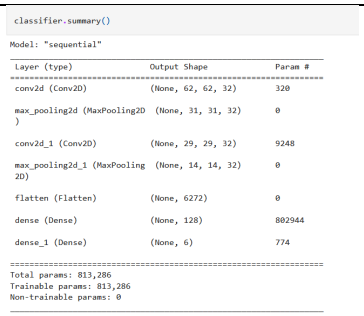
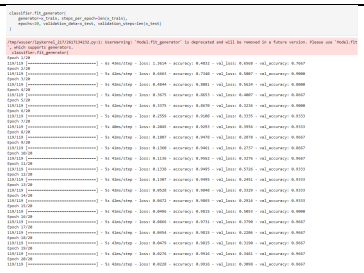
Project Development Phase
Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID53035
Project Name	A Gesture-based Tool for Sterile Browsing of Radiology Images
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot
1.	Model Summary	conv2d (Conv2D) - 320 max_pooling2d (MaxPooling2D) – 0 conv2d_1 (Conv2D) – 9248 max_pooling2d_1 (MaxPooling2D) – 0 flatten (Flatten) – 0 dense (Dense) - 802944 dense_1 (Dense) – 774 ========== Total params: 813,286 Trainable params: 813,286 Non-trainable params: 0	
2.	Accuracy	Training Accuracy - 99.16% Validation Accuracy – 96.67%	
3.	Confidence Score (Only Yolo Projects)	Class Detected - Confidence Score -	NA

Screenshots:

1. Model Summary:

```
classifier.summary()
```

```
Model: "sequential"
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 Layer (type)                Output Shape              Param #
=================================================================
 conv2d (Conv2D)             (None, 62, 62, 32)        320

 max_pooling2d (MaxPooling2D  (None, 31, 31, 32)       0
 )

 conv2d_1 (Conv2D)           (None, 29, 29, 32)        9248

 max_pooling2d_1 (MaxPooling  (None, 14, 14, 32)       0
 2D)

 flatten (Flatten)           (None, 6272)              0

 dense (Dense)               (None, 128)               802944

 dense_1 (Dense)             (None, 6)                 774

=================================================================
Total params: 813,286
Trainable params: 813,286
Non-trainable params: 0
_________________________________________________________________
```

2. Accuracy:

```
classifier.fit_generator(
    generator=x_train, steps_per_epoch=len(x_train),
    epochs=20, validation_data=x_test, validation_steps=len(x_test)
)
```

```
/tmp/wsuser/ipykernel_217/2617134232.py:1: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit
`, which supports generators.
  classifier.fit_generator(
Epoch 1/20
119/119 [==============================] - 6s 43ms/step - loss: 1.3614 - accuracy: 0.4832 - val_loss: 0.6568 - val_accuracy: 0.7667
Epoch 2/20
119/119 [==============================] - 5s 42ms/step - loss: 0.6663 - accuracy: 0.7340 - val_loss: 0.5007 - val_accuracy: 0.9000
Epoch 3/20
119/119 [==============================] - 5s 42ms/step - loss: 0.4844 - accuracy: 0.8081 - val_loss: 0.5624 - val_accuracy: 0.8000
Epoch 4/20
119/119 [==============================] - 5s 41ms/step - loss: 0.3675 - accuracy: 0.8653 - val_loss: 0.4007 - val_accuracy: 0.8667
Epoch 5/20
119/119 [==============================] - 5s 42ms/step - loss: 0.3375 - accuracy: 0.8670 - val_loss: 0.3236 - val_accuracy: 0.9000
Epoch 6/20
119/119 [==============================] - 5s 42ms/step - loss: 0.2559 - accuracy: 0.9108 - val_loss: 0.3335 - val_accuracy: 0.9333
Epoch 7/20
119/119 [==============================] - 5s 40ms/step - loss: 0.2045 - accuracy: 0.9293 - val_loss: 0.3956 - val_accuracy: 0.9333
Epoch 8/20
119/119 [==============================] - 5s 42ms/step - loss: 0.1807 - accuracy: 0.9478 - val_loss: 0.2878 - val_accuracy: 0.9667
Epoch 9/20
119/119 [==============================] - 5s 41ms/step - loss: 0.1360 - accuracy: 0.9461 - val_loss: 0.2737 - val_accuracy: 0.8667
Epoch 10/20
119/119 [==============================] - 5s 41ms/step - loss: 0.1136 - accuracy: 0.9562 - val_loss: 0.3276 - val_accuracy: 0.9667
Epoch 11/20
119/119 [==============================] - 5s 41ms/step - loss: 0.1338 - accuracy: 0.9495 - val_loss: 0.5726 - val_accuracy: 0.9333
Epoch 12/20
119/119 [==============================] - 5s 42ms/step - loss: 0.1307 - accuracy: 0.9495 - val_loss: 0.2451 - val_accuracy: 0.9333
Epoch 13/20
119/119 [==============================] - 5s 42ms/step - loss: 0.0528 - accuracy: 0.9848 - val_loss: 0.3329 - val_accuracy: 0.9333
Epoch 14/20
119/119 [==============================] - 5s 42ms/step - loss: 0.0472 - accuracy: 0.9865 - val_loss: 0.2916 - val_accuracy: 0.9333
Epoch 15/20
119/119 [==============================] - 5s 41ms/step - loss: 0.0496 - accuracy: 0.9815 - val_loss: 0.5053 - val_accuracy: 0.9000
Epoch 16/20
119/119 [==============================] - 5s 41ms/step - loss: 0.0866 - accuracy: 0.9731 - val_loss: 0.3790 - val_accuracy: 0.9667
Epoch 17/20
119/119 [==============================] - 5s 41ms/step - loss: 0.0454 - accuracy: 0.9815 - val_loss: 0.2206 - val_accuracy: 0.9667
Epoch 18/20
119/119 [==============================] - 5s 43ms/step - loss: 0.0479 - accuracy: 0.9815 - val_loss: 0.3190 - val_accuracy: 0.9667
Epoch 19/20
119/119 [==============================] - 5s 41ms/step - loss: 0.0276 - accuracy: 0.9916 - val_loss: 0.3461 - val_accuracy: 0.9667
Epoch 20/20
119/119 [==============================] - 5s 42ms/step - loss: 0.0228 - accuracy: 0.9916 - val_loss: 0.3098 - val_accuracy: 0.9667
```