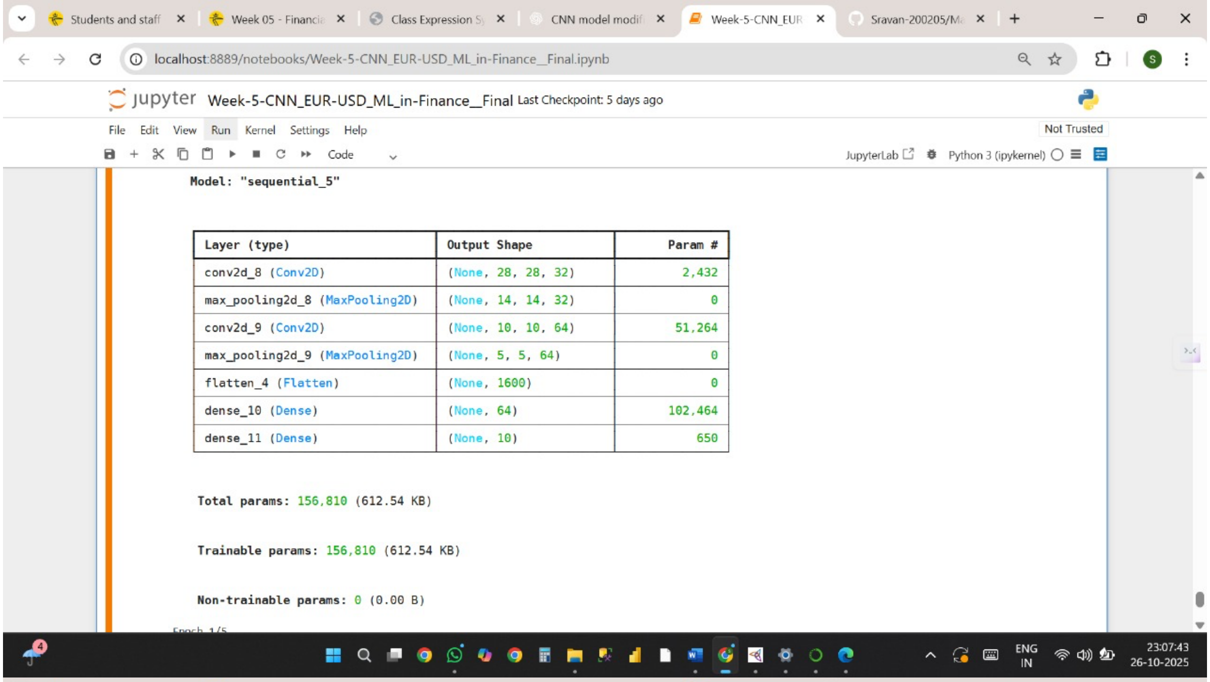
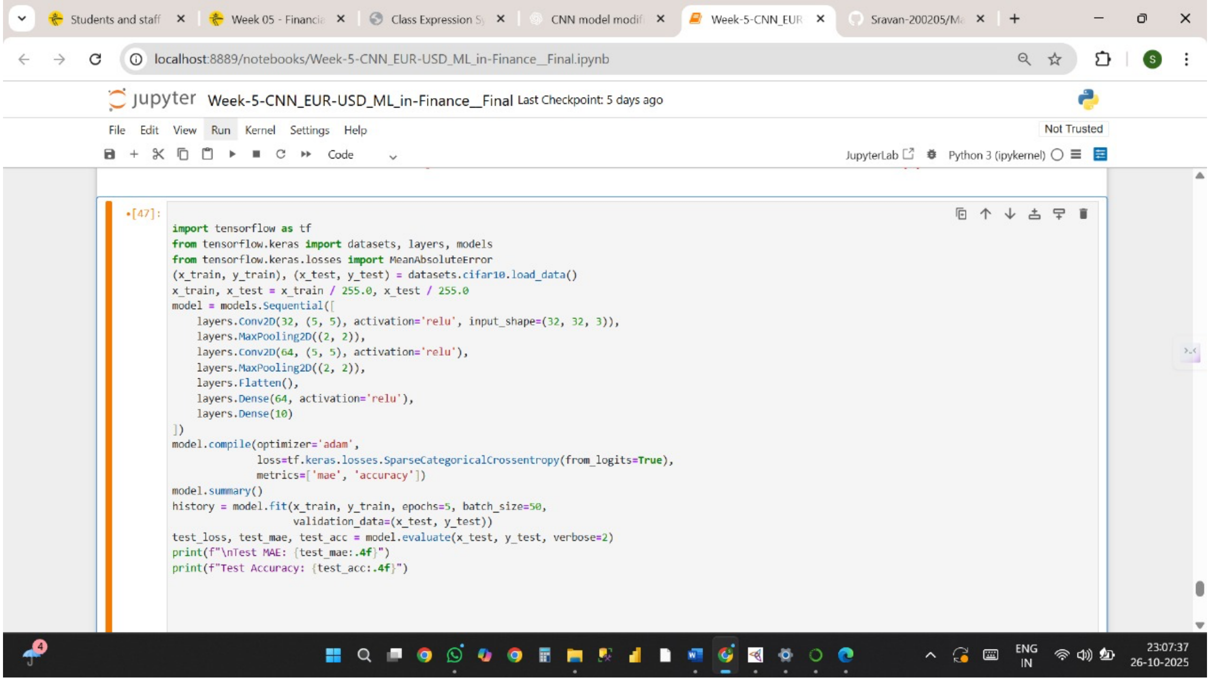
Week-5

Result:-


localhost:8889/notebooks/Week-5-CNN_EUR-USD_ML_in-Finance__Final.ipynb
jupyter Week-5-CNN_EUR-USD_ML_in-Finance__Final Last Checkpoint: 5 days ago
File Edit View Run Kernel Settings Help
Not Trusted
Code
JupyterLab
Python 3 (ipykernel)
23:07:43
26-10-2025

```
Model: "sequential_5"

┌─────────────────────────────────┬────────────────────────┬───────────────┐
│ Layer (type)                    │ Output Shape           │       Param # │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ conv2d_8 (Conv2D)               │ (None, 28, 28, 32)     │         2,432 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ max_pooling2d_8 (MaxPooling2D)  │ (None, 14, 14, 32)     │             0 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ conv2d_9 (Conv2D)               │ (None, 10, 10, 64)     │        51,264 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ max_pooling2d_9 (MaxPooling2D)  │ (None, 5, 5, 64)       │             0 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ flatten_4 (Flatten)             │ (None, 1600)           │             0 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_10 (Dense)                │ (None, 64)             │       102,464 │
├─────────────────────────────────┼────────────────────────┼───────────────┤
│ dense_11 (Dense)                │ (None, 10)             │           650 │
└─────────────────────────────────┴────────────────────────┴───────────────┘

 Total params: 156,810 (612.54 KB)

 Trainable params: 156,810 (612.54 KB)

 Non-trainable params: 0 (0.00 B)

Epoch 1/5
```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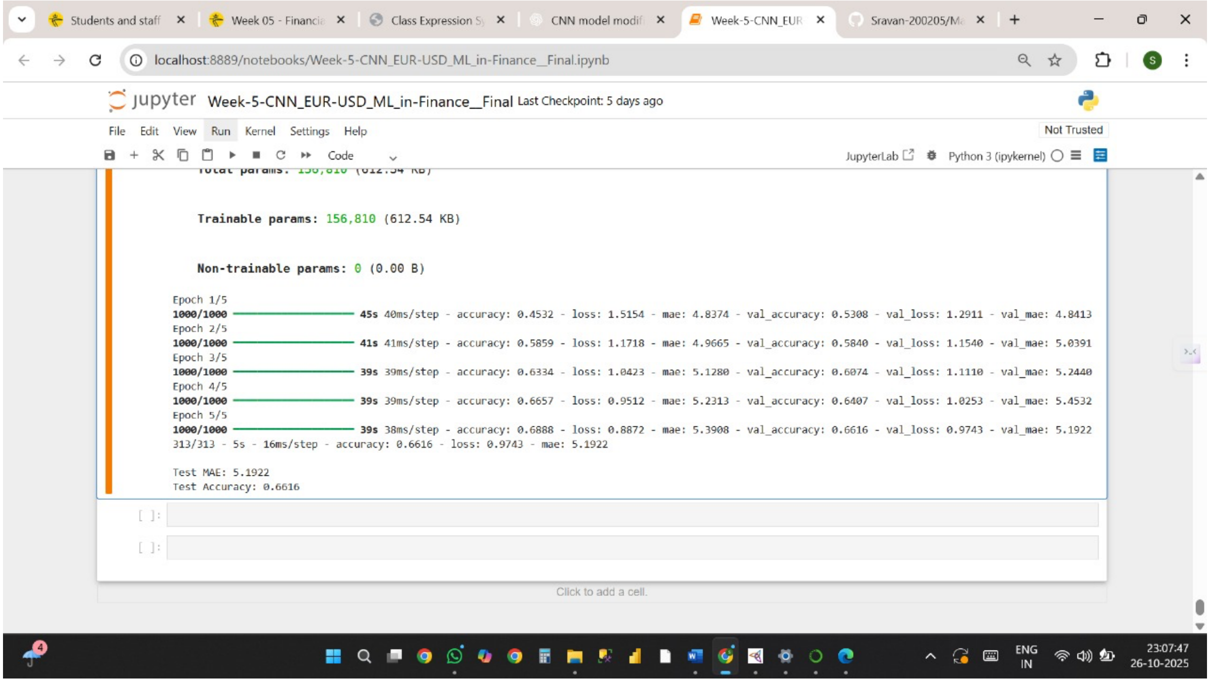
jupyter Week-5-CNN_EUR-USD_ML_in-Finance__Final Last Checkpoint: 5 days ago
File Edit View Run Kernel Settings Help
Not Trusted
Code
JupyterLab
Python 3 (ipykernel)
23:07:37
26-10-2025

```
•[47]:
import tensorflow as tf
from tensorflow.keras import datasets, layers, models
from tensorflow.keras.losses import MeanAbsoluteError
(x_train, y_train), (x_test, y_test) = datasets.cifar10.load_data()
x_train, x_test = x_train / 255.0, x_test / 255.0
model = models.Sequential([
    layers.Conv2D(32, (5, 5), activation='relu', input_shape=(32, 32, 3)),
    layers.MaxPooling2D((2, 2)),
    layers.Conv2D(64, (5, 5), activation='relu'),
    layers.MaxPooling2D((2, 2)),
    layers.Flatten(),
    layers.Dense(64, activation='relu'),
    layers.Dense(10)
])
model.compile(optimizer='adam',
              loss=tf.keras.losses.SparseCategoricalCrossentropy(from_logits=True),
              metrics=['mae', 'accuracy'])
model.summary()
history = model.fit(x_train, y_train, epochs=5, batch_size=50,
                    validation_data=(x_test, y_test))
test_loss, test_mae, test_acc = model.evaluate(x_test, y_test, verbose=2)
print(f"\nTest MAE: {test_mae:.4f}")
print(f"Test Accuracy: {test_acc:.4f}")
```



```
    Total params: 156,810 (612.54 KB)


    Trainable params: 156,810 (612.54 KB)


    Non-trainable params: 0 (0.00 B)

Epoch 1/5
1000/1000 ━━━━━━━━━━━━━━━━━━━━ 45s 40ms/step - accuracy: 0.4532 - loss: 1.5154 - mae: 4.8374 - val_accuracy: 0.5308 - val_loss: 1.2911 - val_mae: 4.8413
Epoch 2/5
1000/1000 ━━━━━━━━━━━━━━━━━━━━ 41s 41ms/step - accuracy: 0.5859 - loss: 1.1718 - mae: 4.9665 - val_accuracy: 0.5840 - val_loss: 1.1540 - val_mae: 5.0391
Epoch 3/5
1000/1000 ━━━━━━━━━━━━━━━━━━━━ 39s 39ms/step - accuracy: 0.6334 - loss: 1.0423 - mae: 5.1280 - val_accuracy: 0.6074 - val_loss: 1.1110 - val_mae: 5.2440
Epoch 4/5
1000/1000 ━━━━━━━━━━━━━━━━━━━━ 39s 39ms/step - accuracy: 0.6657 - loss: 0.9512 - mae: 5.2313 - val_accuracy: 0.6407 - val_loss: 1.0253 - val_mae: 5.4532
Epoch 5/5
1000/1000 ━━━━━━━━━━━━━━━━━━━━ 39s 38ms/step - accuracy: 0.6888 - loss: 0.8872 - mae: 5.3908 - val_accuracy: 0.6616 - val_loss: 0.9743 - val_mae: 5.1922
313/313 - 5s - 16ms/step - accuracy: 0.6616 - loss: 0.9743 - mae: 5.1922

Test MAE: 5.1922
Test Accuracy: 0.6616
```

```
[ ]:
[ ]:
```