Q1_voted_perceptron_report

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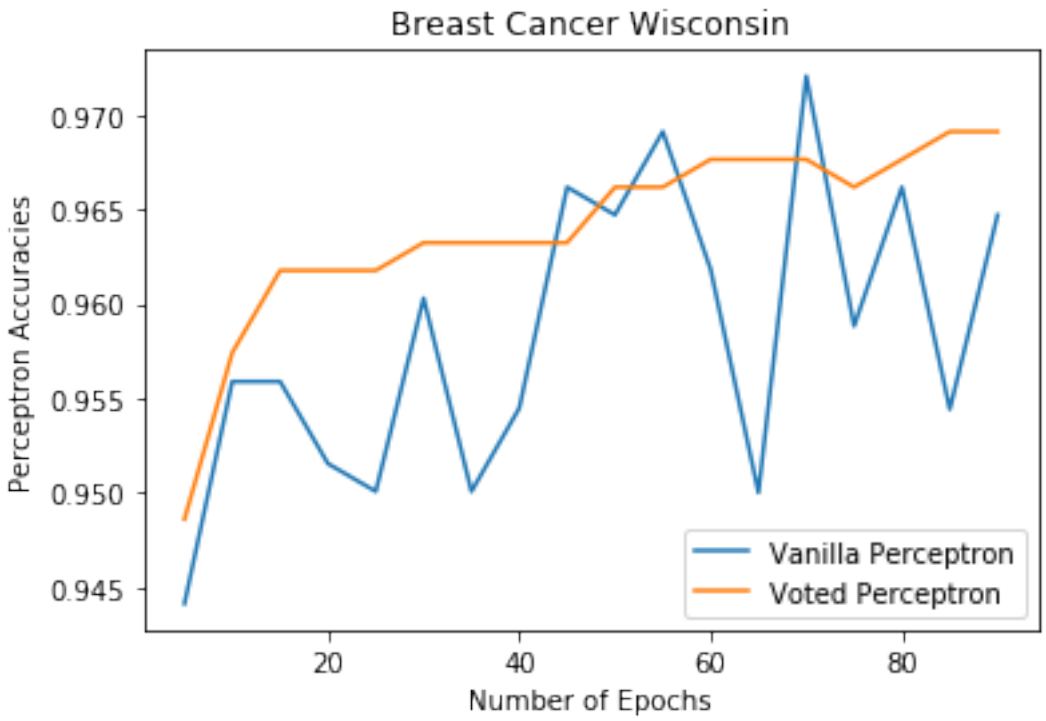
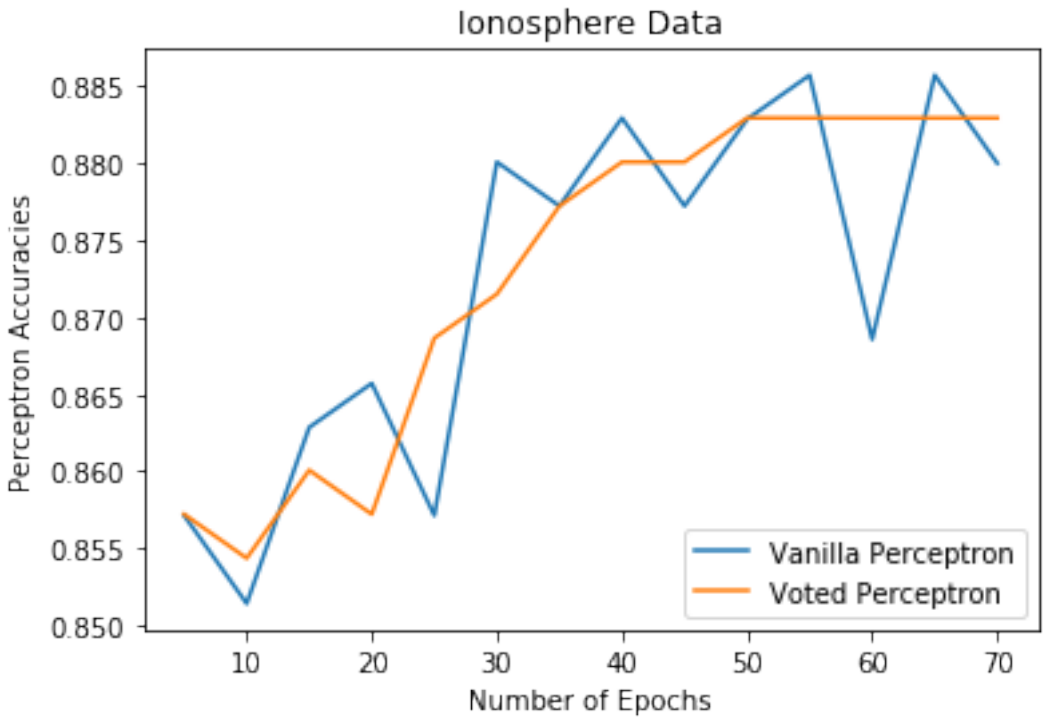
Name: Aditya Saripalli
Roll No: 20173071

In [33]:



In [32]:



1 Observations:

1.1 1. Breast cancer data set:

The "Breast Cancer Wisconsin" plot shows the values till 100 epochs.
-> With Vanilla Perceptron, the plot between number of epochs vs mean accuracies donot converge even for a run till 100 epochs. The mean accuracies values are between 94% to 97%.
-> With Voted Perceptron the mean accuracies are between 90% to 96.6%. The plot between number of epochs vs mean accuracies shows convergence after post 90 epochs with 96.6% accuracy.

1.2 2. Ionosphere data set:

The "Ionosphere Data" plot shows the values till 100 epochs.
-> With Vanilla Perceptron, the plot between number of epochs vs mean accuracies donot converge even for a run till 100 epochs. The mean accuracies values are between 85% to 90%.
-> With Voted Perceptron the mean accuracies are between 82% to 86%. The plot between number of epochs vs mean accuracies shows convergence after post 70 epochs with 84.6% accuracy.

On both the data sets, we can observe that the Voted Perceptron algorithm do converge post some epoch value, but with the Vanilla Perceptron algorithm convergence in not guranteed though it gives better accuracy percentage with some epochs.