Project Development Phase
Model Performance Test

Date	13 November 2022
Team ID	PNT2022TMID21963
Project Name	Fertilizers Recommendation System For Disease Prediction
Maximum Marks	10 Marks

Model Performance Testing: Fruit Leaf Model:

S.No.	Parameter	Values	Screenshot

1.	Fruit Model Summary	Total params - 1,06,786
		Trainable Params 1,06,786
		Non Trainable Params - 0
			`model.summary()`
			`Model: "model"`
			`Layer (type) Output Shape Param #`
			`input_1 (InputLayer) [(None, 100, 100, 3)] 0`
			`conv2d (Conv2D) (None, 100, 100, 64) 4864`
			`max_pooling2d (MaxPooling2D) (None, 50, 50, 64) 0`
			`conv2d_1 (Conv2D) (None, 50, 50, 64) 36928`
			`max_pooling2d_1 (MaxPooling2D) (None, 25, 25, 64) 0`
			`conv2d_2 (Conv2D) (None, 25, 25, 96) 55392`
			`max_pooling2d_2 (MaxPooling2D) (None, 12, 12, 96) 0`
			`conv2d_3 (Conv2D) (None, 12, 12, 96) 83040`
			`max_pooling2d_3 (MaxPooling2D) (None, 6, 6, 96) 0`
			`flatten (Flatten) (None, 3456) 0`
			`dense (Dense) (None, 256) 884992`
			`dense_2 (Dense) (None, 10) 2570`
			`Total params: 1,067,786`
			`Trainable params: 1,067,786`
			`Non-trainable params: 0`

2.	Accuracy	Training Accuracy - 0.99
		
		Validation Accuracy - 0.97
			MODEL EVALUATION
			`[60] print("Training Accuracy : ", model.evaluate(features, labels, verbose = 1))`
			`print("Validataion Accuracy : ", model.evaluate(tfeatures, tlabels, verbose = 1))`
			`169/169 [==========] - 2s 9ms/step - loss: 0.0225 - accuracy: 0.9924`
			`Training Accuracy : [0.022537069395184517, 0.9923848509788513]`
			`53/53 [==========] - 0s 9ms/step - loss: 0.0735 - accuracy: 0.9769`
			`Validataion Accuracy : [0.07351095229387283, 0.9768683314323425]`

Vegetable Leaf Model

Fruit Leaf Model:

S.No.	Parameter	Values	Screenshot

3.	Fruit Model Summary	Total params - 1,06,786
		Trainable Params 1,06,786
		Non Trainable Params - 0
			`model.summary()`
			`Model: "model"`
			`_____`
			`Layer (type) Output Shape Param #`
			`=====`
			`input_1 (InputLayer) [(None, 100, 100, 3)] 0`
			`conv2d (Conv2D) (None, 100, 100, 64) 4864`
			`max_pooling2d (MaxPooling2D (None, 50, 50, 64) 0`
			`)`
			`conv2d_1 (Conv2D) (None, 50, 50, 64) 36928`
			`max_pooling2d_1 (MaxPooling (None, 25, 25, 64) 0`
			`2D)`
			`conv2d_2 (Conv2D) (None, 25, 25, 96) 55392`
			`max_pooling2d_2 (MaxPooling (None, 12, 12, 96) 0`
			`2D)`
			`conv2d_3 (Conv2D) (None, 12, 12, 96) 83040`
			`max_pooling2d_3 (MaxPooling (None, 6, 6, 96) 0`
			`2D)`
			`flatten (Flatten) (None, 3456) 0`
			`dense (Dense) (None, 256) 884992`
			`dense_2 (Dense) (None, 10) 2570`
			`=====`
			`Total params: 1,067,786`
			`Trainable params: 1,067,786`
			`Non-trainable params: 0`
			`_____`

4.	Accuracy	Training Accuracy - 0.996
		
		Validation Accuracy 0.997
			EVALUATE THE MODEL
			`print('Training Accuracy : ', model.evaluate(features,labels, verbose=1))`
			`print('Validation Accuracy : ', model.evaluate(tfeatures, tlabels, verbose = 1))`
			`356/356 [==========] - 4s 10ms/step - loss: 0.0145 - accuracy: 0.9967`
			`Training Accuracy : [0.014450710266828537, 0.9966625571250916]`
			`107/107 [==========] - 1s 10ms/step - loss: 0.0152 - accuracy: 0.9971`
			`Validation Accuracy : [0.015190709382295609, 0.9970725774765015]`