HW21 Observation Conclusions:

1. In comparing the two ROC curve model graphs, one can clearly view the discrepancy in the first model between its the training set calculations and the testing set calculations. The discrepancy is big enough to not have the need to graph the calculations. Consequently, the calculations clearly support this observation. This is not well fit model for this data set.

TRAINING SET

	precision	recall	f1-score	support
0	0.63	0.72	0.67	6090
1	0.68	0.58	0.63	6090
accuracy			0.65	12180
macro avg	0.66	0.65	0.65	12180
weighted avg	0.66	0.65	0.65	12180

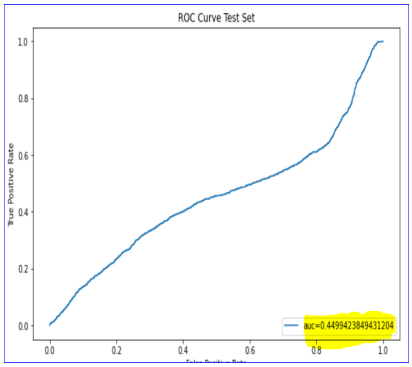
```
[[4386 1704]
 [2529 3561]]
```

Testing SET

	precision	recall	f1-score	support
0	0.51	0.73	0.60	2351
1	0.53	0.31	0.39	2351
accuracy			0.52	4702
macro avg	0.52	0.52	0.50	4702
weighted avg	0.52	0.52	0.50	4702

```
[[1710  641]
 [1617  734]]
```

2. To further corroborate the findings, one can observe the AUC score to be less than .05, which clearly depicts the model to have no class separation.



3. In contrast, the second ROC curve model graph, the model is well fitted per the training calculations. While there are discrepancies in the training set and testing, it is above the .05 threshold, which fortifies, the model is well fitted.

TRAINING SET

	precision	recall	f1-score	support
0	1.00	1.00	1.00	6090
1	1.00	1.00	1.00	6090
accuracy			1.00	12180
macro avg	1.00	1.00	1.00	12180
weighted avg	1.00	1.00	1.00	12180

```
[[6090    0]
 [   0 6090]]
```

Testing SET

	precision	recall	f1-score	support
0	0.71	0.46	0.56	2351
1	0.60	0.81	0.69	2351
accuracy			0.64	4702
macro avg	0.66	0.64	0.62	4702
weighted avg	0.66	0.64	0.62	4702

```
[[1079 1272]
 [ 441 1910]]
```