Exercise 2

Cross Entropy for Classifier with 1 hidden layer of 20 units: 0.20620680297264624
Cross Entropy for Classifier with 2 hidden layers of 10 units: 0.22185538578683303
Best is Classifier 1
Testing Cross Entropy: 0.14483428087059372

Exercise 3

Cross Entropy for Gini: 0.5331292993371863
Cross Entropy for Info Gain: 0.4650689391179118
Best is Information Gain
Testing Cross Entropy: 0.45502554274592477

Exercise 4

20 Stumps Cross Entropy: 0.641563128012411
40 Stumps Cross Entropy: 0.6594395475653865
60 Stumps Cross Entropy: 0.668290374765244
Best is 20 Boosts
Testing Cross Entropy: 0.6428168129524989

Exercise 5

MLP Highest Youden is: 0.887473666003818 Probability threshold is: 0.391
AUC: 0.939104413153408
Decision Tree Highest Youden is: 0.5581571735363348 Probability threshold is: 0.359
AUC: 0.7503247098560318
Boost Highest Youden is: 0.6551672645195529 Probability threshold is: 0.487
AUC: 0.804933978348379