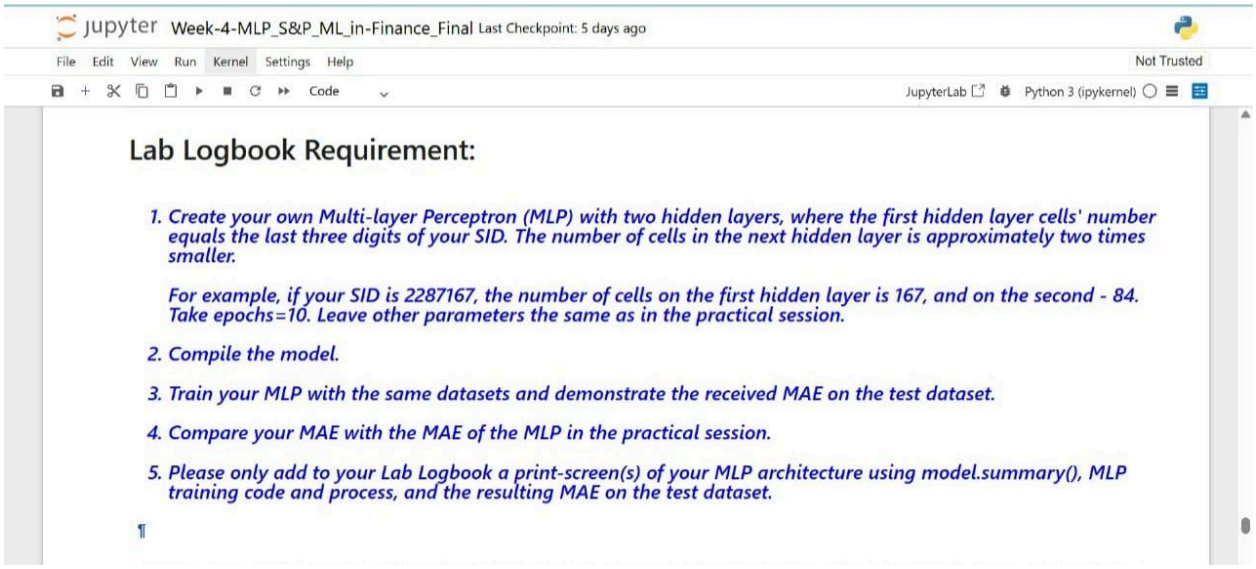
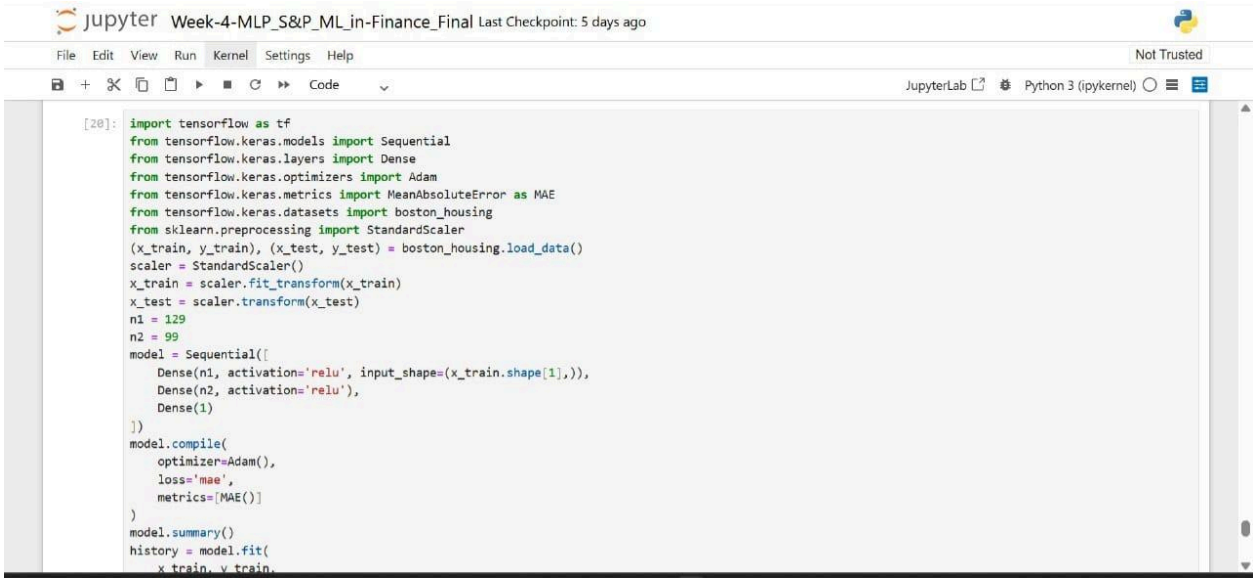
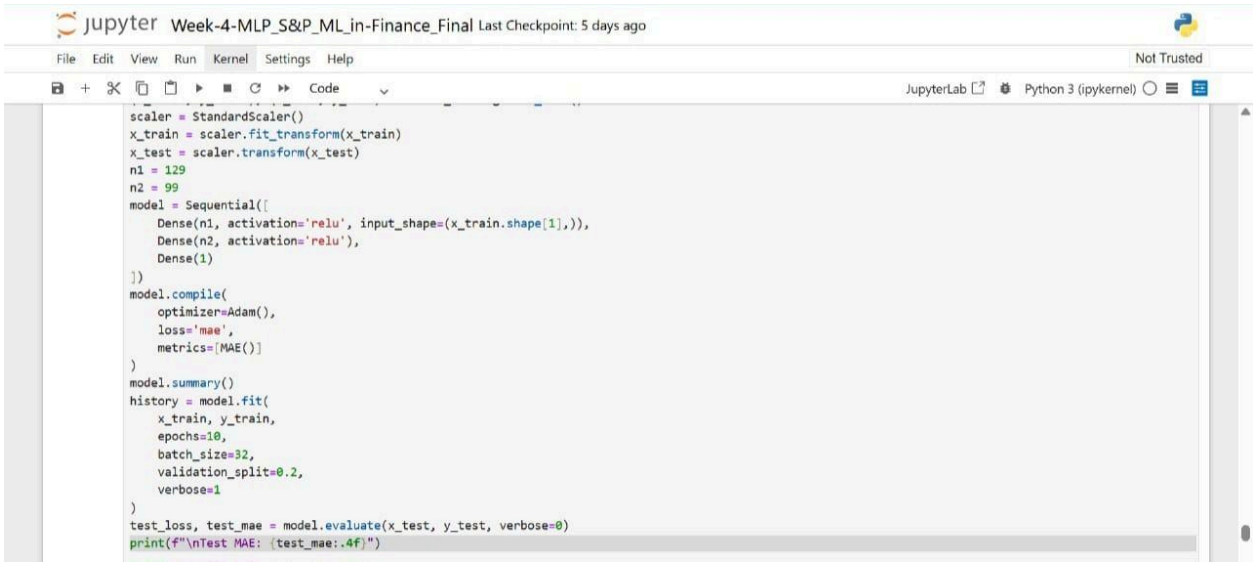
- NAME :- JUPUDI VISHNU PAVAN KUMAR
- SID NUMBER :- 2449129
- ASSIGNMENT :- WEEK 4






jupyter Week-4-MLP_S&P_ML_in-Finance_Final Last Checkpoint: 5 days ago
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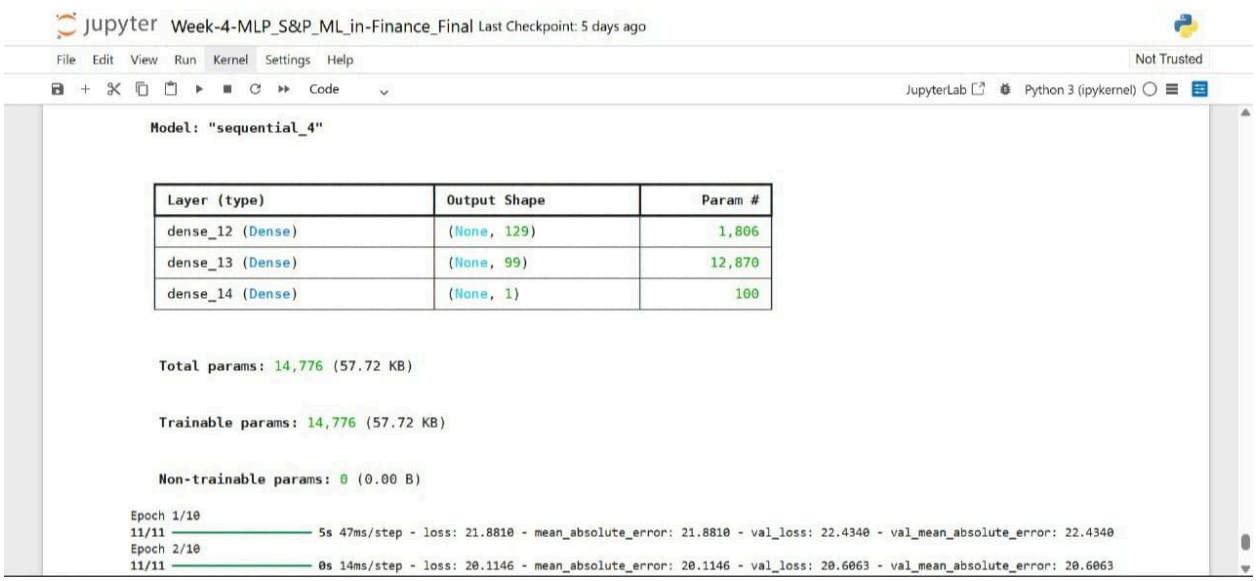
Not Trusted
Code
JupyterLab
Python 3 (ipykernel)
scaler = StandardScaler()
x_train = scaler.fit_transform(x_train)
x_test = scaler.transform(x_test)
n1 = 129
n2 = 99
model = Sequential([
Dense(n1, activation='relu', input_shape=(x_train.shape[1],)),
Dense(n2, activation='relu'),
Dense(1)
])
model.compile(
optimizer=Adam(),
loss='mae',
metrics=[MAE()]
)
model.summary()
history = model.fit(
x_train, y_train,
epochs=10,
batch_size=32,
validation_split=0.2,
verbose=1
)
test_loss, test_mae = model.evaluate(x_test, y_test, verbose=0)
print(f"\nTest MAE: {test_mae:.4f}")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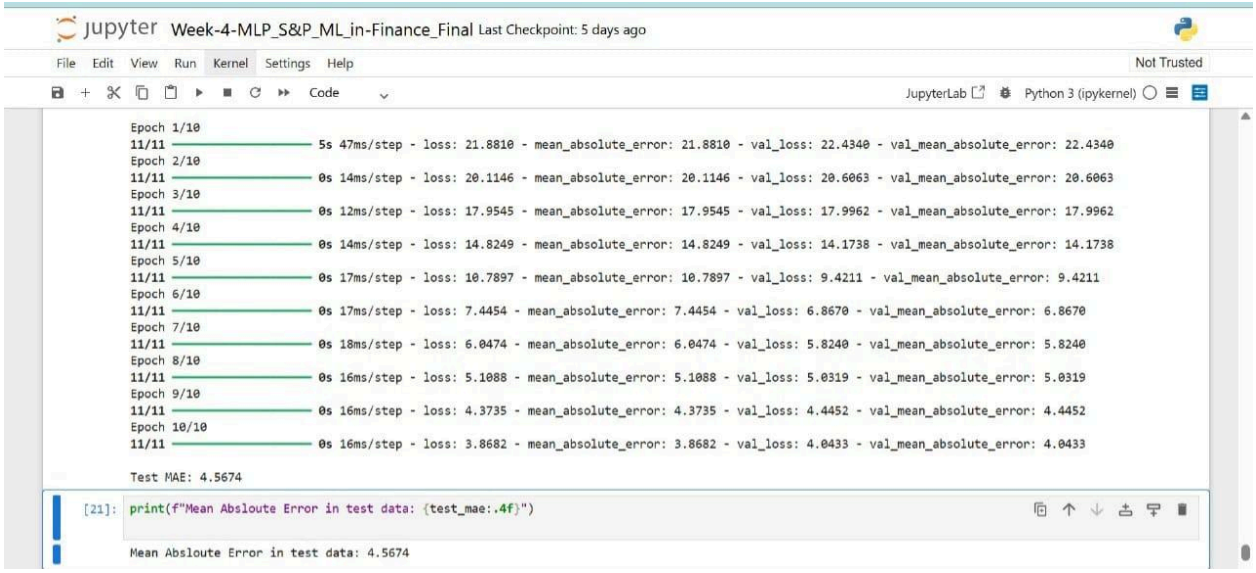
Code
JupyterLab
Python 3 (ipykernel)
Model: "sequential_4"
Layer (type) | Output Shape | Param #
dense_12 (Dense) | (None, 129) | 1,806
dense_13 (Dense) | (None, 99) | 12,870
dense_14 (Dense) | (None, 1) | 100
Total params: 14,776 (57.72 KB)
Trainable params: 14,776 (57.72 KB)
Non-trainable params: 0 (0.00 B)
Epoch 1/10
11/11 5s 47ms/step - loss: 21.8810 - mean_absolute_error: 21.8810 - val_loss: 22.4340 - val_mean_absolute_error: 22.4340
Epoch 2/10
11/11 0s 14ms/step - loss: 20.1146 - mean_absolute_error: 20.1146 - val_loss: 20.6063 - val_mean_absolute_error: 20.6063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Code
JupyterLab
Python 3 (ipykernel)
Epoch 1/10
11/11 5s 47ms/step - loss: 21.8810 - mean_absolute_error: 21.8810 - val_loss: 22.4340 - val_mean_absolute_error: 22.4340
Epoch 2/10
11/11 0s 14ms/step - loss: 20.1146 - mean_absolute_error: 20.1146 - val_loss: 20.6063 - val_mean_absolute_error: 20.6063
Epoch 3/10
11/11 0s 12ms/step - loss: 17.9545 - mean_absolute_error: 17.9545 - val_loss: 17.9962 - val_mean_absolute_error: 17.9962
Epoch 4/10
11/11 0s 14ms/step - loss: 14.8249 - mean_absolute_error: 14.8249 - val_loss: 14.1738 - val_mean_absolute_error: 14.1738
Epoch 5/10
11/11 0s 17ms/step - loss: 10.7897 - mean_absolute_error: 10.7897 - val_loss: 9.4211 - val_mean_absolute_error: 9.4211
Epoch 6/10
11/11 0s 17ms/step - loss: 7.4454 - mean_absolute_error: 7.4454 - val_loss: 6.8670 - val_mean_absolute_error: 6.8670
Epoch 7/10
11/11 0s 18ms/step - loss: 6.0474 - mean_absolute_error: 6.0474 - val_loss: 5.8240 - val_mean_absolute_error: 5.8240
Epoch 8/10
11/11 0s 16ms/step - loss: 5.1088 - mean_absolute_error: 5.1088 - val_loss: 5.0319 - val_mean_absolute_error: 5.0319
Epoch 9/10
11/11 0s 16ms/step - loss: 4.3735 - mean_absolute_error: 4.3735 - val_loss: 4.4452 - val_mean_absolute_error: 4.4452
Epoch 10/10
11/11 0s 16ms/step - loss: 3.8682 - mean_absolute_error: 3.8682 - val_loss: 4.0433 - val_mean_absolute_error: 4.0433
Test MAE: 4.5674
[21]: print(f"Mean Absloute Error in test data: {test_mae:.4f}")
Mean Absloute Error in test data: 4.5674