Assignment 6: Logistic Regression

In this exercise, you will use the Weka Explore to create and test the models using breast cancer data set (LogisticTraining.arff, LogisticValidating.arff.). You will apply four learning algorithms on the data and compare their performance. First, use training data to create the model. Then, use validating data to find the performance.

- Learning algorithms: logistic regression (Logistic, not SimpleLogistic), decision tree (J48), Naive Bayes (simple), and neural network (multilayer perceptron)

Complete the following tables.

Training Please View Part 2 for Weka Input Validation

	Naive Bayes		Logistic Regression		NN Multilayer Perceptron		DT J48	
Correct Classified Instances	96.2406 %		255 or 95.8647		96.2406 %		.93609	
TP Rate	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.
	.988	.951	.928	.973	.928	.978	.904	.951

Validating

	Naive Bayes		Logistic Regression		NN		DT	
Correct Classified Instances	95.612 %		94.2263 %		.942263		.937644	
TP Rate	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.
	.968	.949	.899	.967	.911	.96	.88	.971

Then, compare your results to mine.

Training

	Naive Bayes		Logistic Regression		NN		DT	
Correct Classified Instances	96.616%		95.864%		96.240%		93.609%	
TP Rate	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.
	1	95%	92.8%	97.3%	92.8%	97.8%	90.4%	95.1%

Validating

	Naive Bayes		Logistic Regression		NN		DT	
Correct Classified Instances	95.843%		94.226%		94.226%		93.764%	
TP Rate	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.	Mal.	Ben.
	97.5%	94.9%	89.9%	96.7%	91.1%	96.0%	88.0%	97.1%

Discuss your observations.