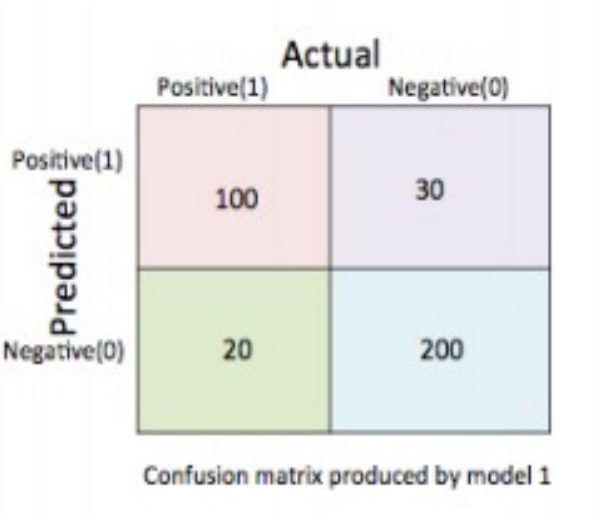
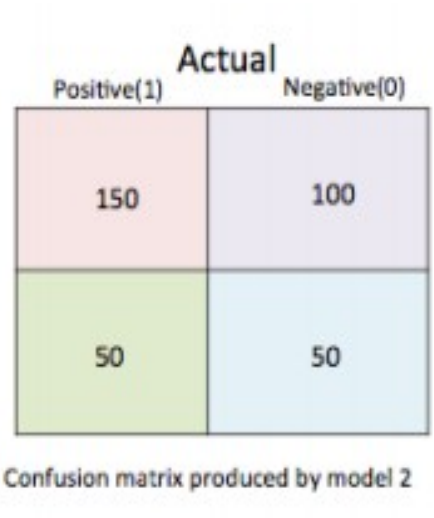
Assignment 2.2

Question 2:

Consider below two confusion matrixes produced by two the different supervised models on the same data set. Analyze the performances of the models by computing metrics, accuracy, sensitivity, specificity and F1-score. Which model is better?



Confusion matrix produced by model 1



Confusion matrix produced by model 2

Metrics for Model 1:

a) Accuracy = $\frac{TP+TN}{FN+FP+TP+TN}$ = 0.86

b) Recall = $\frac{TP}{TP+FN}$ = 0.83

c) Precision = $\frac{TP}{TP+FP}$ = 0.76

d) F1-Score = $2\frac{PRE \times REC}{PRE+REC}$ = 0.79

Metrics for Model 2:

a) Accuracy = $\frac{TP+TN}{FN+FP+TP+TN}$ = 0.57

b) Recall = $\frac{TP}{TP+FN}$ = 0.75

c) Precision = $\frac{TP}{TP+FP}$ = 0.60

d) F1-Score = $2\frac{PRE \times REC}{PRE+REC}$ = 0.67

From the above metrics it is very clear that first model is better than the second one.s