Project 4 Question 5, 6

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Question 5

Pen Data

Max: 0.907756483723

Average: 0.903637863725

Standard Deviation: 0.00774835628734

Car Data

Max: 0.864754837236

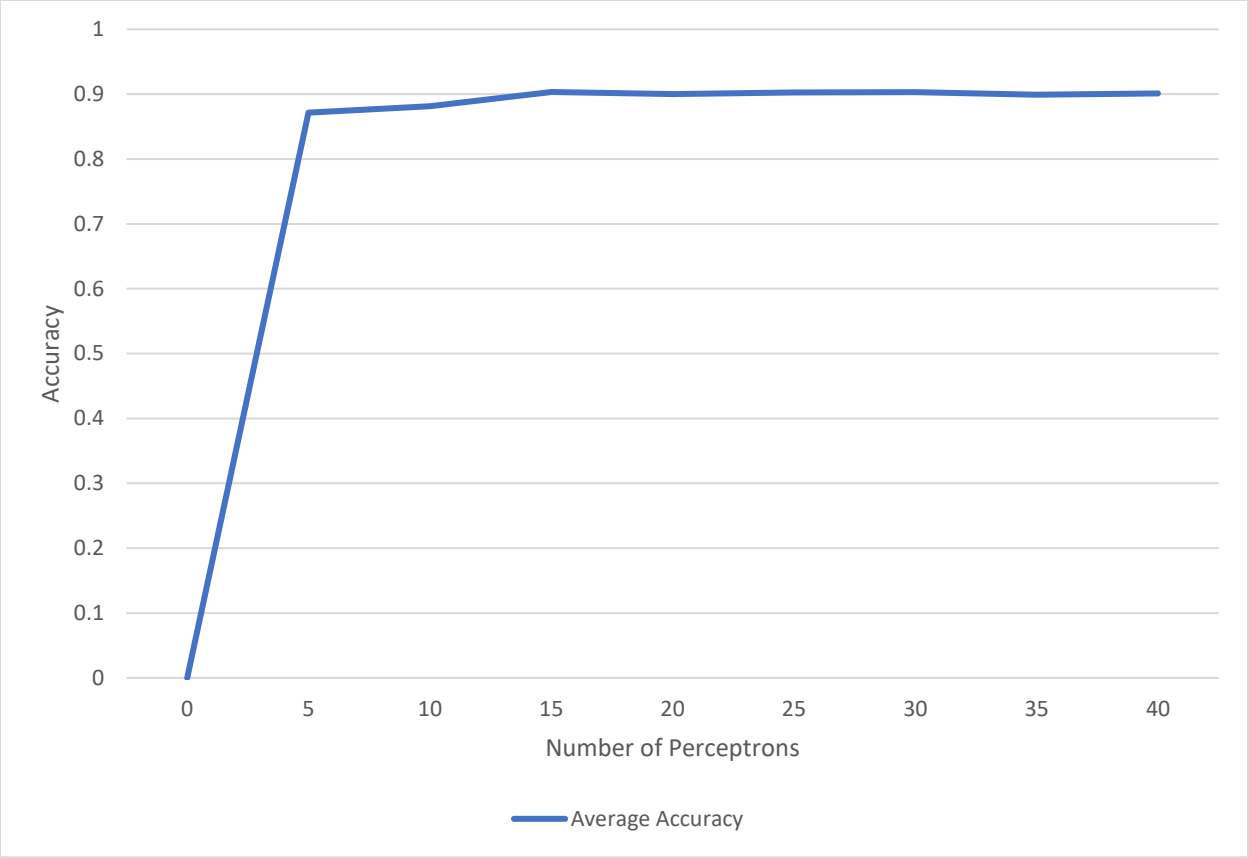
Average: 0.827258633637

Standard Deviation: 0.00233473846284

Question 6

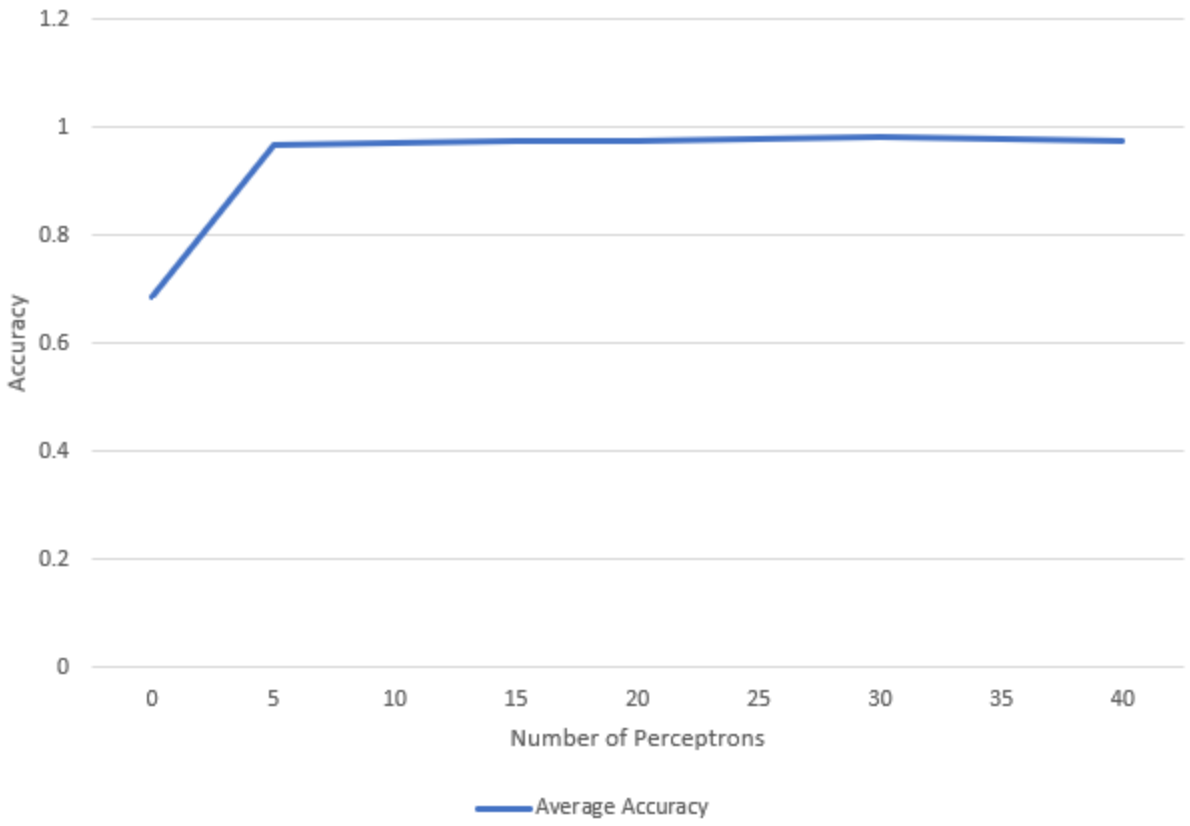
Pen Data

# of Neurons	Average Accuracy	Accuracy Standard Deviation	Max Accuracy
0	0	0	0
5	0.871335079	0.016129776	0.893979058
10	0.881253427	0.006833915	0.892382198
15	0.903373356	0.004343083	0.908805031
20	0.899942824	0.006972133	0.908519154
25	0.902401372	0.005776143	0.907661521
30	0.903030303	0.004116638	0.908805031
35	0.899142367	0.005730118	0.90651801
40	0.901200686	0.001977315	0.904230989



The average accuracy seems to be extremely consistent for the test car dataset after 5 hidden layer perceptrons. Without any perceptrons the neural net was unable to work properly thus leading an accuracy of 0%.

# of Neurons	Average Accuracy	Accuracy Standard Deviation	Max Accuracy
0	0.685	0	0.685
5	0.967	0.023579652	0.98
10	0.97	0.005477226	0.98
15	0.976	0.002	0.98
20	0.975	0.005477226	0.98
25	0.978	0.00244949	0.98
30	0.984	0.002	0.985
35	0.978	0.00678233	0.985
40	0.975	0.003162278	0.98



The average accuracy seems to be extremely consistent for the test car dataset after 5 hidden layer perceptrons. Despite 0 perceptrons, there was still an accuracy of 68.5%.