

... Welcome next_word_rnn.py 4 ...

4

```
next_word_rnn.py > ...
57 model = Sequential([
58     Embedding(total_words, 10, input_length=3),
59     SimpleRNN(64),
60     Dense(total_words, activation='softmax')
61 ])
62
63 model.compile(loss='categorical_crossentropy', optimizer='adam', metrics=['accuracy'])
64 model.summary()
65 # -----
66 # 4. Train model
67 # -----
68
69 model.fit(X, y, epochs=300, verbose=1)
70 # -----
71 # 5. Prediction function
72 # -----
73
74 def predict_next_word(text_input):
```

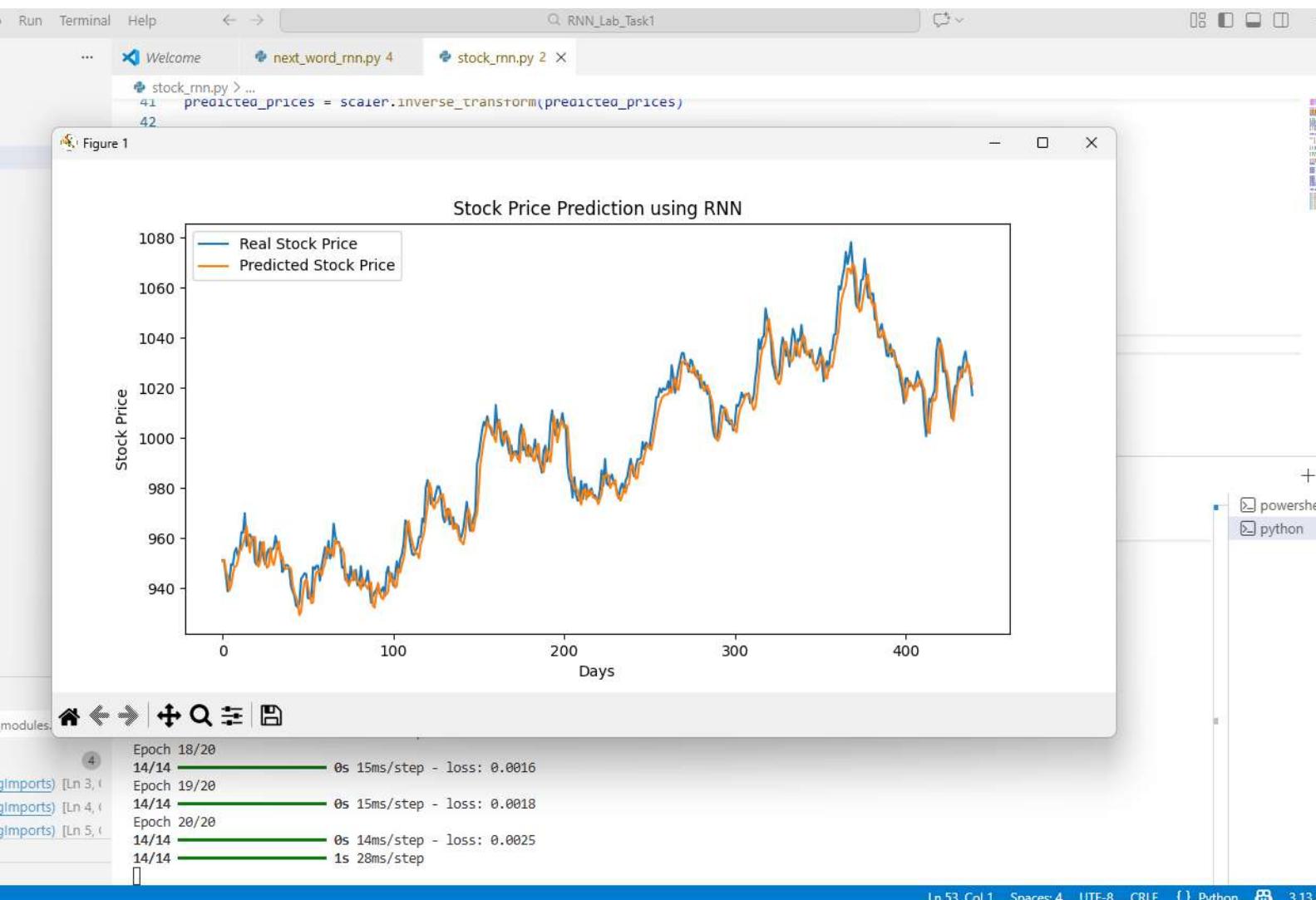
OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\zumer\OneDrive\Desktop\lab working\lab 6\RNN_Lab_Task1> python next_word_rnn.py
=>

Epoch 293/300
1/1 [=====] 0s 60ms/step - accuracy: 0.8333 - loss: 0.2369
Epoch 294/300
1/1 [=====] 0s 57ms/step - accuracy: 0.8333 - loss: 0.2368
Epoch 295/300
1/1 [=====] 0s 68ms/step - accuracy: 0.8333 - loss: 0.2368
Epoch 296/300
1/1 [=====] 0s 56ms/step - accuracy: 0.8333 - loss: 0.2367
Epoch 297/300
1/1 [=====] 0s 61ms/step - accuracy: 0.8333 - loss: 0.2367
Epoch 298/300
1/1 [=====] 0s 92ms/step - accuracy: 0.8333 - loss: 0.2367
Epoch 299/300
1/1 [=====] 0s 59ms/step - accuracy: 0.8333 - loss: 0.2366
Epoch 300/300
1/1 [=====] 0s 59ms/step - accuracy: 0.8333 - loss: 0.2366
Input: the sun is
Predicted Next Word: shining

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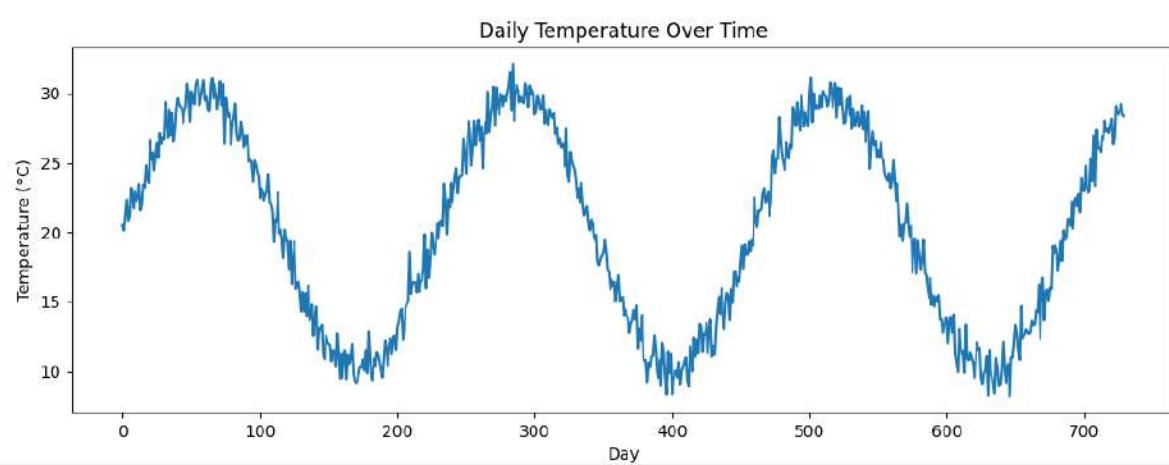
Ln 90, Col 1 Spaces: 4 UTF-8



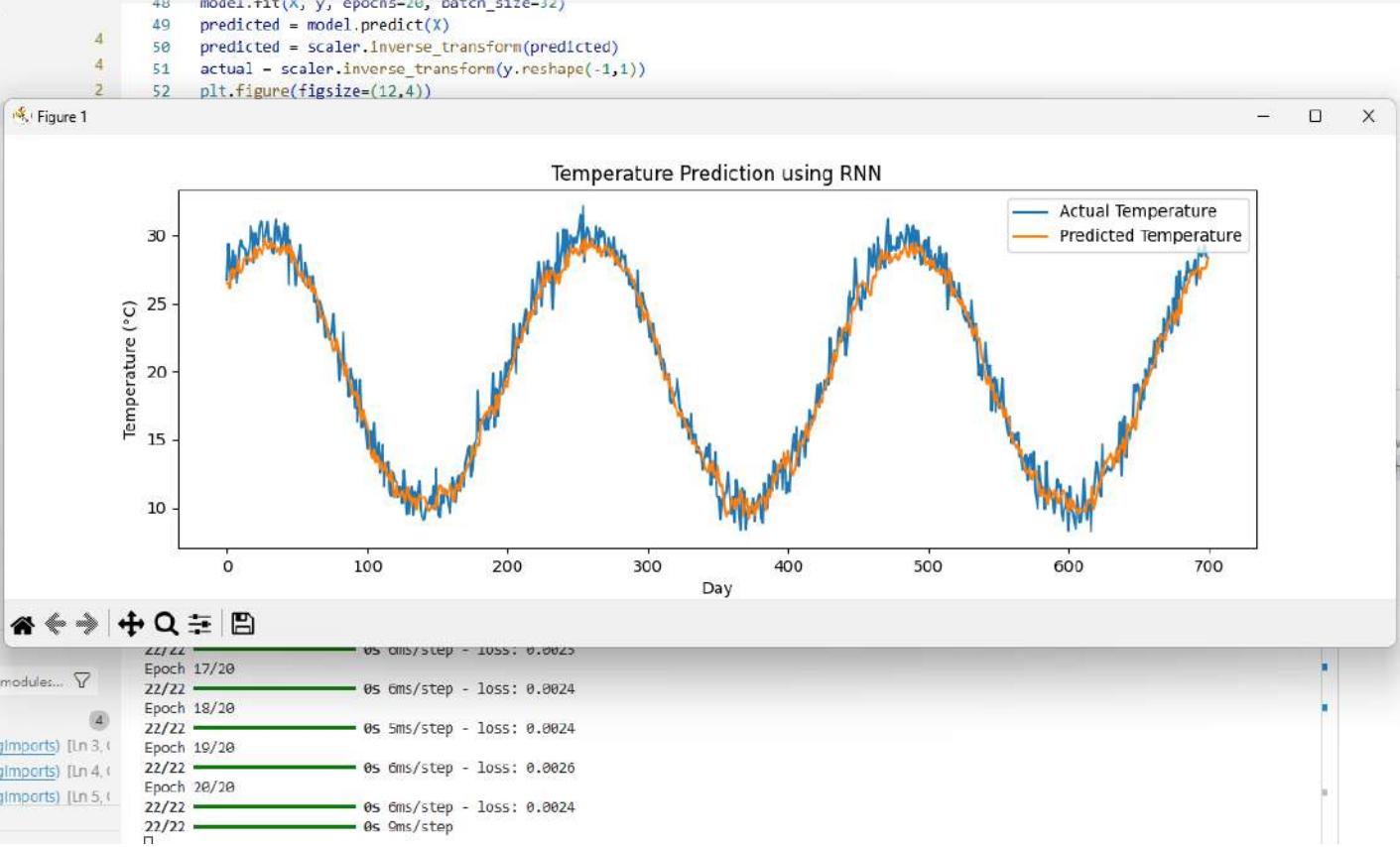
OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\zumer\OneDrive\Desktop\lab working\lab 6\RNN_Lab_Task1> python sentiment_rnn.py
>>
Total params: 0 (0.00 B)
Trainable params: 0 (0.00 B)
Non-trainable params: 0 (0.00 B)
Epoch 1/5
157/157 ━━━━━━━━ 10s 50ms/step - accuracy: 0.6055 - loss: 0.6416 - val_accuracy: 0.7176 - val_loss: 0.5484
Epoch 2/5
157/157 ━━━━━━ 7s 46ms/step - accuracy: 0.8485 - loss: 0.3574 - val_accuracy: 0.8432 - val_loss: 0.3884
Epoch 3/5
157/157 ━━━━ 7s 46ms/step - accuracy: 0.9255 - loss: 0.2030 - val_accuracy: 0.8092 - val_loss: 0.4473
Epoch 4/5
157/157 ━━━━ 7s 46ms/step - accuracy: 0.9829 - loss: 0.0618 - val_accuracy: 0.7648 - val_loss: 0.6109
Epoch 5/5
157/157 ━━━━ 7s 47ms/step - accuracy: 0.9944 - loss: 0.0256 - val_accuracy: 0.8032 - val_loss: 0.6156
782/782 ━━━━ 6s 8ms/step - accuracy: 0.8032 - loss: 0.6193
Test Accuracy: 80.32 %
1/1 ━ 0s 158ms/step
Review: this movie was amazing and very interesting
Sentiment: POSITIVE 😊
PS C:\Users\zumer\OneDrive\Desktop\lab working\lab 6\RNN_Lab_Task1>
```

```
... welcome next_word_rnn.py stock_rnn.py sentiment_rnn.py weather_rnn.py
  weather_rnn.py > ...
48     model.fit(X, y, epochs=20, batch_size=32)
49     predicted = model.predict(X)
50     predicted = scaler.inverse_transform(predicted)
51     actual = scaler.inverse_transform(y.reshape(-1,1))
52     plt.figure(figsize=(12,4))
```



```
>rich>keras>3.10.0>tensorflow) (0.1.2)
$ PS C:\Users\zumer\OneDrive\Desktop\lab working\lab 6\RNN_Lab_Task1> python weather_rnn.py
>>
2026-01-13 03:17:27.292765: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
2026-01-13 03:17:30.894456: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
[]
```



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```
PS C:\Users\zumer\OneDrive\Desktop\lab working\lab 6\RNN_Lab_Task1> python music_rnn.py
>>
Epoch 43/50
5/5 ━━━━━━ 0s 8ms/step - loss: 0.0373
Epoch 44/50
5/5 ━━━━━━ 0s 9ms/step - loss: 0.0357
Epoch 45/50
5/5 ━━━━━━ 0s 9ms/step - loss: 0.0342
Epoch 46/50
5/5 ━━━━━━ 0s 8ms/step - loss: 0.0328
Epoch 47/50
5/5 ━━━━━━ 0s 8ms/step - loss: 0.0314
Epoch 48/50
5/5 ━━━━━━ 0s 7ms/step - loss: 0.0301
Epoch 49/50
5/5 ━━━━━━ 0s 9ms/step - loss: 0.0290
Epoch 50/50
5/5 ━━━━━━ 0s 9ms/step - loss: 0.0278
Generated Note Sequence:
['G4', 'A4', 'B4', 'C5', 'C4', 'D4', 'E4', 'F4', 'G4', 'A4', 'B4', 'C5', 'C4', 'D4', 'E4', 'F4', 'G4', 'A4', 'B4', 'C5']
```

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