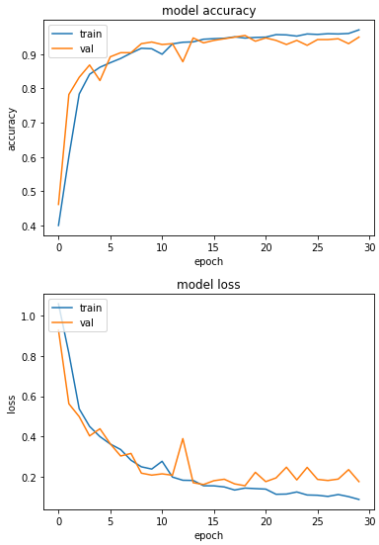
```
Epoch 1/30
136/136 [==============================] - 67s 495ms/step - loss: 1.0581 - accuracy: 0.4003 - val_loss: 0.9271 - val_accuracy: 0.4617

Epoch 00001: val_accuracy improved from -inf to 0.46172, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 2/30
136/136 [==============================] - 64s 468ms/step - loss: 0.8141 - accuracy: 0.6009 - val_loss: 0.5626 - val_accuracy: 0.7823

Epoch 00002: val_accuracy improved from 0.46172 to 0.78230, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 3/30
136/136 [==============================] - 64s 472ms/step - loss: 0.5334 - accuracy: 0.7838 - val_loss: 0.4989 - val_accuracy: 0.8325

Epoch 00003: val_accuracy improved from 0.78230 to 0.83254, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 4/30
136/136 [==============================] - 63s 467ms/step - loss: 0.4476 - accuracy: 0.8413 - val_loss: 0.4035 - val_accuracy: 0.8684

Epoch 00004: val_accuracy improved from 0.83254 to 0.86842, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 5/30
136/136 [==============================] - 64s 471ms/step - loss: 0.4021 - accuracy: 0.8618 - val_loss: 0.4389 - val_accuracy: 0.8230

Epoch 00005: val_accuracy did not improve from 0.86842
Epoch 6/30
136/136 [==============================] - 64s 467ms/step - loss: 0.3598 - accuracy: 0.8751 - val_loss: 0.3640 - val_accuracy: 0.8923

Epoch 00006: val_accuracy improved from 0.86842 to 0.89234, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 7/30
136/136 [==============================] - 64s 470ms/step - loss: 0.3491 - accuracy: 0.8875 - val_loss: 0.3041 - val_accuracy: 0.9043

Epoch 00007: val_accuracy improved from 0.89234 to 0.90431, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 8/30
136/136 [==============================] - 64s 471ms/step - loss: 0.2818 - accuracy: 0.9031 - val_loss: 0.3168 - val_accuracy: 0.9043

Epoch 00008: val_accuracy did not improve from 0.90431
Epoch 9/30
136/136 [==============================] - 63s 464ms/step - loss: 0.2470 - accuracy: 0.9172 - val_loss: 0.2191 - val_accuracy: 0.9306

Epoch 00009: val_accuracy improved from 0.90431 to 0.93062, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 10/30
136/136 [==============================] - 64s 471ms/step - loss: 0.2378 - accuracy: 0.9158 - val_loss: 0.2094 - val_accuracy: 0.9354

Epoch 00010: val_accuracy improved from 0.93062 to 0.93541, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 11/30
136/136 [==============================] - 63s 465ms/step - loss: 0.2784 - accuracy: 0.8998 - val_loss: 0.2157 - val_accuracy: 0.9282

Epoch 00011: val_accuracy did not improve from 0.93541
Epoch 12/30
136/136 [==============================] - 63s 467ms/step - loss: 0.1971 - accuracy: 0.9301 - val_loss: 0.2088 - val_accuracy: 0.9306

Epoch 00012: val_accuracy did not improve from 0.93541
Epoch 13/30
136/136 [==============================] - 63s 466ms/step - loss: 0.1824 - accuracy: 0.9348 - val_loss: 0.3902 - val_accuracy: 0.8780

Epoch 00013: val_accuracy did not improve from 0.93541
Epoch 14/30
136/136 [==============================] - 64s 469ms/step - loss: 0.1818 - accuracy: 0.9359 - val_loss: 0.1718 - val_accuracy: 0.9474

Epoch 00014: val_accuracy improved from 0.93541 to 0.94737, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 15/30
136/136 [==============================] - 64s 467ms/step - loss: 0.1555 - accuracy: 0.9436 - val_loss: 0.1629 - val_accuracy: 0.9330

Epoch 00015: val_accuracy did not improve from 0.94737
Epoch 16/30
136/136 [==============================] - 63s 465ms/step - loss: 0.1547 - accuracy: 0.9452 - val_loss: 0.1818 - val_accuracy: 0.9402

Epoch 00016: val_accuracy did not improve from 0.94737
Epoch 17/30
136/136 [==============================] - 63s 466ms/step - loss: 0.1496 - accuracy: 0.9464 - val_loss: 0.1891 - val_accuracy: 0.9450

Epoch 00017: val_accuracy did not improve from 0.94737
Epoch 18/30
136/136 [==============================] - 63s 466ms/step - loss: 0.1340 - accuracy: 0.9506 - val_loss: 0.1660 - val_accuracy: 0.9498

Epoch 00018: val_accuracy improved from 0.94737 to 0.94976, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 19/30
136/136 [==============================] - 63s 461ms/step - loss: 0.1436 - accuracy: 0.9470 - val_loss: 0.1568 - val_accuracy: 0.9545

Epoch 00019: val_accuracy improved from 0.94976 to 0.95455, saving model to /content/drive/My Drive/COVID/Vanshika/Models/squeezeNet_lr0005_ep30.h5
Epoch 20/30
136/136 [==============================] - 64s 468ms/step - loss: 0.1441 - accuracy: 0.9489 - val_loss: 0.2232 - val_accuracy: 0.9378

Epoch 00020: val_accuracy did not improve from 0.95455
Epoch 21/30
136/136 [==============================] - 63s 466ms/step - loss: 0.1396 - accuracy: 0.9497 - val_loss: 0.1771 - val_accuracy: 0.9474

Epoch 00021: val_accuracy did not improve from 0.95455
Epoch 22/30
136/136 [==============================] - 63s 463ms/step - loss: 0.1122 - accuracy: 0.9571 - val_loss: 0.1956 - val_accuracy: 0.9402

Epoch 00022: val_accuracy did not improve from 0.95455
Epoch 23/30
136/136 [==============================] - 64s 470ms/step - loss: 0.1148 - accuracy: 0.9563 - val_loss: 0.2485 - val_accuracy: 0.9282

Epoch 00023: val_accuracy did not improve from 0.95455
Epoch 24/30
136/136 [==============================] - 64s 468ms/step - loss: 0.1252 - accuracy: 0.9527 - val_loss: 0.1856 - val_accuracy: 0.9402

Epoch 00024: val_accuracy did not improve from 0.95455
Epoch 25/30
136/136 [==============================] - 64s 467ms/step - loss: 0.1106 - accuracy: 0.9590 - val_loss: 0.2476 - val_accuracy: 0.9258

Epoch 00025: val_accuracy did not improve from 0.95455
Epoch 26/30
136/136 [==============================] - 63s 465ms/step - loss: 0.1085 - accuracy: 0.9576 - val_loss: 0.1884 - val_accuracy: 0.9426

Epoch 00026: val_accuracy did not improve from 0.95455
Epoch 27/30
136/136 [==============================] - 63s 467ms/step - loss: 0.1026 - accuracy: 0.9597 - val_loss: 0.1828 - val_accuracy: 0.9426

Epoch 00027: val_accuracy did not improve from 0.95455
Epoch 28/30
136/136 [==============================] - 63s 464ms/step - loss: 0.1127 - accuracy: 0.9590 - val_loss: 0.1898 - val_accuracy: 0.9450
```

```
Epoch 00028: val_accuracy did not improve from 0.95455
Epoch 29/30
136/136 [==============================] - 63s 465ms/step - loss: 0.1018 - accuracy: 0.9604 - val_loss: 0.2366 - val_accuracy: 0.9306

Epoch 00029: val_accuracy did not improve from 0.95455
Epoch 30/30
136/136 [==============================] - 64s 468ms/step - loss: 0.0878 - accuracy: 0.9709 - val_loss: 0.1772 - val_accuracy: 0.9498

Epoch 00030: val_accuracy did not improve from 0.95455
dict_keys(['val_loss', 'val_accuracy', 'loss', 'accuracy'])
```



```
                  precision    recall  f1-score   support

       COVID-19       0.94      0.97      0.95        31
         Normal       0.94      0.97      0.95       193
Viral Pneumonia       0.97      0.94      0.96       194

       accuracy                           0.95       418
      macro avg       0.95      0.96      0.95       418
   weighted avg       0.96      0.95      0.95       418

Confusion Matrix
[[ 30   1   0]
 [  1 187   5]
 [  1  11 182]]
```