```
C:\Users\Hemant\anaconda3\envs\tf\python.exe "Y:\Coding\Project\Apple\Plant Disease Detection\v1.2\PlantDetectionMLModel3.py"
WARNING:tensorflow:`input_shape` is undefined or non-square, or `rows` is not in [128, 160, 192, 224]. Weights for input shape (224, 224) will be loaded as the default.
2023-12-07 11:13:29.808400: I tensorflow/core/platform/cpu_feature_guard.cc:151] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations:  AVX AVX2
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
2023-12-07 11:13:30.360833: I tensorflow/core/common_runtime/gpu/gpu_device.cc:1525] Created device /job:localhost/replica:0/task:0/device:GPU:0 with 2139 MB memory:  -> device: 0, name: NVIDIA GeForce GTX 1650, pci bus id: 0000:01:00.0, compute capability: 7.5
Found 7771 images belonging to 4 classes.
Found 1943 images belonging to 4 classes.
Epoch 1/15
2023-12-07 11:13:35.163364: I tensorflow/stream_executor/cuda/cuda_dnn.cc:368] Loaded cuDNN version 8600
2023-12-07 11:13:37.925792: W tensorflow/core/common_runtime/bfc_allocator.cc:275] Allocator (GPU_0_bfc) ran out of memory trying to allocate 2.34GiB with freed_by_count=0. The caller indicates that this is not a failure, but may mean that there could be performance gains if more memory were available.
2023-12-07 11:13:37.926496: W tensorflow/core/common_runtime/bfc_allocator.cc:275] Allocator (GPU_0_bfc) ran out of memory trying to allocate 2.34GiB with freed_by_count=0. The caller indicates that this is not a failure, but may mean that there could be performance gains if more memory were available.
  4/242 [.....] - ETA: 1:00 - loss: 1.9520 - acc: 0.2969 - f1_m: 0.2646 - precision_m: 0.4159 - recall_m: 0.20312023-12-07 11:13:39.508659: W tensorflow/core/common_runtime/bfc_allocator.cc:275] Allocator (GPU_0_bfc) ran out of memory trying to allocate 2.33GiB with freed_by_count=0. The caller indicates that this is not a failure, but may mean that there could be performance gains if more memory were available.
2023-12-07 11:13:39.508889: W tensorflow/core/common_runtime/bfc_allocator.cc:275] Allocator (GPU_0_bfc) ran out of memory trying to allocate 2.33GiB with freed_by_count=0. The caller indicates that this is not a failure, but may mean that there could be performance gains if more memory were available.
242/242 [==============================] - ETA: 0s - loss: 0.2288 - acc: 0.9094 - f1_m: 0.9071 - precision_m: 0.9218 - recall_m: 0.89722023-12-07 11:15:01.230638: W tensorflow/core/common_runtime/bfc_allocator.cc:275] Allocator (GPU_0_bfc) ran out of memory trying to allocate 2.32GiB with freed_by_count=0. The caller indicates that this is not a failure, but may mean that there could be performance gains if more memory were available.
2023-12-07 11:15:01.230872: W tensorflow/core/common_runtime/bfc_allocator.cc:275] Allocator (GPU_0_bfc) ran out of memory trying to allocate 2.32GiB with freed_by_count=0. The caller indicates that this is not a failure, but may mean that there could be performance gains if more memory were available.
242/242 [==============================] - 89s 345ms/step - loss: 0.2288 - acc: 0.9094 - f1_m: 0.9071 - precision_m: 0.9218 - recall_m: 0.8972 - val_loss: 0.0511 - val_acc:
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16 0.9820 - val_f1_m: 0.9816 - val_precision_m: 0.9826 - val_recall_m: 0.9806
17 Epoch 2/15
18 242/242 [==============================] - 77s 316ms/step - loss: 0.0904 - acc: 0.
   9678 - f1_m: 0.9680 - precision_m: 0.9688 - recall_m: 0.9672 - val_loss: 0.0958 - val_acc:
   0.9609 - val_f1_m: 0.9601 - val_precision_m: 0.9617 - val_recall_m: 0.9585
19 Epoch 3/15
20 242/242 [==============================] - 82s 337ms/step - loss: 0.0666 - acc: 0.
   9783 - f1_m: 0.9783 - precision_m: 0.9792 - recall_m: 0.9774 - val_loss: 0.0362 - val_acc:
   0.9887 - val_f1_m: 0.9887 - val_precision_m: 0.9887 - val_recall_m: 0.9887
21 Epoch 4/15
22 242/242 [==============================] - 85s 352ms/step - loss: 0.0584 - acc: 0.
   9801 - f1_m: 0.9801 - precision_m: 0.9809 - recall_m: 0.9793 - val_loss: 0.0531 - val_acc:
   0.9804 - val_f1_m: 0.9812 - val_precision_m: 0.9830 - val_recall_m: 0.9795
23 Epoch 5/15
24 242/242 [==============================] - 84s 348ms/step - loss: 0.0592 - acc: 0.
   9778 - f1_m: 0.9780 - precision_m: 0.9786 - recall_m: 0.9774 - val_loss: 0.0414 - val_acc:
   0.9846 - val_f1_m: 0.9848 - val_precision_m: 0.9856 - val_recall_m: 0.9841
25 Epoch 6/15
26 242/242 [==============================] - 85s 349ms/step - loss: 0.0465 - acc: 0.
   9828 - f1_m: 0.9831 - precision_m: 0.9839 - recall_m: 0.9823 - val_loss: 0.0497 - val_acc:
   0.9804 - val_f1_m: 0.9805 - val_precision_m: 0.9815 - val_recall_m: 0.9795
27 Epoch 7/15
28 242/242 [==============================] - 77s 319ms/step - loss: 0.0509 - acc: 0.
   9836 - f1_m: 0.9836 - precision_m: 0.9845 - recall_m: 0.9827 - val_loss: 0.0534 - val_acc:
   0.9840 - val_f1_m: 0.9836 - val_precision_m: 0.9846 - val_recall_m: 0.9826
29 Epoch 8/15
30 242/242 [==============================] - 77s 320ms/step - loss: 0.0356 - acc: 0.
   9881 - f1_m: 0.9883 - precision_m: 0.9886 - recall_m: 0.9880 - val_loss: 0.0282 - val_acc:
   0.9913 - val_f1_m: 0.9910 - val_precision_m: 0.9913 - val_recall_m: 0.9908
31 Epoch 9/15
32 242/242 [==============================] - 76s 313ms/step - loss: 0.0330 - acc: 0.
   9879 - f1_m: 0.9881 - precision_m: 0.9886 - recall_m: 0.9876 - val_loss: 0.0219 - val_acc:
   0.9907 - val_f1_m: 0.9907 - val_precision_m: 0.9918 - val_recall_m: 0.9896
33 Epoch 10/15
34 242/242 [==============================] - 76s 313ms/step - loss: 0.0470 - acc: 0.
   9853 - f1_m: 0.9845 - precision_m: 0.9856 - recall_m: 0.9835 - val_loss: 0.0315 - val_acc:
   0.9897 - val_f1_m: 0.9898 - val_precision_m: 0.9898 - val_recall_m: 0.9898
35 Epoch 11/15
36 242/242 [==============================] - 77s 316ms/step - loss: 0.0332 - acc: 0.
   9889 - f1_m: 0.9887 - precision_m: 0.9891 - recall_m: 0.9884 - val_loss: 0.0285 - val_acc:
   0.9902 - val_f1_m: 0.9900 - val_precision_m: 0.9903 - val_recall_m: 0.9898
37 Epoch 12/15
38 242/242 [==============================] - 77s 316ms/step - loss: 0.0422 - acc: 0.
   9855 - f1_m: 0.9856 - precision_m: 0.9860 - recall_m: 0.9851 - val_loss: 0.0242 - val_acc:
   0.9938 - val_f1_m: 0.9936 - val_precision_m: 0.9939 - val_recall_m: 0.9933
39 Epoch 13/15
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242/242 [==============================] - 77s 316ms/step - loss: 0.0356 - acc: 0.9875 - f1_m: 0.9877 - precision_m: 0.9883 - recall_m: 0.9871 - val_loss: 0.0303 - val_acc: 0.9913 - val_f1_m: 0.9915 - val_precision_m: 0.9923 - val_recall_m: 0.9908
Epoch 14/15
242/242 [==============================] - 79s 325ms/step - loss: 0.0360 - acc: 0.9889 - f1_m: 0.9888 - precision_m: 0.9891 - recall_m: 0.9884 - val_loss: 0.0350 - val_acc: 0.9861 - val_f1_m: 0.9858 - val_precision_m: 0.9876 - val_recall_m: 0.9841
Epoch 15/15
242/242 [==============================] - 77s 318ms/step - loss: 0.0317 - acc: 0.9910 - f1_m: 0.9911 - precision_m: 0.9916 - recall_m: 0.9906 - val_loss: 0.0286 - val_acc: 0.9882 - val_f1_m: 0.9880 - val_precision_m: 0.9882 - val_recall_m: 0.9877
61/61 [==============================] - 4s 71ms/step - loss: 0.0286 - acc: 0.9882 - f1_m: 0.9880 - precision_m: 0.9882 - recall_m: 0.9877
Test Loss: 0.02861432358622551
Test Accuracy: 0.988162636756897
F1 score: 0.9879570007324219
Precision: 0.9882172346115112
Recall: 0.9877049326896667

Process finished with exit code 0

```