Part A - Perceptron Learning Algorithm

	Perceptron Learning Algorithm			
	PM1	**PM2**	**PM3**	**PM4**
Accuracy	91.489%	90.425%	96.276%	96.276%

Differences between PM1 and PM2:

Perceptron depends on the initial training data set taken, since we are changing the order of data sets in PM2 from PM1 the accuracies are different as weights are updated in a varying manner.

Differences between PM1 and PM3:

PM3 gives a better accuracy as the data set is normalized, the number strength of individual features is minimized which results in giving equal importance to all the features.

For example, one feature ‘smoothness mean’ has value around ‘0.12’ whereas another feature ‘area_worst’ has value around ‘1000’, if the data set is not normalized the feature area_worst will dominate the feature ‘smoothness_mean’ because of its numerical strength.

Differences between PM3 and PM4:

PM3 and PM4 have the same accuracy even after changing the order of feature tuple, as the dot product at each instances not affected by changing the order of the tuple.

For example, (x1, x2, x3, x4).(w1, w2, w3, w4) = (x2, x1, x3, x4).(w2, w1, w3, w4)