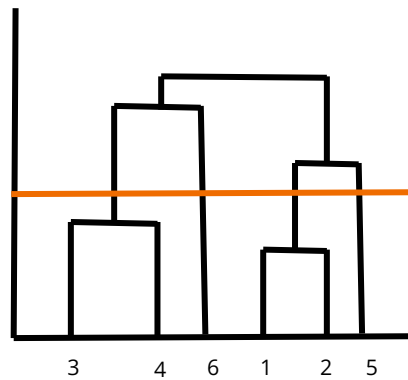


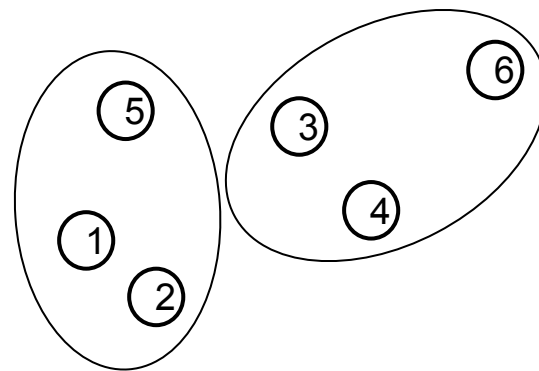
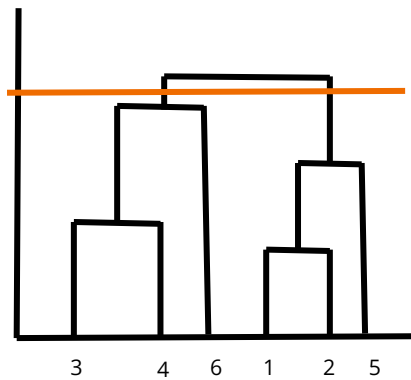


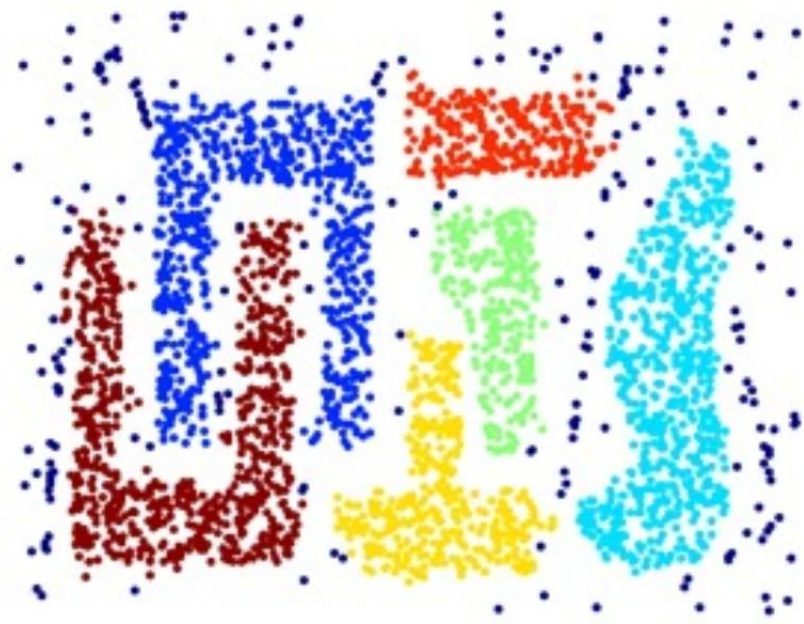
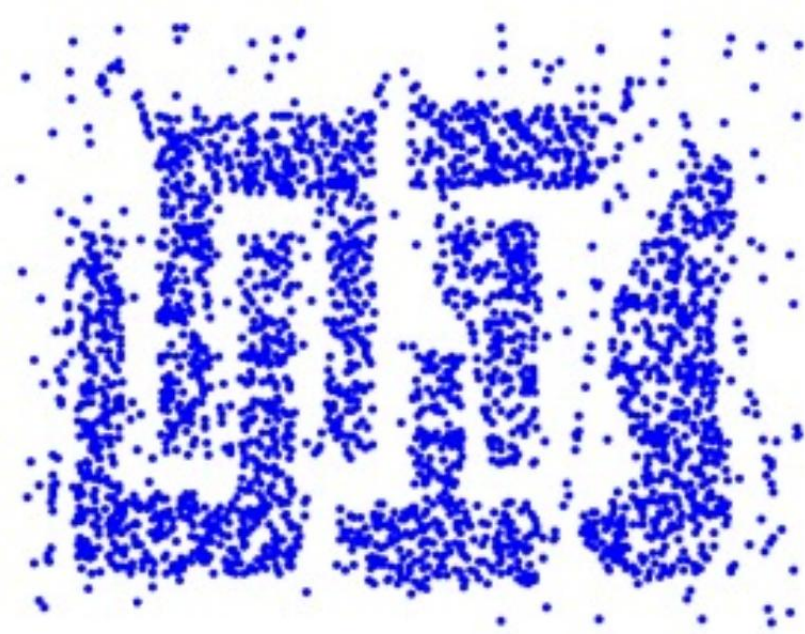


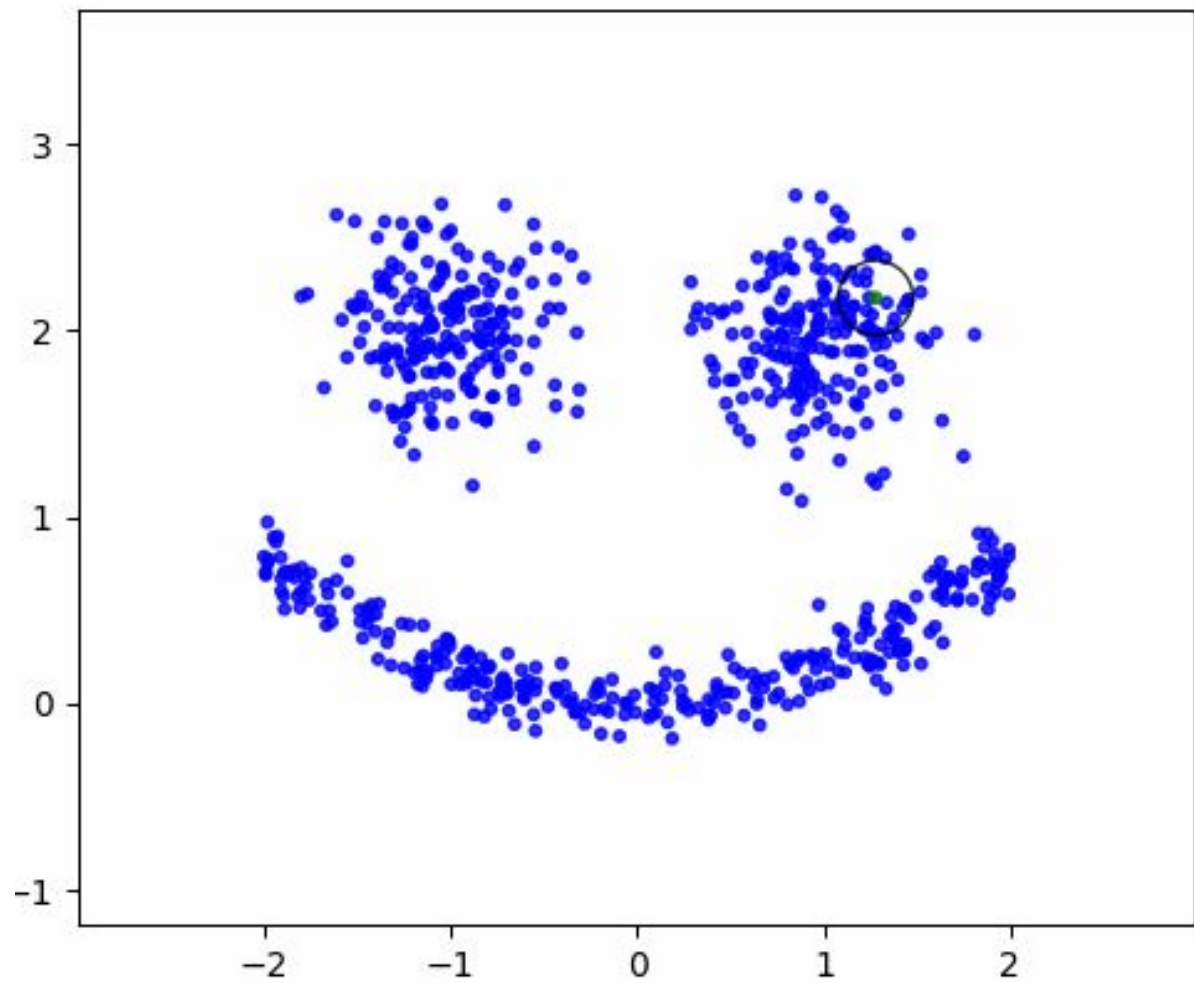


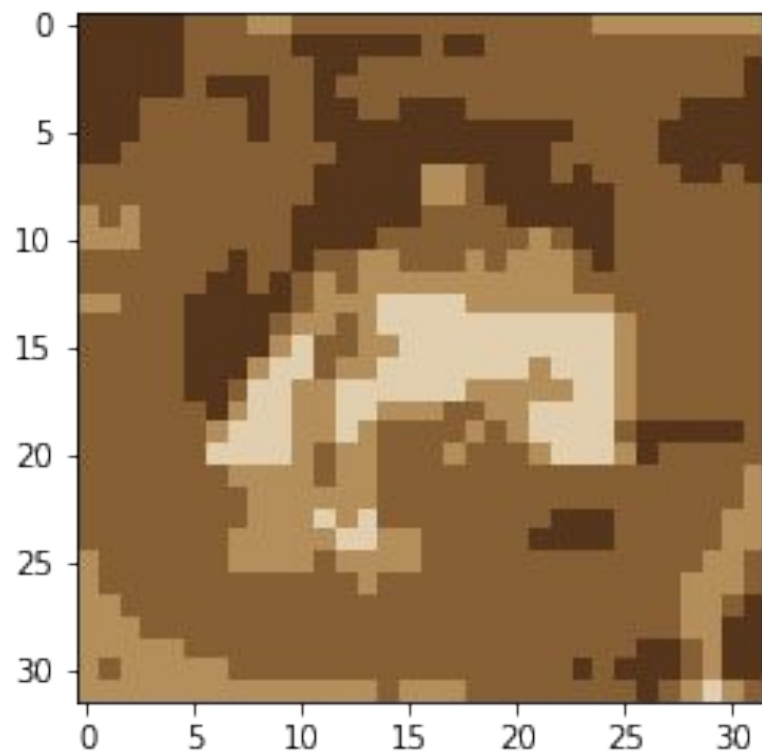
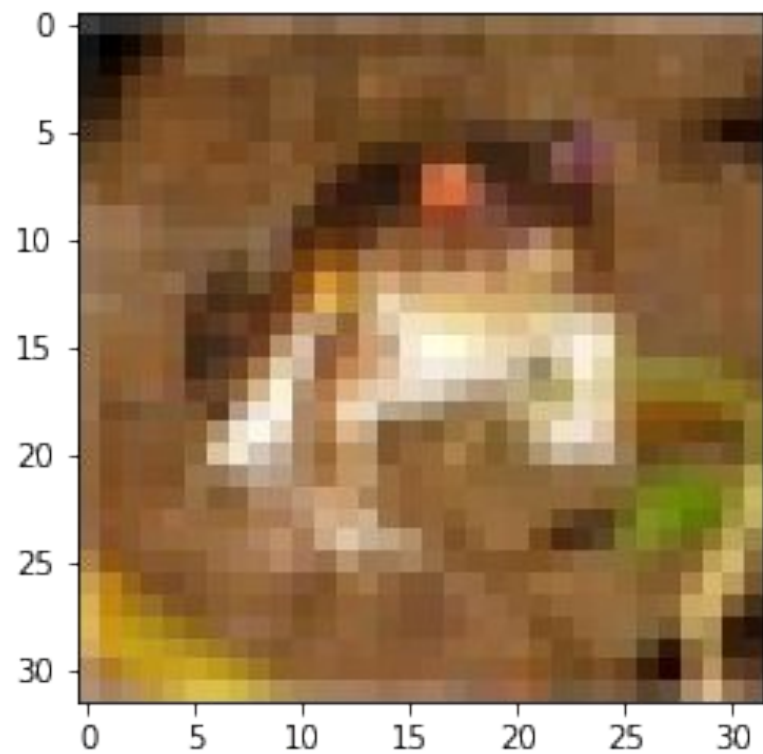


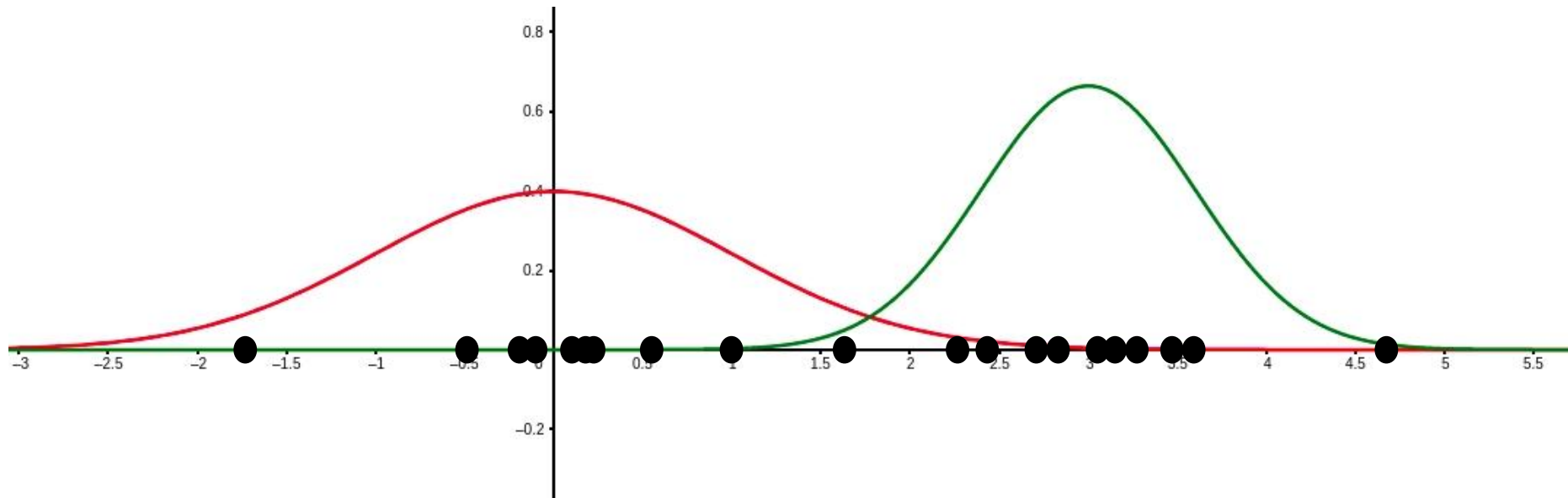




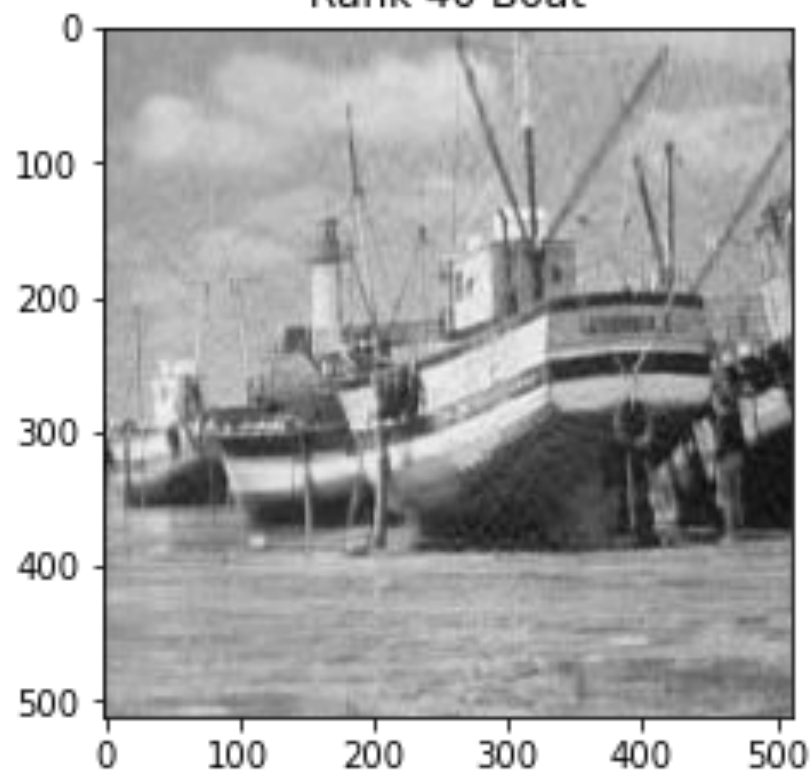




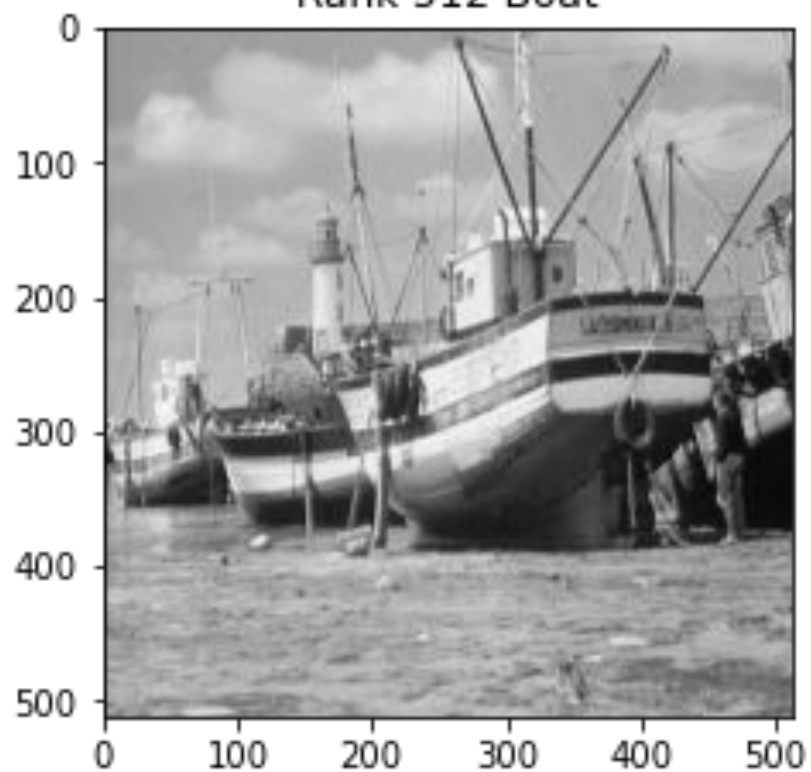




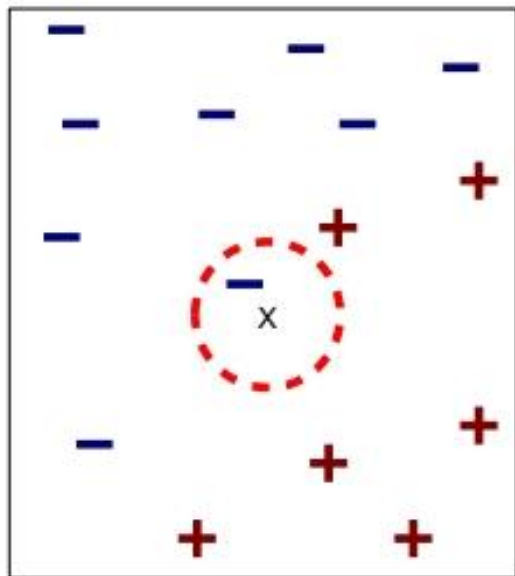
Rank 40 Boat



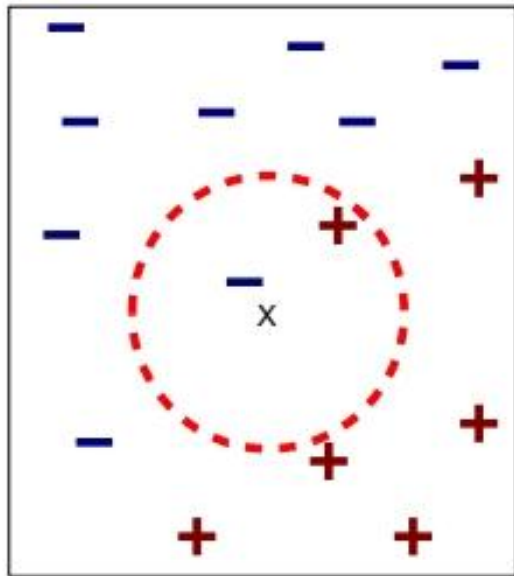
Rank 512 Boat



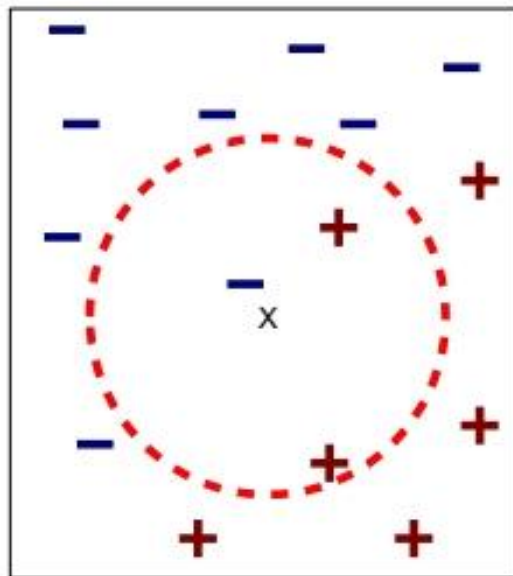
Natural Language Processing



(a) 1-nearest neighbor

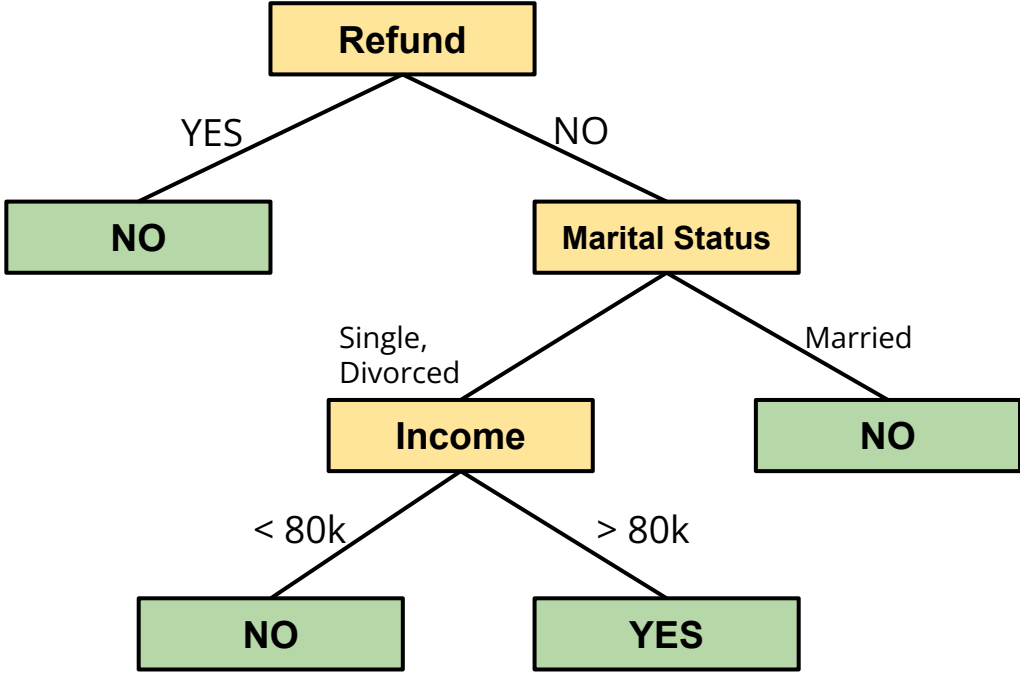


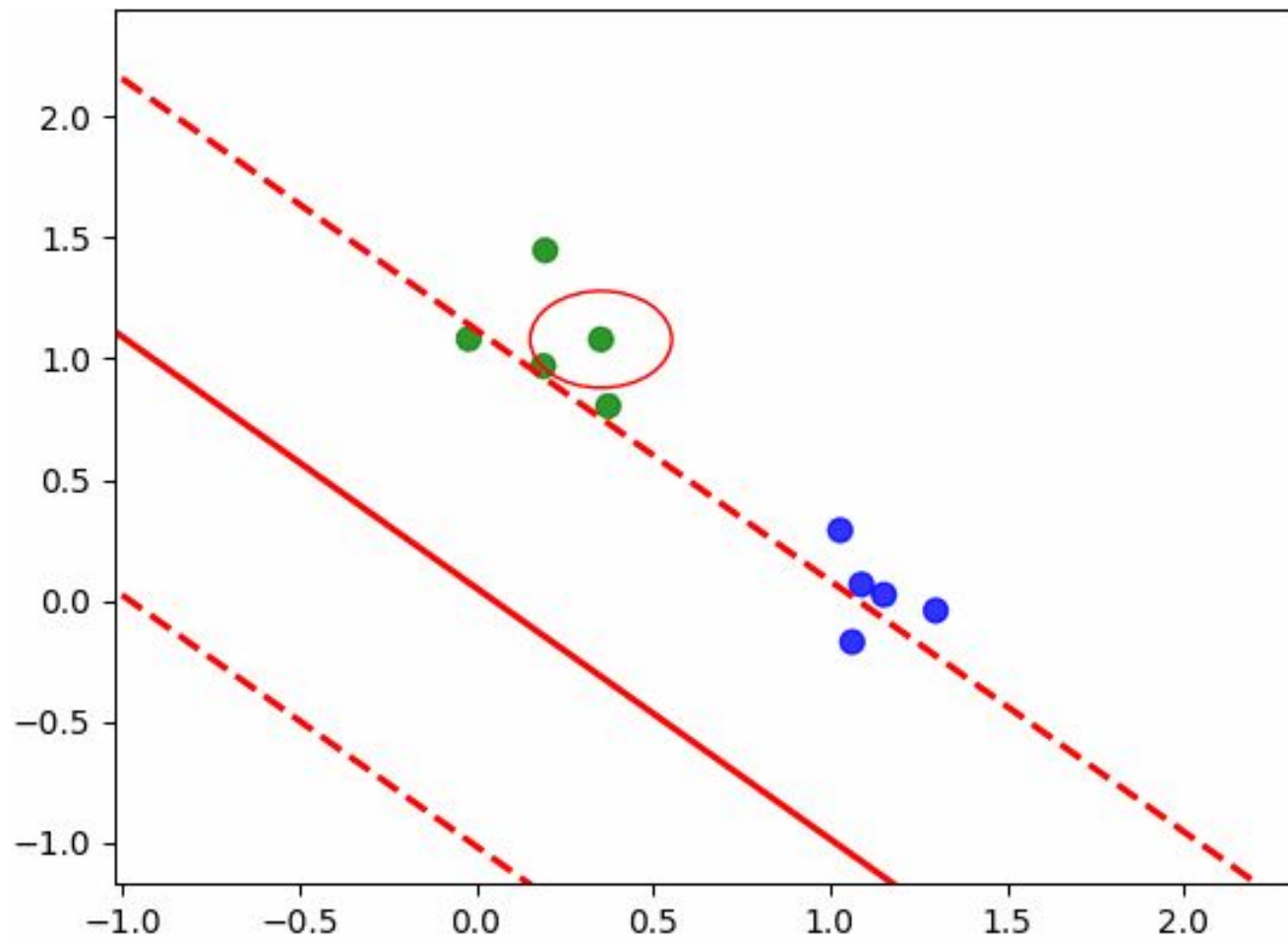
(b) 2-nearest neighbor

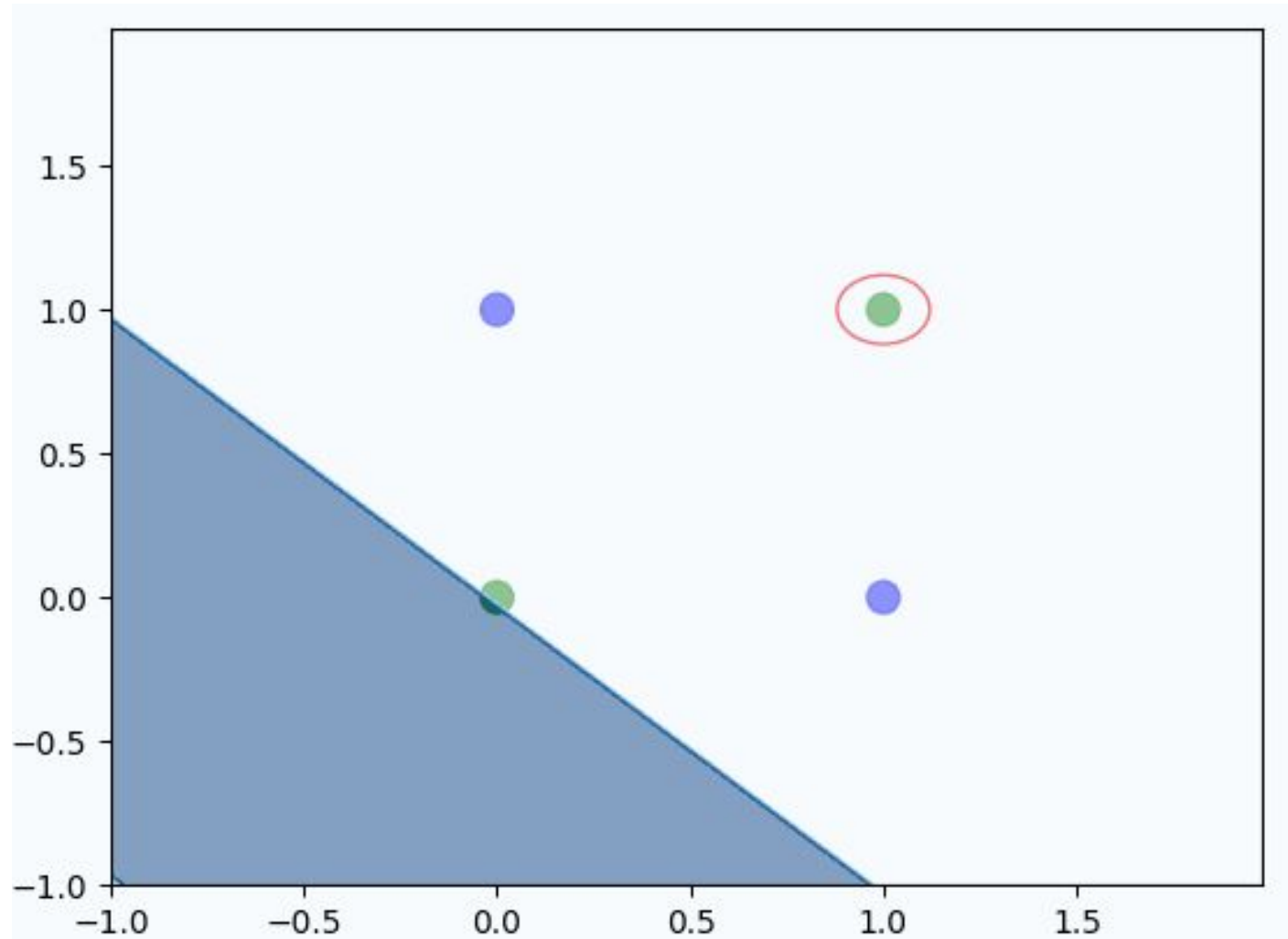


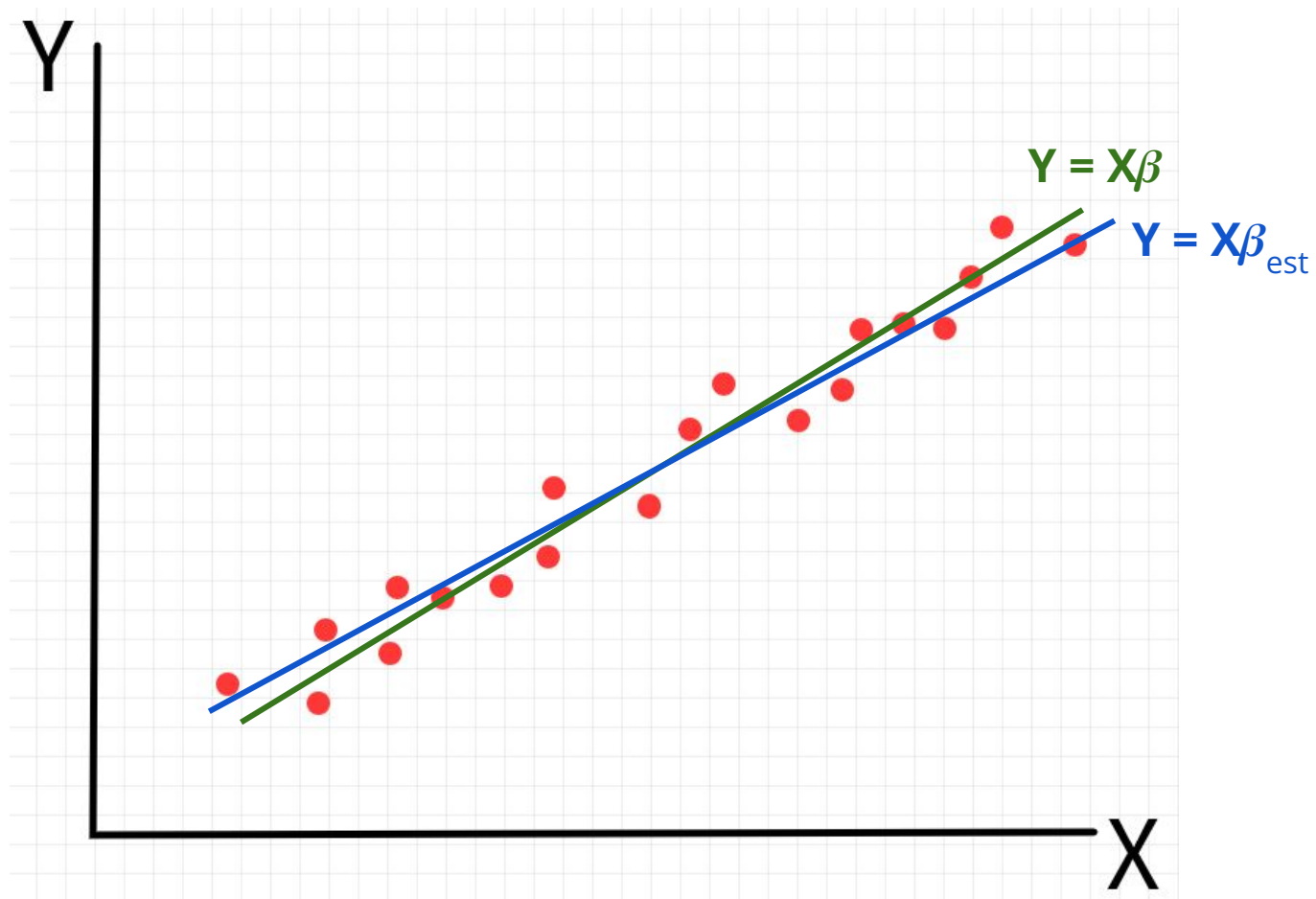
(c) 3-nearest neighbor

Refund	Marital Status	Income	Class
Yes	Single	125k	No
No	Married	100k	No
No	Single	70k	No
Yes	Married	120k	No
No	Divorced	90k	Yes
No	Married	60k	No
Yes	Divorced	220k	No
No	Single	85k	Yes
No	Married	75k	No
No	Single	90k	Yes









OLS Regression Results

```

=====
Dep. Variable:          y      R-squared:          0.840
Model:                  OLS    Adj. R-squared:       0.836
Method:                 Least Squares    F-statistic:       254.1
Date:                  Sun, 20 Mar 2022    Prob (F-statistic): 2.72e-39
Time:                  11:36:16    Log-Likelihood:    -482.37
No. Observations:      100    AIC:              970.7
Df Residuals:          97    BIC:              978.5
Df Model:               2
Covariance Type:       nonrobust
=====

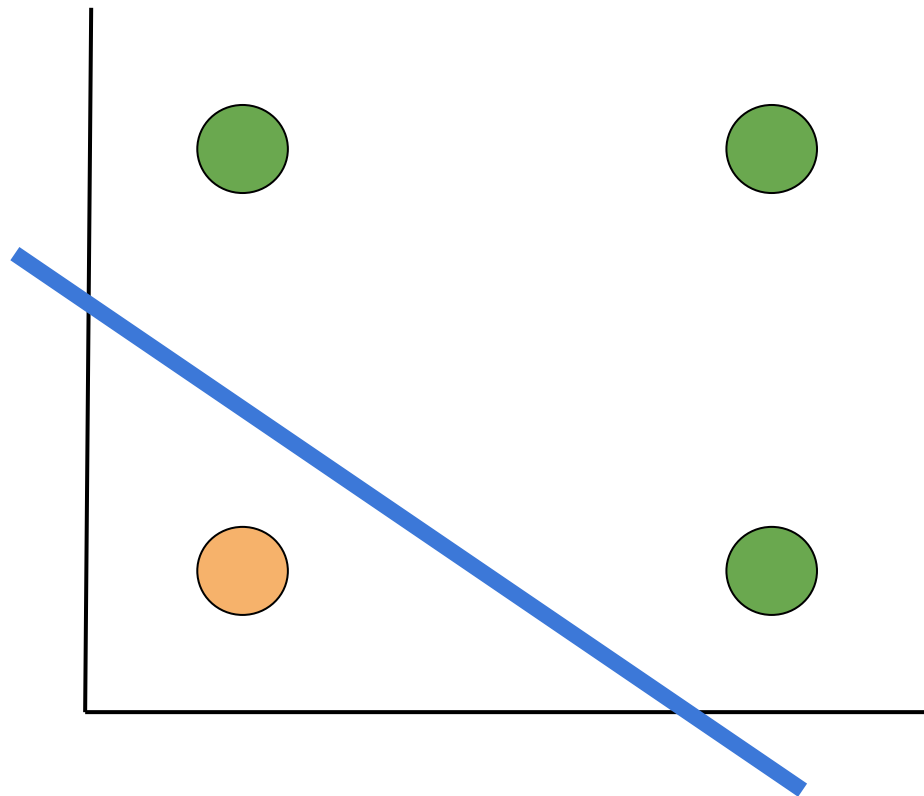
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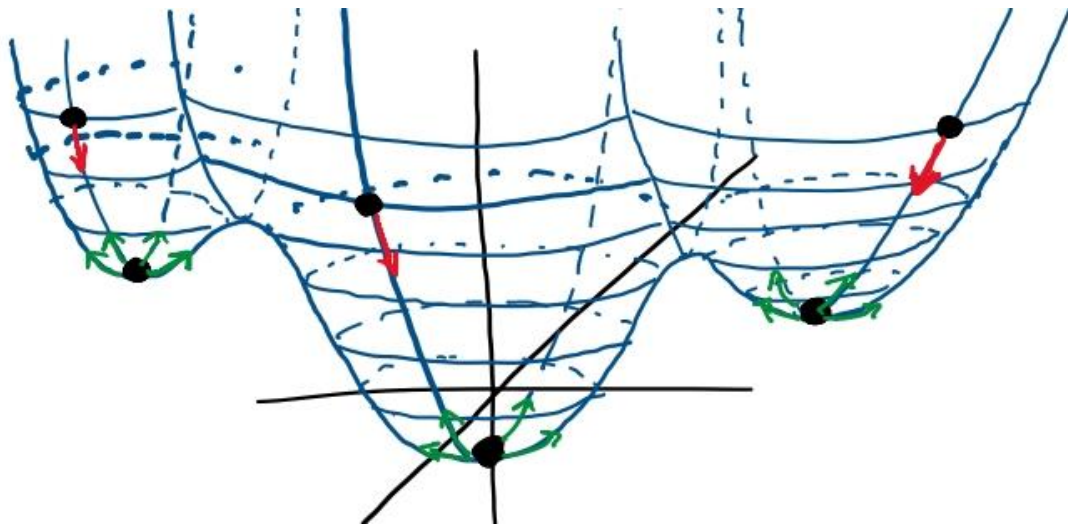
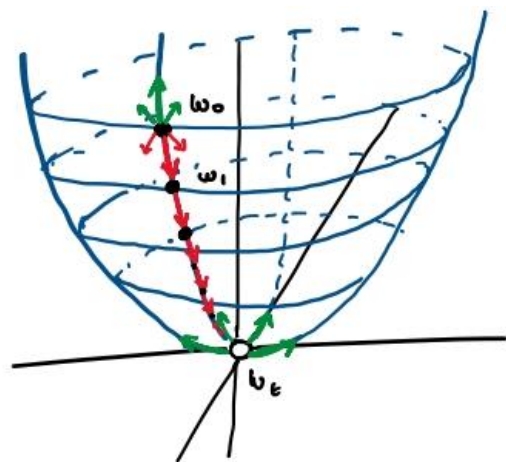
	coef	std err	t	P> t	[0.025	0.975]
const	2.1912	3.162	0.693	0.490	-4.085	8.467
x1	29.3912	3.274	8.977	0.000	22.893	35.889
x2	78.1391	3.594	21.741	0.000	71.006	85.272

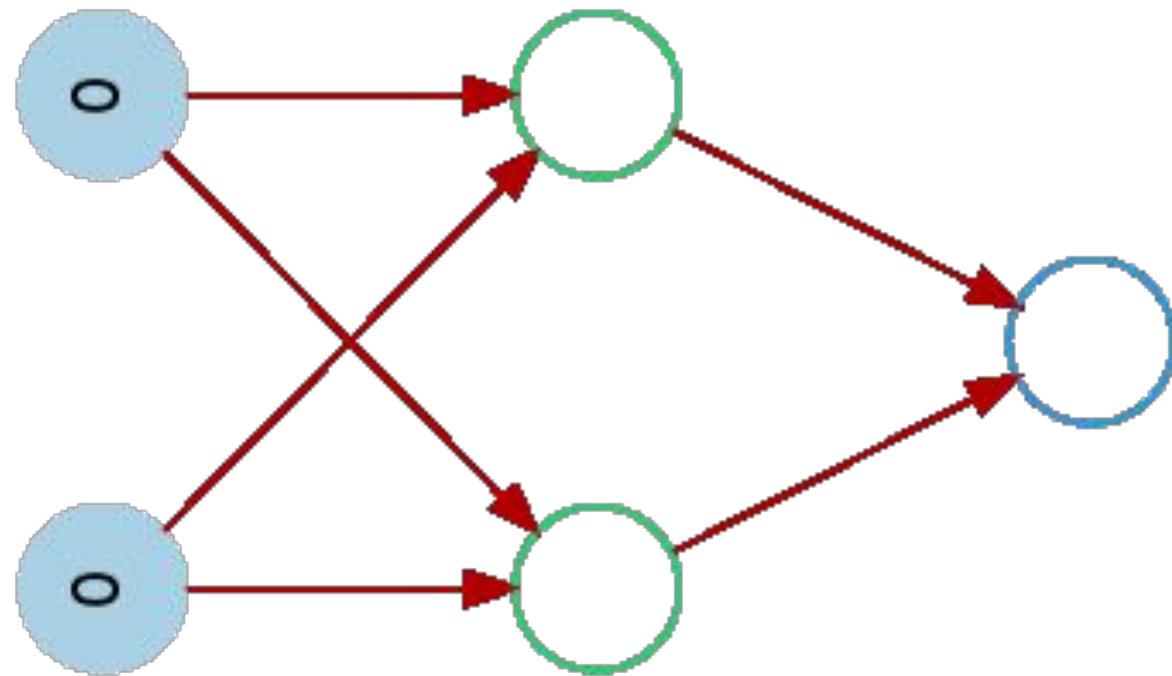
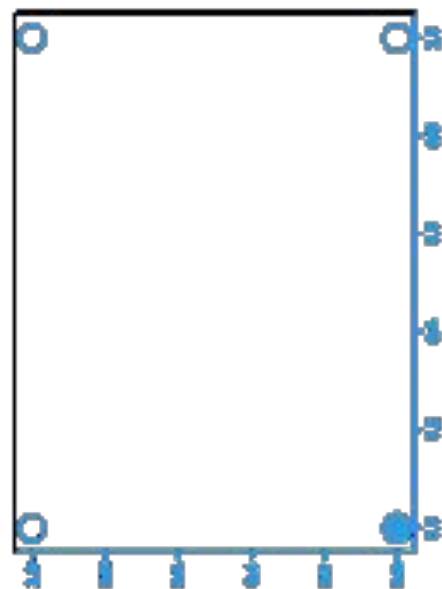
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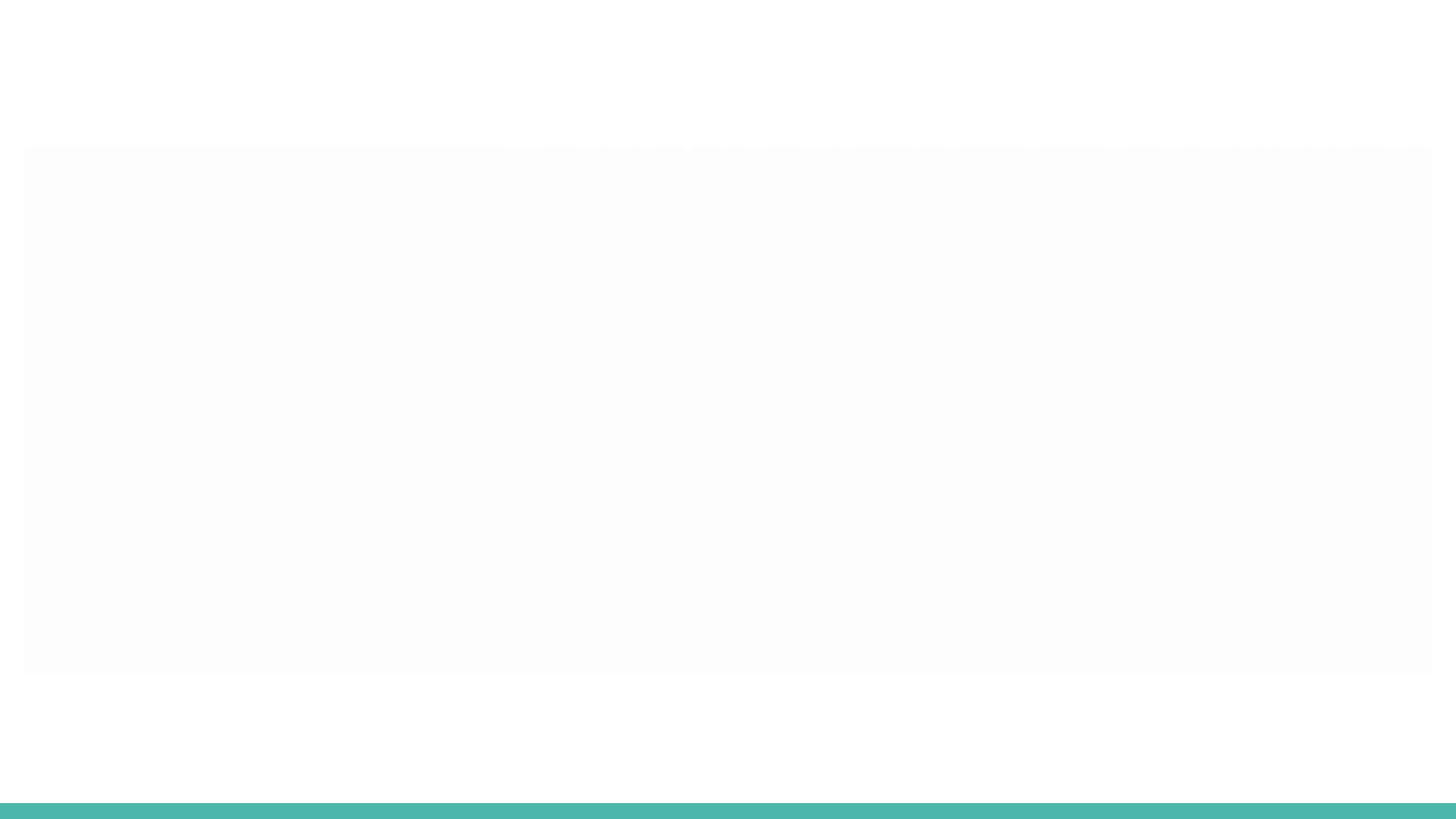
=====
Omnibus:              1.279    Durbin-Watson:          1.824
Prob(Omnibus):        0.527    Jarque-Bera (JB):       1.065
Skew:                 0.253    Prob(JB):               0.587
Kurtosis:             2.999    Cond. No.               1.38
=====

```











Given the graph

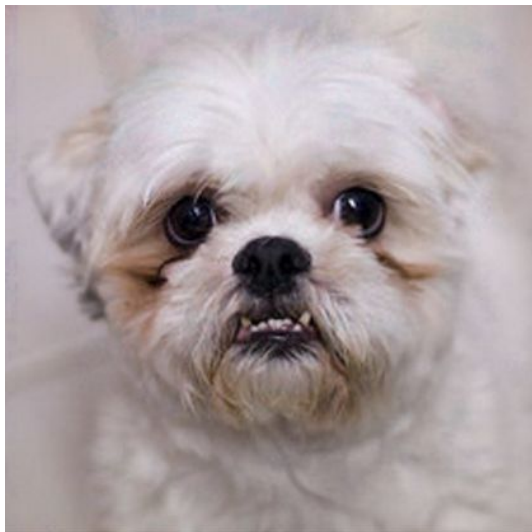


Find 1) the adjacency matrix A

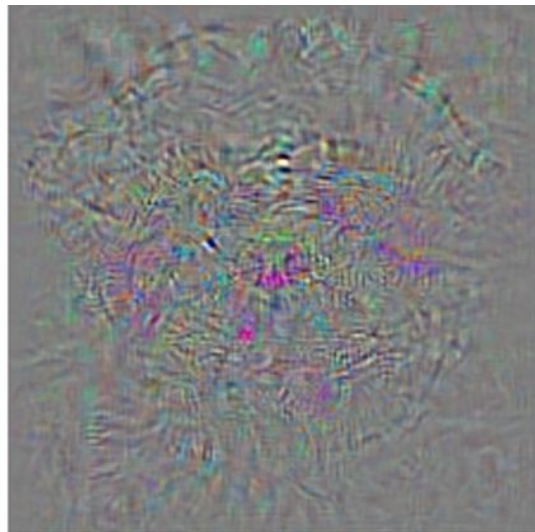
2) the matrix giving the number of 3 step walks

3) the generating function for walks from point $i \rightarrow j$

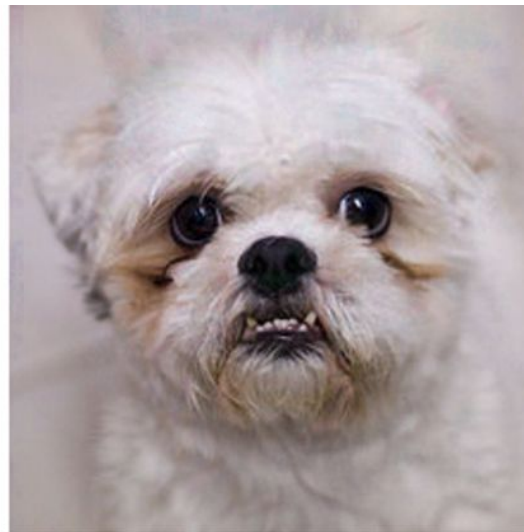
4) the generating function for walks from points $1 \rightarrow 3$



dog



+noise



ostrich