

# V.S.B. ENGINEERING COLLEGE, KARUR

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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### TRAIN THE MODEL ON IBM

Date	18 November 2022
Team ID	PNT2022TMID33299
Project Name	Fertilizers Recommendation System for Disease Prediction

### TRAIN THE MODEL ON IBM:

### TRAINING FRUIT DATA:

The screenshot shows a Google Colab notebook titled 'FruitData.ipynb'. The notebook is open to a cell containing the following code:

```
model.fit(x_train, steps_per_epoch=len(x_train), validation_data=x_test, validation_steps=len(x_test), epochs=10)
```

The output of the code is displayed below the cell, showing the training progress for 10 epochs. The output includes the following information for each epoch:

- Epoch 1/10: 225/225 [=====] - 170s 757ms/step - loss: 0.1980 - accuracy: 0.9268 - val\_loss: 0.1298 - val\_accuracy: 0.9496
- Epoch 2/10: 225/225 [=====] - 180s 799ms/step - loss: 0.1630 - accuracy: 0.9441 - val\_loss: 0.1495 - val\_accuracy: 0.9490
- Epoch 3/10: 225/225 [=====] - 173s 769ms/step - loss: 0.1359 - accuracy: 0.9541 - val\_loss: 0.1367 - val\_accuracy: 0.9520
- Epoch 4/10: 225/225 [=====] - 169s 748ms/step - loss: 0.1127 - accuracy: 0.9580 - val\_loss: 0.1272 - val\_accuracy: 0.9573
- Epoch 5/10: 225/225 [=====] - 173s 770ms/step - loss: 0.1151 - accuracy: 0.9617 - val\_loss: 0.1297 - val\_accuracy: 0.9638
- Epoch 6/10: 225/225 [=====] - 173s 768ms/step - loss: 0.0941 - accuracy: 0.9697 - val\_loss: 0.2062 - val\_accuracy: 0.9152
- Epoch 7/10: 225/225 [=====] - 174s 773ms/step - loss: 0.1159 - accuracy: 0.9593 - val\_loss: 0.1312 - val\_accuracy: 0.9603
- Epoch 8/10: 225/225 [=====] - 175s 775ms/step - loss: 0.1019 - accuracy: 0.9651 - val\_loss: 0.1764 - val\_accuracy: 0.9377
- Epoch 9/10: 225/225 [=====] - 176s 781ms/step - loss: 0.0832 - accuracy: 0.9734 - val\_loss: 0.1255 - val\_accuracy: 0.9591
- Epoch 10/10: 225/225 [=====] - 172s 765ms/step - loss: 0.0716 - accuracy: 0.9770 - val\_loss: 0.1672 - val\_accuracy: 0.9531

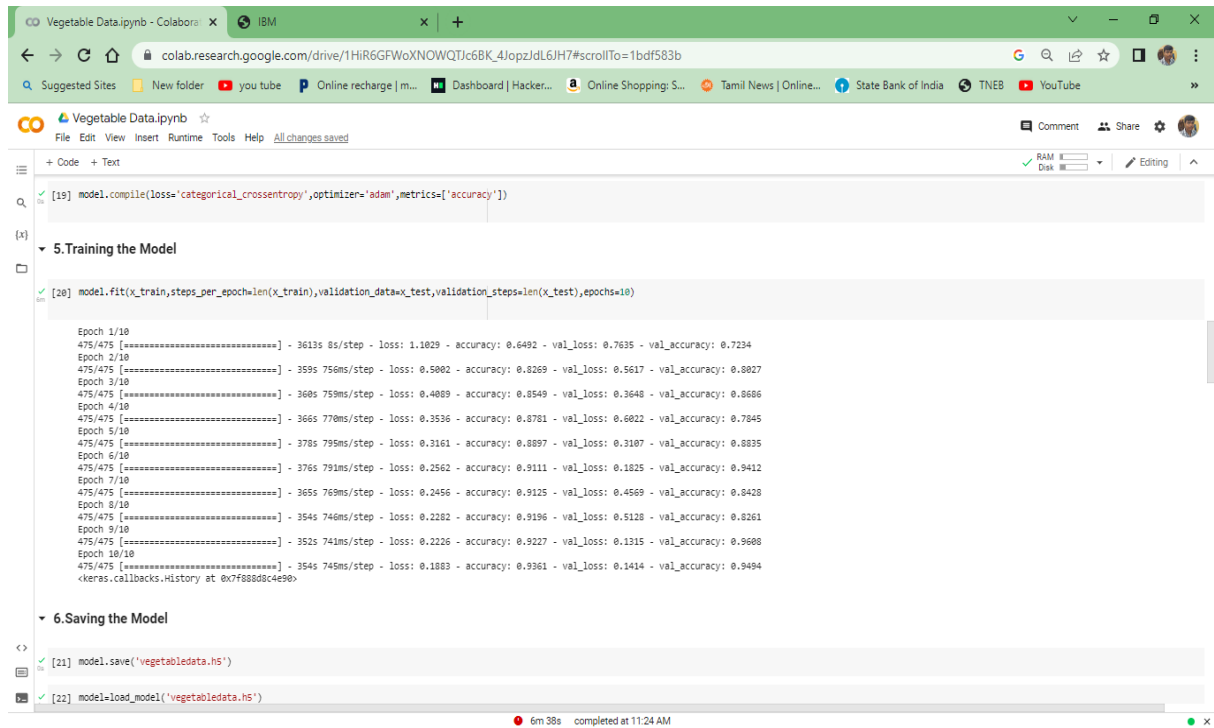
The notebook also shows the following code cells:

```
model.save('fruitdata.h5')
```

```
model=load_model('fruitdata.h5')
```

The notebook is titled 'FruitData.ipynb' and has a star icon next to it. The notebook is open to a cell containing the following code:

# TRAINING VEGETABLES DATA:



The screenshot displays a Google Colab notebook interface. The browser address bar shows the URL: `colab.research.google.com/drive/1HiR6GFwoXNOWQTJc6BK_4JopzJdL6JH7#scrollTo=1bdf583b`. The notebook title is "Vegetable Data.ipynb".

The code cells are as follows:

```
[19] model.compile(loss='categorical_crossentropy', optimizer='adam', metrics=['accuracy'])
```

**5. Training the Model**

```
[20] model.fit(x_train, steps_per_epoch=len(x_train), validation_data=x_test, validation_steps=len(x_test), epochs=10)
```

The output of the training process shows the following metrics for each epoch:

Epoch	loss	accuracy	val_loss	val_accuracy
1/10	1.1829	0.6492	0.7635	0.7234
2/10	0.5082	0.8269	0.5617	0.8027
3/10	0.4089	0.8549	0.3648	0.8686
4/10	0.3536	0.8781	0.6822	0.7845
5/10	0.3161	0.8897	0.3107	0.8835
6/10	0.2562	0.9111	0.1825	0.9412
7/10	0.2456	0.9125	0.4569	0.8428
8/10	0.2282	0.9196	0.5128	0.8261
9/10	0.2226	0.9227	0.1315	0.9608
10/10	0.1883	0.9361	0.1414	0.9494

**6. Saving the Model**

```
[21] model.save('vegetabledata.h5')
```

```
[22] model=load_model('vegetabledata.h5')
```

The notebook status bar at the bottom indicates "6m 38s completed at 11:24 AM".