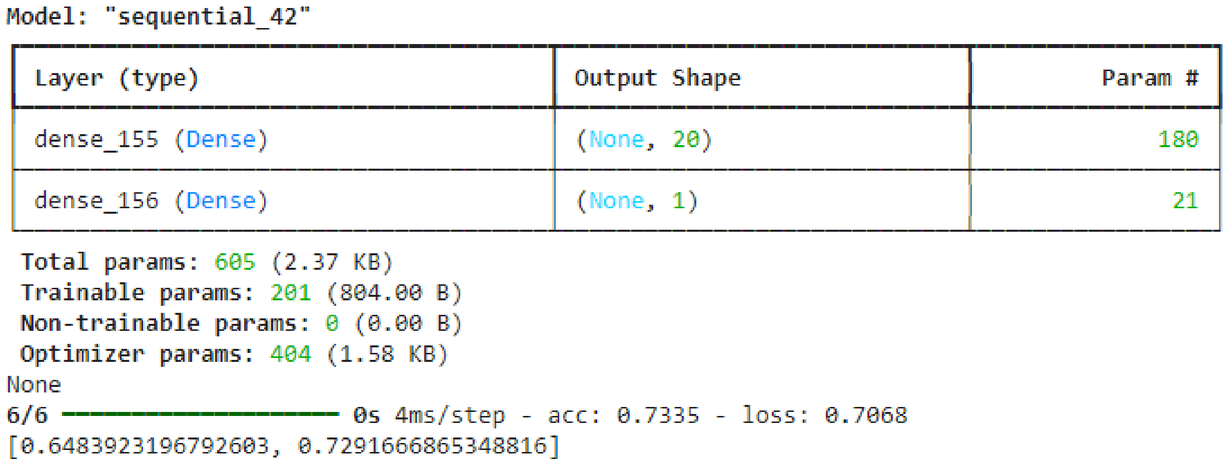
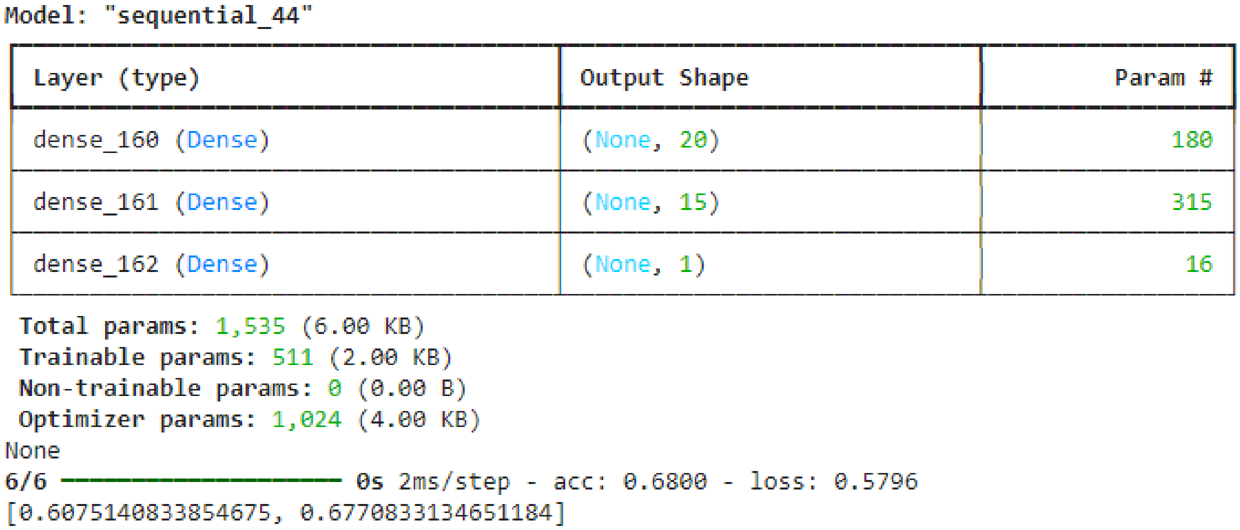
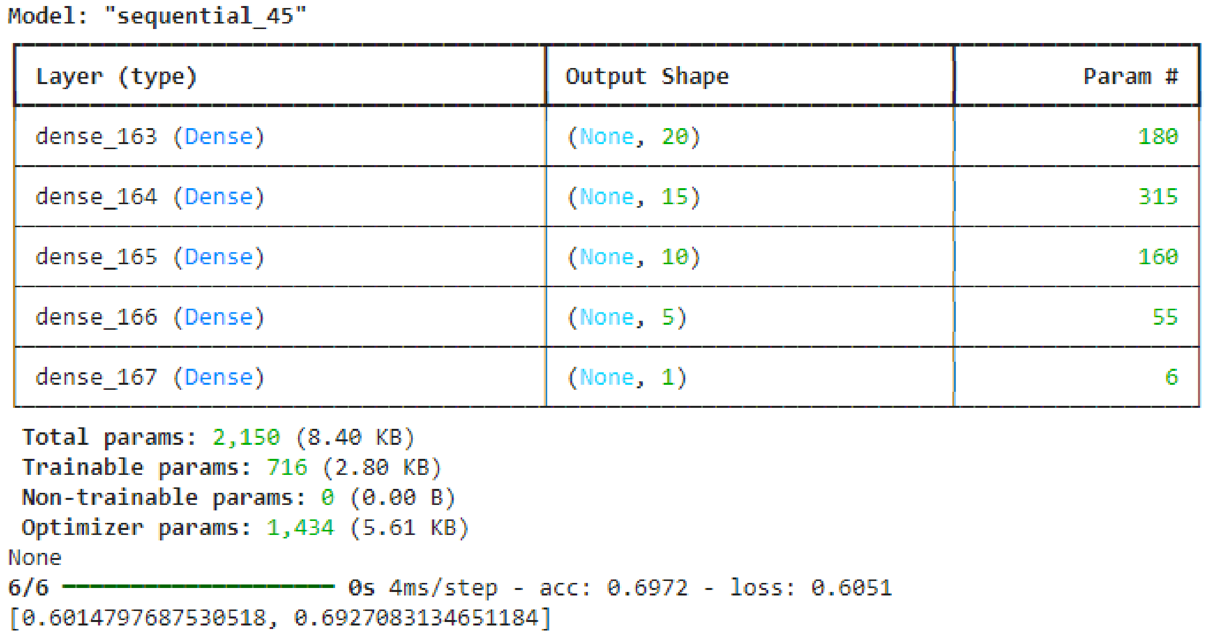
Original Output:



```
Model: "sequential_42"
┏━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━┓
┃ Layer (type)                   ┃ Output Shape           ┃       Param # ┃
┡━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━┩
│ dense_155 (Dense)              │ (None, 20)             │           180 │
├────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_156 (Dense)              │ (None, 1)              │            21 │
└────────────────────────────────┴────────────────────────┴───────────────┘
 Total params: 605 (2.37 KB)
 Trainable params: 201 (804.00 B)
 Non-trainable params: 0 (0.00 B)
 Optimizer params: 404 (1.58 KB)
None
6/6 ━━━━━━━━━━━━━━━━━━━━ 0s 4ms/step - acc: 0.7335 - loss: 0.7068
[0.6483923196792603, 0.7291666865348816]
```



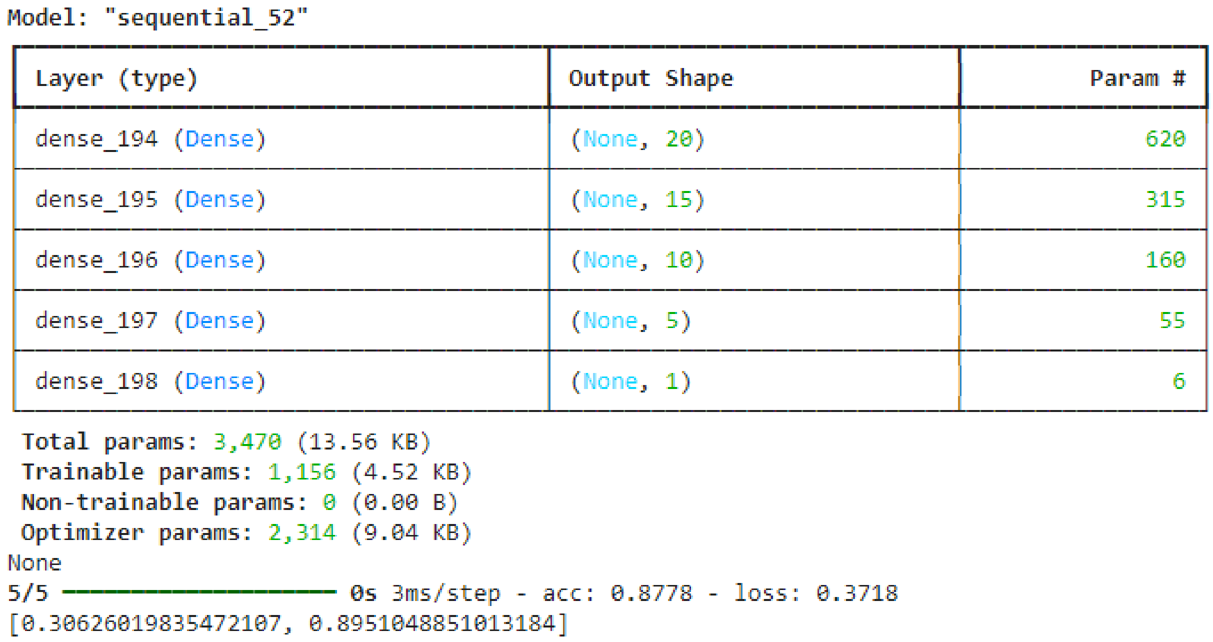
```
Model: "sequential_44"
┏━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━┓
┃ Layer (type)                   ┃ Output Shape           ┃       Param # ┃
┡━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━┩
│ dense_160 (Dense)              │ (None, 20)             │           180 │
├────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_161 (Dense)              │ (None, 15)             │           315 │
├────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_162 (Dense)              │ (None, 1)              │            16 │
└────────────────────────────────┴────────────────────────┴───────────────┘
 Total params: 1,535 (6.00 KB)
 Trainable params: 511 (2.00 KB)
 Non-trainable params: 0 (0.00 B)
 Optimizer params: 1,024 (4.00 KB)
None
6/6 ━━━━━━━━━━━━━━━━━━━━ 0s 2ms/step - acc: 0.6800 - loss: 0.5796
[0.6075140833854675, 0.6770833134651184]
```



```
Model: "sequential_45"
┏━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━┓
┃ Layer (type)                   ┃ Output Shape           ┃       Param # ┃
┡━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━┩
│ dense_163 (Dense)              │ (None, 20)             │           180 │
├────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_164 (Dense)              │ (None, 15)             │           315 │
├────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_165 (Dense)              │ (None, 10)             │           160 │
├────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_166 (Dense)              │ (None, 5)              │            55 │
├────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_167 (Dense)              │ (None, 1)              │             6 │
└────────────────────────────────┴────────────────────────┴───────────────┘
 Total params: 2,150 (8.40 KB)
 Trainable params: 716 (2.80 KB)
 Non-trainable params: 0 (0.00 B)
 Optimizer params: 1,434 (5.61 KB)
None
6/6 ━━━━━━━━━━━━━━━━━━━━ 0s 4ms/step - acc: 0.6972 - loss: 0.6051
[0.6014797687530518, 0.6927083134651184]
```

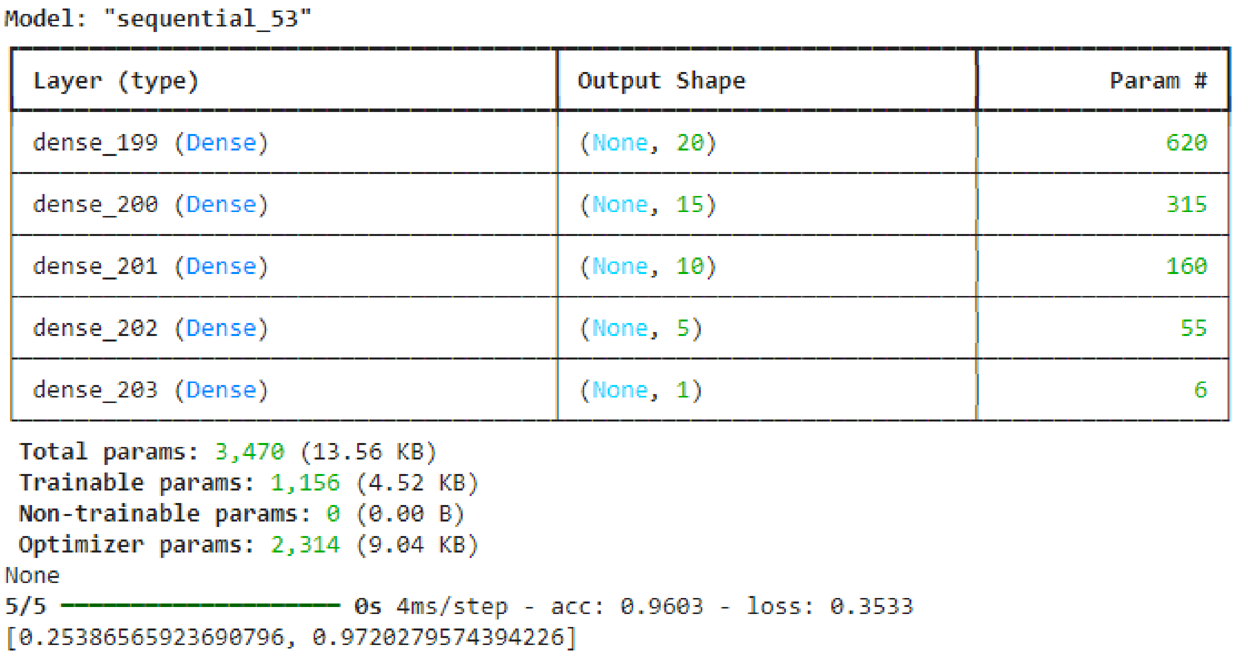
As I add more layers, it seems like the accuracy seems to be slowly increasing after initially decreasing

Next I tried the new dataset, and got this output after making some changes so that M/B would be 1 and 0. I kept getting NaN for loss and figured out that there was a column that contained only nulls so I dropped that column and got this as the output:



```
Model: "sequential_52"
┏━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━━━┓
┃ Layer (type)                         ┃ Output Shape                 ┃         Param # ┃
┡━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━━━┩
│ dense_194 (Dense)                    │ (None, 20)                   │             620 │
├──────────────────────────────────────┼──────────────────────────────┼─────────────────┤
│ dense_195 (Dense)                    │ (None, 15)                   │             315 │
├──────────────────────────────────────┼──────────────────────────────┼─────────────────┤
│ dense_196 (Dense)                    │ (None, 10)                   │             160 │
├──────────────────────────────────────┼──────────────────────────────┼─────────────────┤
│ dense_197 (Dense)                    │ (None, 5)                    │              55 │
├──────────────────────────────────────┼──────────────────────────────┼─────────────────┤
│ dense_198 (Dense)                    │ (None, 1)                    │               6 │
└──────────────────────────────────────┴──────────────────────────────┴─────────────────┘
 Total params: 3,470 (13.56 KB)
 Trainable params: 1,156 (4.52 KB)
 Non-trainable params: 0 (0.00 B)
 Optimizer params: 2,314 (9.04 KB)
None
5/5 ━━━━━━━━━━━━━━━━━━━━ 0s 3ms/step - acc: 0.8778 - loss: 0.3718
[0.30626019835472107, 0.8951048851013184]
```

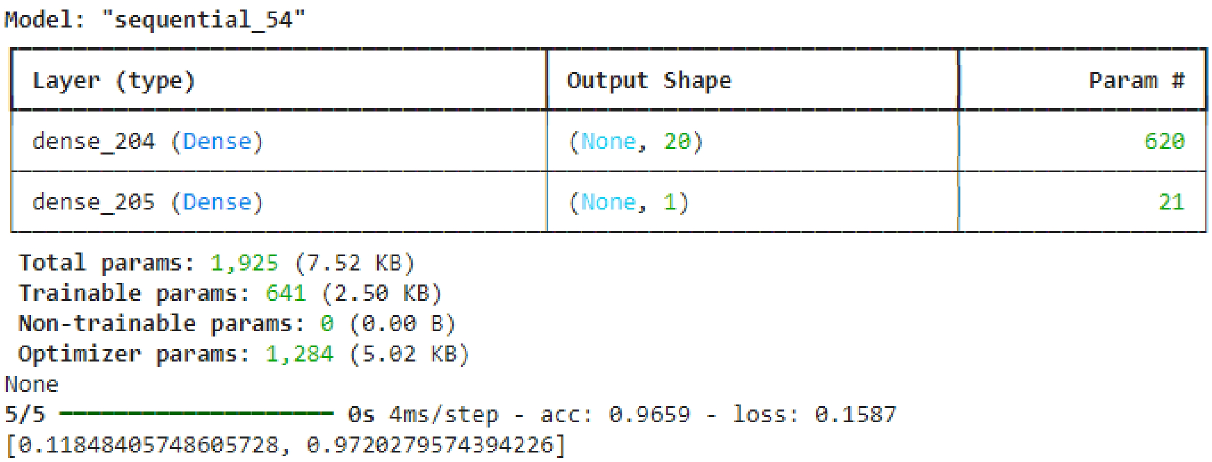
Then after this I implemented the normalization changes and got this:



```
Model: "sequential_53"
┏━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━┓
┃ Layer (type)                    ┃ Output Shape           ┃       Param # ┃
┡━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━┩
│ dense_199 (Dense)               │ (None, 20)             │           620 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_200 (Dense)               │ (None, 15)             │           315 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_201 (Dense)               │ (None, 10)             │           160 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_202 (Dense)               │ (None, 5)              │            55 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_203 (Dense)               │ (None, 1)              │             6 │
└─────────────────────────────────┴────────────────────────┴───────────────┘
 Total params: 3,470 (13.56 KB)
 Trainable params: 1,156 (4.52 KB)
 Non-trainable params: 0 (0.00 B)
 Optimizer params: 2,314 (9.04 KB)
None
5/5 ━━━━━━━━━━━━━━━━━━━━ 0s 4ms/step - acc: 0.9603 - loss: 0.3533
[0.2538656592369076, 0.9720279574394226]
```

This seems to be pretty good, I will see if I can improve upon it further.

After removing the hidden layers I was able to get this:



```
Model: "sequential_54"
┏━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━━━━━━━━━━┳━━━━━━━━━━━━━━━┓
┃ Layer (type)                    ┃ Output Shape           ┃       Param # ┃
┡━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━━━━━━━━━━╇━━━━━━━━━━━━━━━┩
│ dense_204 (Dense)               │ (None, 20)             │           620 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_205 (Dense)               │ (None, 1)              │            21 │
└─────────────────────────────────┴────────────────────────┴───────────────┘
 Total params: 1,925 (7.52 KB)
 Trainable params: 641 (2.50 KB)
 Non-trainable params: 0 (0.00 B)
 Optimizer params: 1,284 (5.02 KB)
None
5/5 ━━━━━━━━━━━━━━━━━━━━ 0s 4ms/step - acc: 0.9659 - loss: 0.1587
[0.11848405748605728, 0.9720279574394226]
```

This one was able to reduce the loss by a large amount while keeping the accuracy the same.

Video Link: https://youtu.be/yQglnwvgx7c