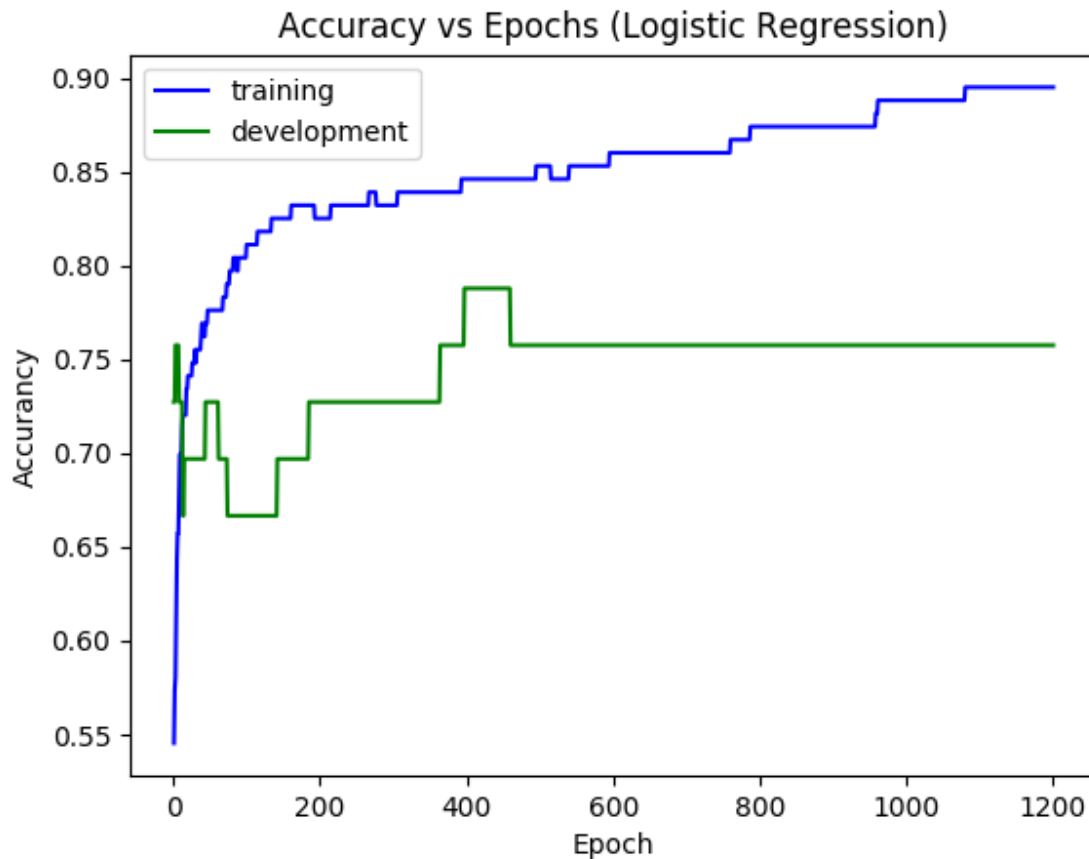


Writeup

Part One: Logistic Regression

I. Accuracy vs Epochs (Logistic Regression)



Learning Rate: 1

Total Number of Epochs: 700

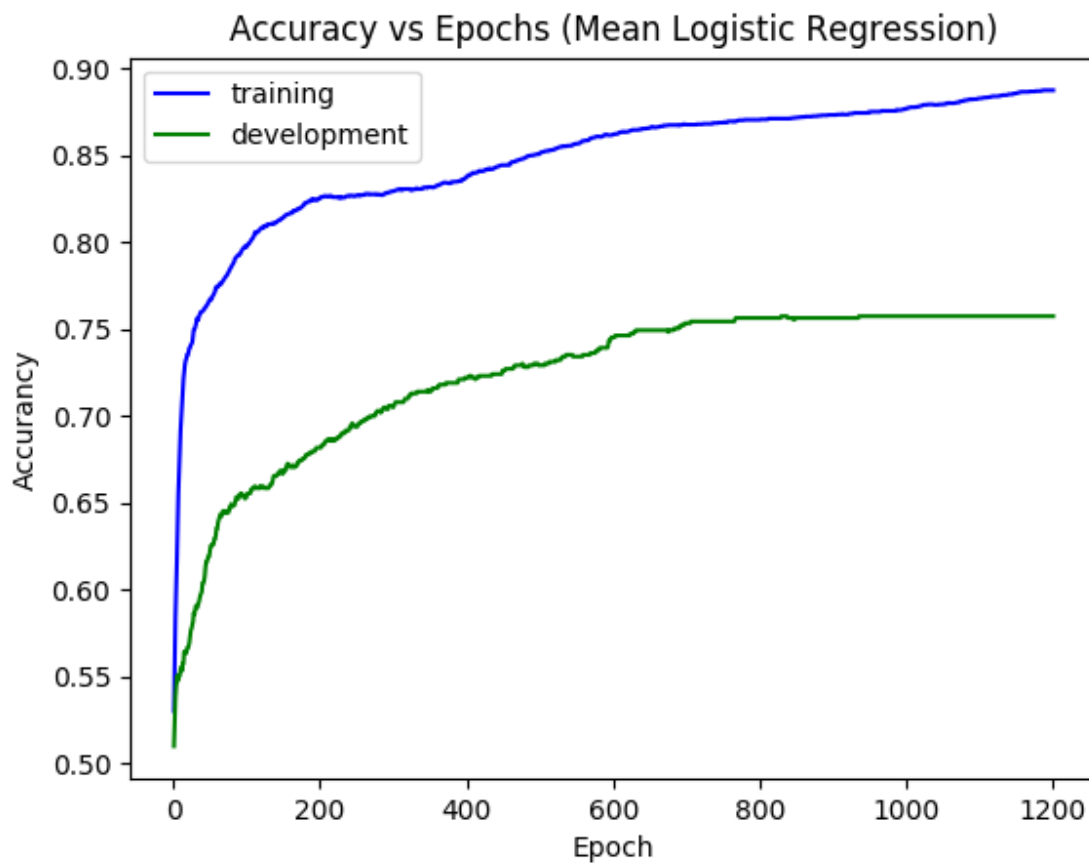
Final Development Set Accuracy: 0.75758

Final Training Set Accuracy: 0.89510

Best Development Set Accuracy: 0.78788

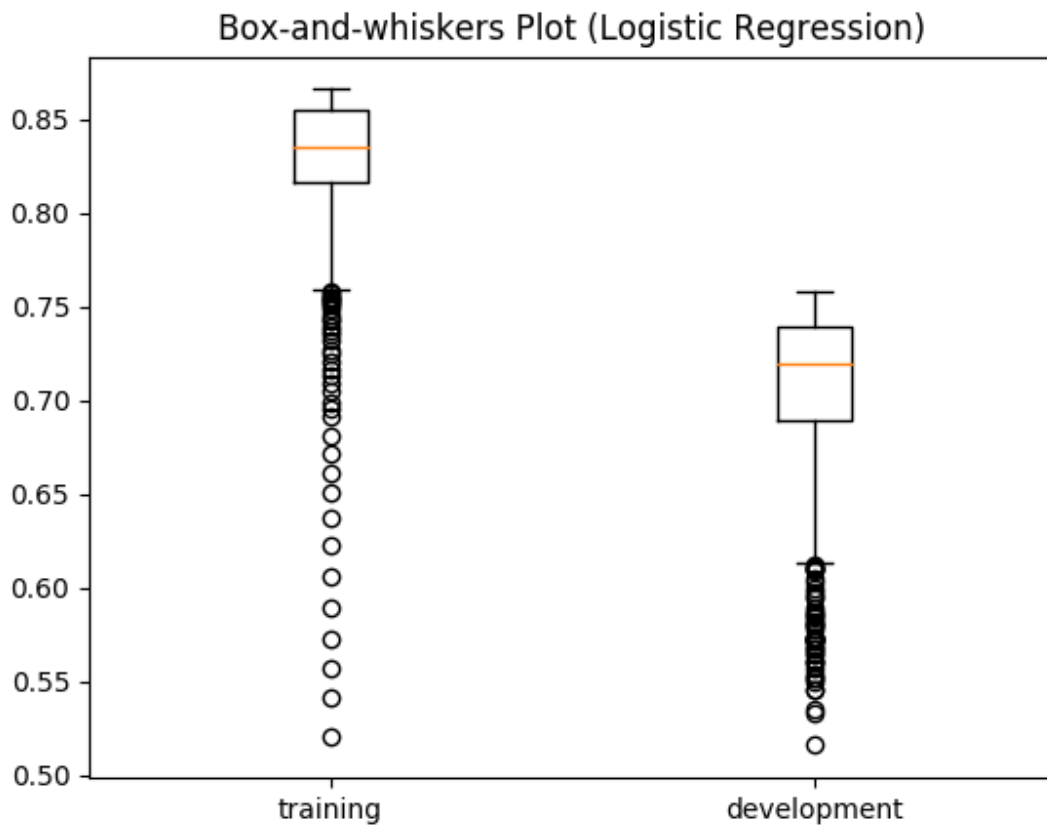
Best Training Set Accuracy: 0.89510

II. Mean Accuracy vs Epochs (Logistic Regression)



Training Time: 30

III. Optional 5% Bonus Point



Boxplot for mean curve of 30 training processes

IV. Answers

1. Yes, the asymptote for the training data is: $y = 0.90909$

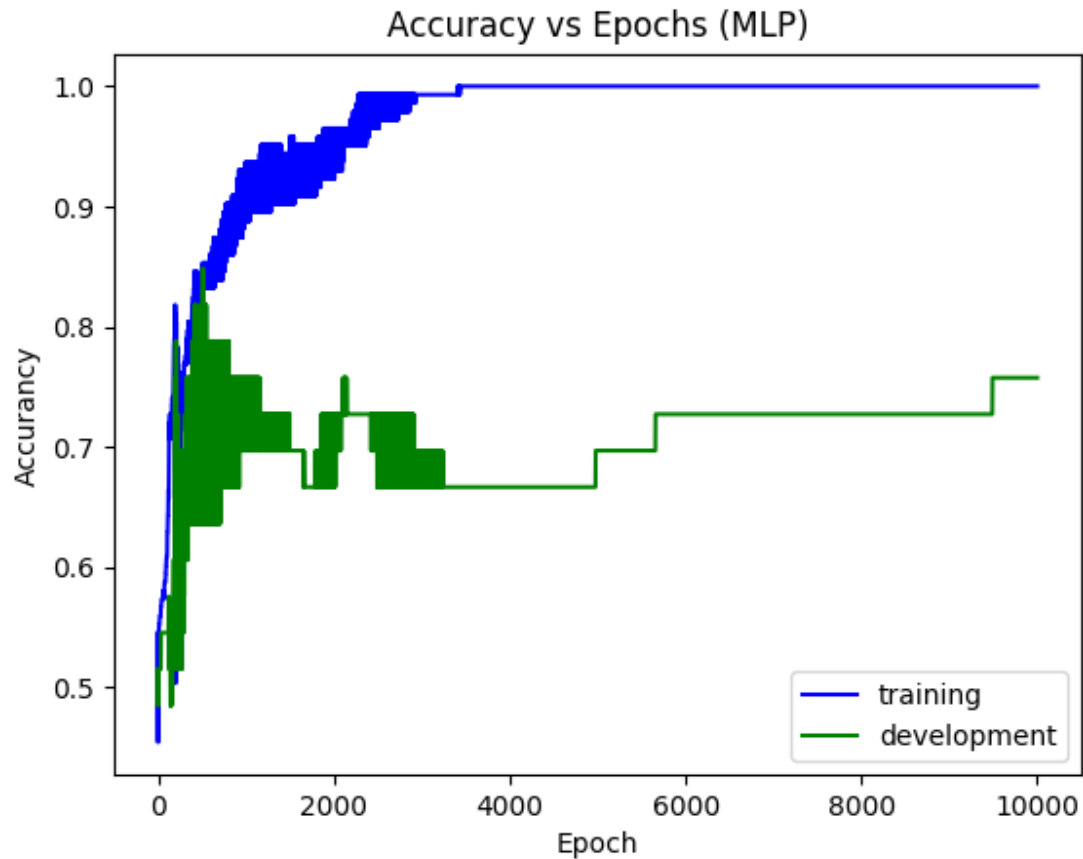
Number of epoch to get a good model: Around 700

2. Yes, the asymptote for the development data is: $y = 0.75758$

Number of epoch to get a good model: Around 1000

Part Two: Multilayer Perceptrons

I. Accuracy vs Epochs (MLP)



Learning Rate: 1

Total Number of Epochs: 10000

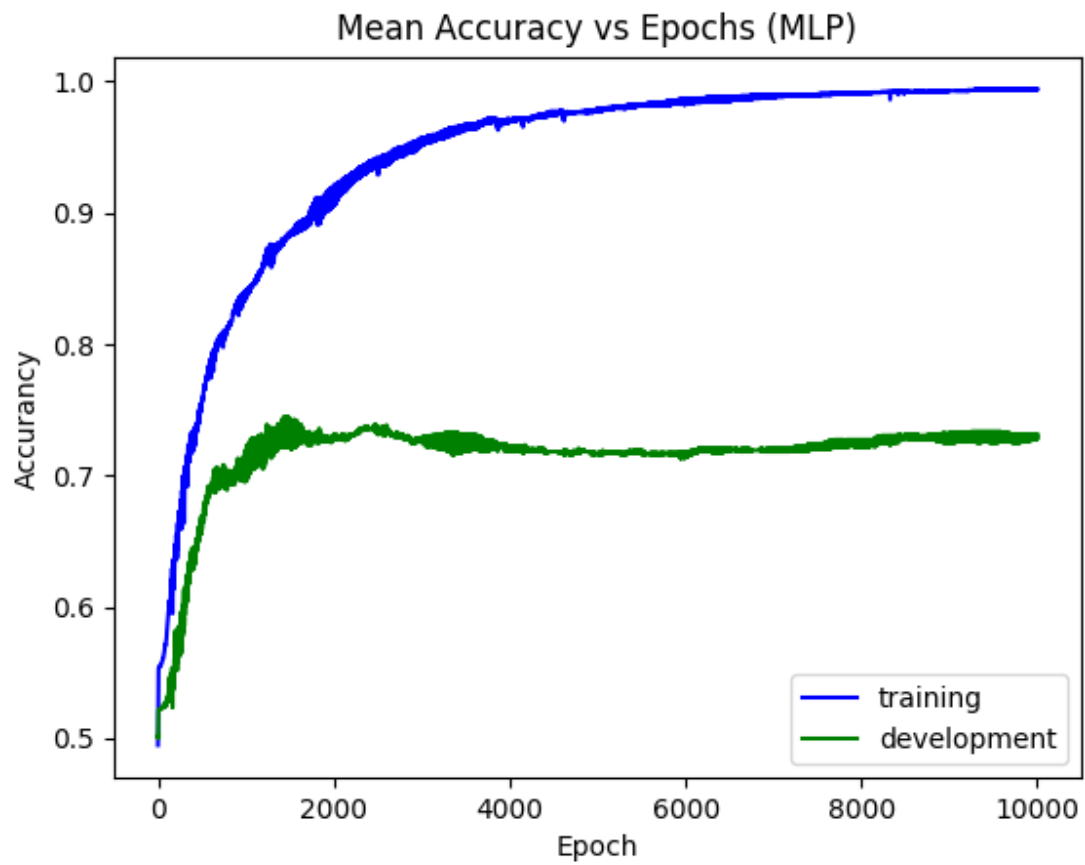
Final Development Set Accuracy: 0.75758

Final Training Set Accuracy: 1.00000

Best Development Set Accuracy: 0.84849

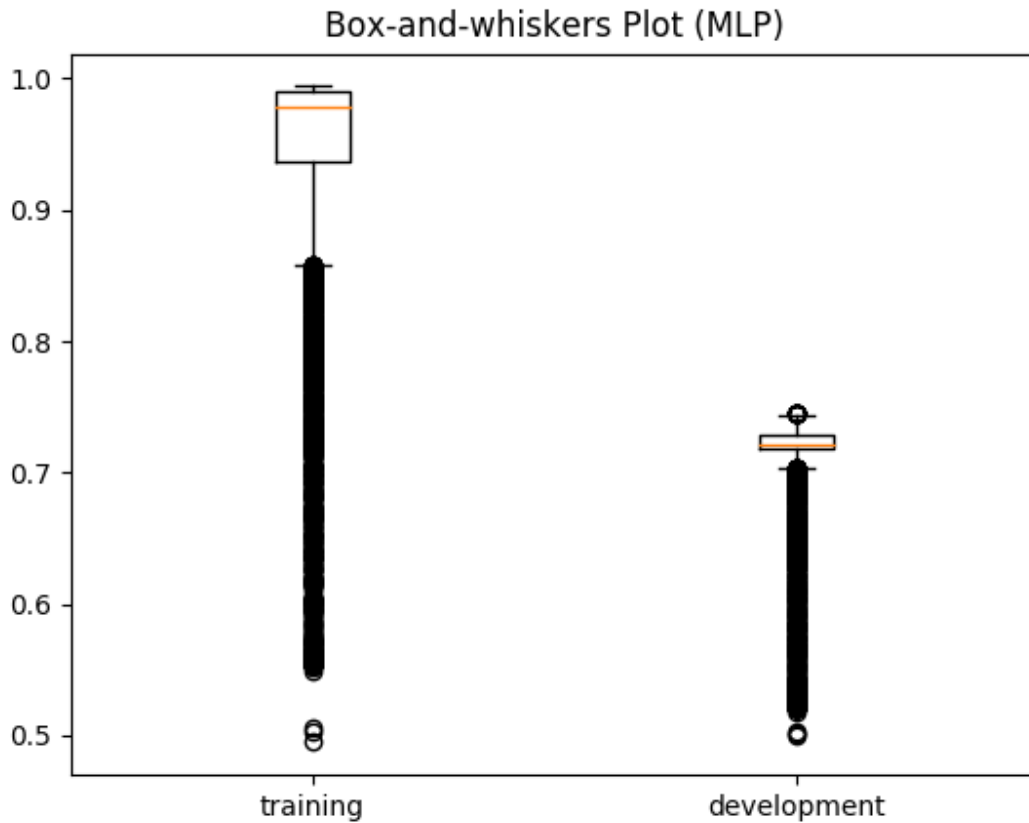
Best Training Set Accuracy: 1.00000

II. Mean Accuracy vs Epochs (MLP)



Training Time: 30

III. Optional 5% Bonus Point



Boxplot for mean curve of 30 training processes

IV. Answers

1. Yes, the asymptote for the training data is: $y = 1.00000$
Number of epoch to get a good model: Around 8000
2. Yes, the asymptote for the development data is: $y = 0.75758$
Number of epoch to get a good model: Around 2000

Part Three: Putting It All Together

3. Member contributions:

Name	NetID	Contribution	Total_%_of_work
Jiyun Xu	31425711		50%
Yangyang Shao	31434102		50%

4. Discussion: