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TRAIN THE MODEL ON IBM

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Team ID	PNT2022TMID33383
Project Name	Fertilizers Recommendation System for Disease Prediction

TRAIN THE MODEL ON IBM:

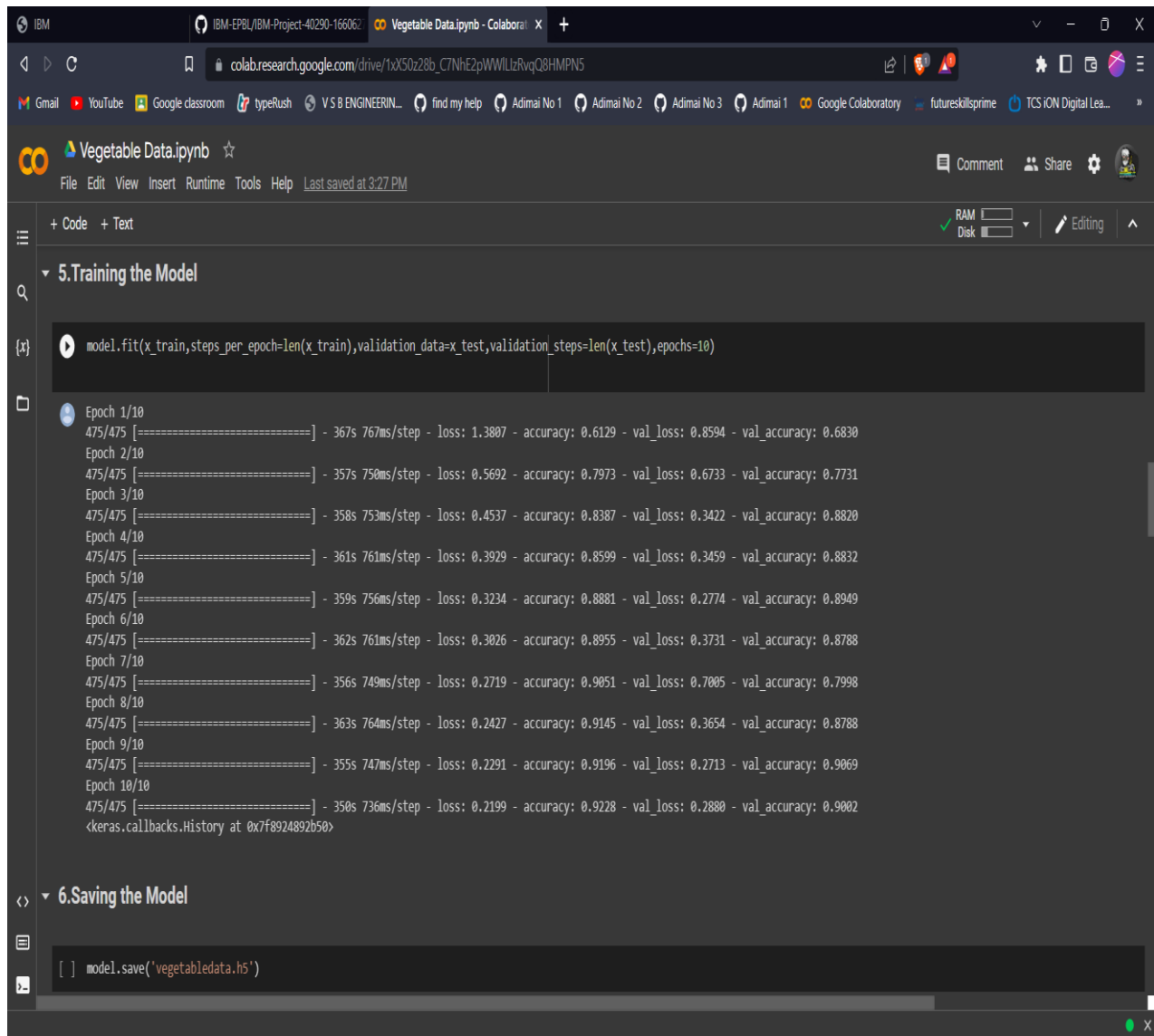
TRAINING FRUIT DATA:

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

Epoch 1/10
225/225 [=====] - 172s 764ms/step - loss: 0.2448 - accuracy: 0.9172 - val_loss: 0.2405 - val_accuracy: 0.9265
Epoch 2/10
225/225 [=====] - 169s 751ms/step - loss: 0.1923 - accuracy: 0.9372 - val_loss: 0.1990 - val_accuracy: 0.9342
Epoch 3/10
225/225 [=====] - 170s 755ms/step - loss: 0.1689 - accuracy: 0.9417 - val_loss: 0.2256 - val_accuracy: 0.9223
Epoch 4/10
225/225 [=====] - 175s 776ms/step - loss: 0.1387 - accuracy: 0.9543 - val_loss: 0.1027 - val_accuracy: 0.9638
Epoch 5/10
225/225 [=====] - 171s 762ms/step - loss: 0.1060 - accuracy: 0.9630 - val_loss: 0.1454 - val_accuracy: 0.9579
Epoch 6/10
225/225 [=====] - 172s 763ms/step - loss: 0.1124 - accuracy: 0.9614 - val_loss: 0.1907 - val_accuracy: 0.9324
Epoch 7/10
225/225 [=====] - 171s 760ms/step - loss: 0.1193 - accuracy: 0.9573 - val_loss: 0.1919 - val_accuracy: 0.9431
Epoch 8/10
225/225 [=====] - 171s 760ms/step - loss: 0.1144 - accuracy: 0.9584 - val_loss: 0.0965 - val_accuracy: 0.9668
Epoch 9/10
225/225 [=====] - 171s 758ms/step - loss: 0.1059 - accuracy: 0.9642 - val_loss: 0.1884 - val_accuracy: 0.9442
Epoch 10/10
225/225 [=====] - 172s 762ms/step - loss: 0.0756 - accuracy: 0.9727 - val_loss: 0.1998 - val_accuracy: 0.9437
<keras.callbacks.History at 0x7f13799efb10>

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

TRAINING VEGETABLES DATA:



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

Epoch 1/10
475/475 [=====] - 367s 767ms/step - loss: 1.3807 - accuracy: 0.6129 - val_loss: 0.8594 - val_accuracy: 0.6830
Epoch 2/10
475/475 [=====] - 357s 750ms/step - loss: 0.5692 - accuracy: 0.7973 - val_loss: 0.6733 - val_accuracy: 0.7731
Epoch 3/10
475/475 [=====] - 358s 753ms/step - loss: 0.4537 - accuracy: 0.8387 - val_loss: 0.3422 - val_accuracy: 0.8820
Epoch 4/10
475/475 [=====] - 361s 761ms/step - loss: 0.3929 - accuracy: 0.8599 - val_loss: 0.3459 - val_accuracy: 0.8832
Epoch 5/10
475/475 [=====] - 359s 756ms/step - loss: 0.3234 - accuracy: 0.8881 - val_loss: 0.2774 - val_accuracy: 0.8949
Epoch 6/10
475/475 [=====] - 362s 761ms/step - loss: 0.3026 - accuracy: 0.8955 - val_loss: 0.3731 - val_accuracy: 0.8788
Epoch 7/10
475/475 [=====] - 356s 749ms/step - loss: 0.2719 - accuracy: 0.9051 - val_loss: 0.7005 - val_accuracy: 0.7998
Epoch 8/10
475/475 [=====] - 363s 764ms/step - loss: 0.2427 - accuracy: 0.9145 - val_loss: 0.3654 - val_accuracy: 0.8788
Epoch 9/10
475/475 [=====] - 355s 747ms/step - loss: 0.2291 - accuracy: 0.9196 - val_loss: 0.2713 - val_accuracy: 0.9069
Epoch 10/10
475/475 [=====] - 350s 736ms/step - loss: 0.2199 - accuracy: 0.9228 - val_loss: 0.2880 - val_accuracy: 0.9002
<keras.callbacks.History at 0x7f8924892b50>

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