

## Project Development Phase Model Performance Test

Date	15 November 2022
Team ID	PNT2022TMID10523
Project Name	Project - AI-powered Nutrition Analyzer for Fitness Enthusiasts
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	Total params: 712,389 Trainable params: 712,389 Non-trainable params: 0	<pre> in [20]: classifier.summary()#summary of our model  Model: "sequential_1"  Layer (type)                Output Shape              Param # ----- conv2d (Conv2D)              (None, 62, 62, 32)        896 max_pooling2d (MaxPooling2D) (None, 31, 31, 32)         0 conv2d_1 (Conv2D)             (None, 29, 29, 32)         9248 conv2d_2 (Conv2D)             (None, 27, 27, 32)         9248 max_pooling2d_1 (MaxPooling2D) (None, 13, 13, 32)         0 flatten (Flatten)            (None, 5408)               0 dense (Dense)                (None, 128)               692352 dense_1 (Dense)              (None, 5)                 645 ----- Total params: 712,389 Trainable params: 712,389 Non-trainable params: 0 </pre>
2.	Accuracy	Training Accuracy – 96.75  Validation Accuracy – 97.85	<pre> In [21]: model.fit_generator(generator_data,                              epochs=50,                              validation_data=(validation_data_test,   validation_data_val),                              verbose=1) Out[21]: 50/50 [100%] 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 1/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 2/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 3/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 4/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 5/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 6/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 7/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 8/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 9/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 10/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 11/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 12/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 13/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 14/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 15/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 16/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 17/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 18/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 19/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 20/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 21/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 22/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 23/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 24/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 25/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 26/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 27/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 28/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 29/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 30/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 31/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 32/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 33/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 34/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 35/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 36/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 37/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 38/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 39/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 40/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 41/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 42/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 43/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 44/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 45/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 46/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 47/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 48/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 49/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch Epoch 50/50: 10s 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch 10.0s/epoch </pre>

## Model Summary

```
In [20]: classifier.summary()#summary of our model
```

Model: "sequential\_1"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 62, 62, 32)	896
max_pooling2d (MaxPooling2D)	(None, 31, 31, 32)	0
conv2d_1 (Conv2D)	(None, 29, 29, 32)	9248
conv2d_2 (Conv2D)	(None, 27, 27, 32)	9248
max_pooling2d_1 (MaxPooling2D)	(None, 13, 13, 32)	0
flatten (Flatten)	(None, 5408)	0
dense (Dense)	(None, 128)	692352
dense_1 (Dense)	(None, 5)	645

=====  
Total params: 712,389  
Trainable params: 712,389  
Non-trainable params: 0  
=====

## Accuracy

```
In [38]: model.fit_generator(generator=x_train,
                             steps_per_epoch = len(x_train),
                             epochs=20,
                             validation_data=x_test,
                             validation_steps = len(x_test))#no. of images in test set
```

/usr/local/lib/python3.7/dist-packages/ipykernel\_launcher.py:5: UserWarning: 'Model.fit\_generator' is deprecated and will be removed in a future version. Please use 'Model.fit', which supports generators.  
"""

Epoch 1/20  
826/826 [=====] - 1063s 1s/step - loss: 0.6306 - accuracy: 0.2536 - val\_loss: 0.5216 - val\_accuracy: 0.1761  
Epoch 2/20  
826/826 [=====] - 67s 81ms/step - loss: 0.4367 - accuracy: 0.2386 - val\_loss: 0.3931 - val\_accuracy: 0.1911  
Epoch 3/20  
826/826 [=====] - 70s 85ms/step - loss: 0.3902 - accuracy: 0.2328 - val\_loss: 0.3320 - val\_accuracy: 0.2868  
Epoch 4/20  
826/826 [=====] - 65s 79ms/step - loss: 0.3804 - accuracy: 0.2343 - val\_loss: 0.2869 - val\_accuracy: 0.2393  
Epoch 5/20  
826/826 [=====] - 66s 80ms/step - loss: 0.3530 - accuracy: 0.2418 - val\_loss: 0.2985 - val\_accuracy: 0.2597  
Epoch 6/20  
826/826 [=====] - 67s 81ms/step - loss: 0.3254 - accuracy: 0.2403 - val\_loss: 0.2515 - val\_accuracy: 0.2355  
Epoch 7/20  
826/826 [=====] - 66s 80ms/step - loss: 0.3149 - accuracy: 0.2347 - val\_loss: 0.2366 - val\_accuracy: 0.2396  
Epoch 8/20  
826/826 [=====] - 67s 82ms/step - loss: 0.2902 - accuracy: 0.2396 - val\_loss: 0.2417 - val\_accuracy: 0.2275  
Epoch 9/20  
826/826 [=====] - 65s 79ms/step - loss: 0.2879 - accuracy: 0.2372 - val\_loss: 0.2182 - val\_accuracy: 0.2410  
Epoch 10/20  
826/826 [=====] - 67s 81ms/step - loss: 0.2621 - accuracy: 0.2403 - val\_loss: 0.2831 - val\_accuracy: 0.2570  
Epoch 11/20  
826/826 [=====] - 67s 82ms/step - loss: 0.2506 - accuracy: 0.2389 - val\_loss: 0.1723 - val\_accuracy: 0.2214  
Epoch 12/20  
826/826 [=====] - 70s 85ms/step - loss: 0.2379 - accuracy: 0.2379 - val\_loss: 0.1508 - val\_accuracy: 0.2255  
Epoch 13/20  
826/826 [=====] - 70s 85ms/step - loss: 0.2115 - accuracy: 0.2384 - val\_loss: 0.1403 - val\_accuracy: 0.2299  
Epoch 14/20  
826/826 [=====] - 69s 83ms/step - loss: 0.2132 - accuracy: 0.2369 - val\_loss: 0.1477 - val\_accuracy: 0.2524  
Epoch 15/20  
826/826 [=====] - 70s 85ms/step - loss: 0.1858 - accuracy: 0.2410 - val\_loss: 0.1178 - val\_accuracy: 0.2464  
Epoch 16/20  
826/826 [=====] - 70s 85ms/step - loss: 0.1743 - accuracy: 0.2374 - val\_loss: 0.1150 - val\_accuracy: 0.2488  
Epoch 17/20  
826/826 [=====] - 70s 85ms/step - loss: 0.1686 - accuracy: 0.2376 - val\_loss: 0.0846 - val\_accuracy: 0.2403