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Project 1

Q.2.b

Analyzing the outputs of KNN, Naive Bayes and Logistic Regression.

KNN,

for K=1		
	(162,53,28)	W
	(168,75,32)	M
	(175,70,30)	W
	(180,85,29)	M
K=3		
	(162,53,28)	W
	(168,75,32)	M
	(175,70,30)	W
	(180,85,29)	M
K=5		
	(162,53,28)	W
	(168,75,32)	M
	(175,70,30)	M
	(180,85,29)	M

Naive Bayes,

(162,53,28)	W
(168,75,32)	M
(175,70,30)	M
(180,85,29)	M

Logistic Regression,

162	53	28	W
168	75	32	M
175	70	30	M
180	85	29	M

As we can see that when K=1 the prediction is same as what is expected i.e W,M,W,M. Since, our training dataset as well test dataset is too small so it becomes comparatively easy to predict the outcomes for KNN. However, we can also see that as the size of finding K-nearest neighbour increases the algorithm starts behaving the same as the rest of classifiers.
Fortunately, we can estimate that if there would have been larger dataset (training) to train the system our logistic regression algorithm would likely predict with higher accuracy than other two. Because, logistic regression can work efficiently on sufficiently large dataset.