

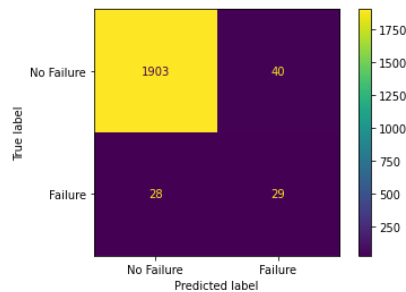
## All three models used on the questions:

### 1<sup>st</sup> Original Model Results & Metrics:

Dataset Statistics	Training	Test	Total
Positive examples :	282	57	339
Negative examples :	7718	1943	9661
Total :	8000	2000	10000

#### FITTING REPORT

Metric		Training	Test
accuracy	:	1.0000	0.9660
balanced accuracy	:	1.0000	0.7441
precision	:	1.0000	0.4203
recall	:	1.0000	0.5088
F1 score	:	1.0000	0.4603
ROC AUC score	:	1.0000	0.7441

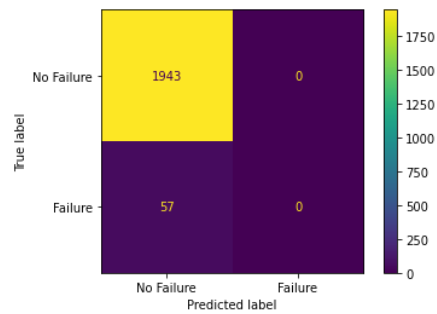


### 2<sup>nd</sup> Model (3 hidden layers each with 50 nodes, and activation function: logistic) Results & Metrics:

Dataset Statistics	Training	Test	Total
Positive examples :	282	57	339
Negative examples :	7718	1943	9661
Total :	8000	2000	10000

#### FITTING REPORT

Metric		Training	Test
accuracy	:	0.9647	0.9715
balanced accuracy	:	0.5000	0.5000
precision	:	0.0000	0.0000
recall	:	0.0000	0.0000
F1 score	:	0.0000	0.0000
ROC AUC score	:	0.5000	0.5000



### 3<sup>rd</sup> Model (1 hidden layers with 20 nodes, and activation function: tanh) Results & Metrics:

Dataset Statistics	Training	Test	Total
Positive examples :	282	57	339
Negative examples :	7718	1943	9661
Total :	8000	2000	10000

#### FITTING REPORT

Metric		Training	Test
accuracy	:	0.9852	0.9790
balanced accuracy	:	0.8454	0.7848
precision	:	0.8596	0.6471
recall	:	0.6950	0.5789
F1 score	:	0.7686	0.6111
ROC AUC score	:	0.8454	0.7848

