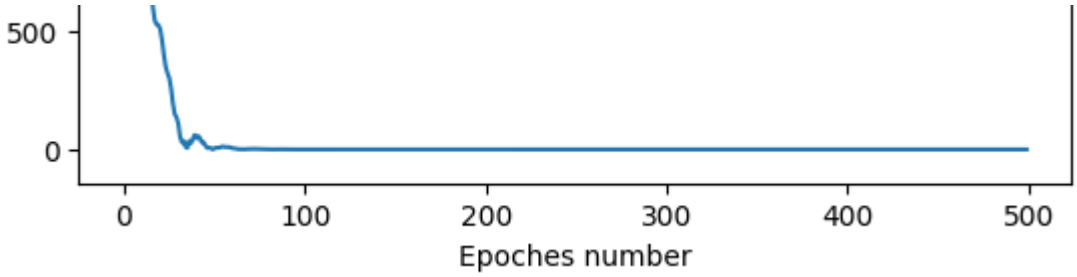
```
import tensorflow as tf
import logging
logger = tf.get_logger()
logger.setLevel(logging.ERROR)
import numpy as np


cels = np.array([-40, -10, 0, 8, 15, 22, 38], dtype=float)
fahr = np.array([-40, 14, 32, 46, 59, 72, 100], dtype=float)

for i, c in enumerate(cels):
  print("{} degrees in Celisus = {} is degrees in Fahranhet".format(c, fahr[i]))


l0 = tf.keras.layers.Dense(units=4, input_shape=[1])
l1 = tf.keras.layers.Dense(units=4)
l2 = tf.keras.layers.Dense(units=1)

model = tf.keras.Sequential([l0, l1, l2])


model.compile(loss='mean_squared_error', optimizer=tf.keras.optimizers.Adam(0.1))


history= model.fit(cels, fahr, epochs=500, verbose=False)
print("finished training the model")
```

```
finished training the model
```

```
import matplotlib.pyplot as plt
plt.xlabel('Epoches number')
plt.ylabel('Loss')
plt.plot(history.history['loss'])
```

```
[<matplotlib.lines.Line2D at 0x7fa4e0baf850>]
```




```
print(model.predict([255]))
```

```
1/1 [==============================] - 0s 84ms/step
[[490.42947]]
```

```
print("These are the layer variable: {}".format(l0.get_weights()))
```

```
These are the layer variable: [array([[ 0.780571  ,  0.2968898 , -0.74810684,  0.3618
      dtype=float32), array([ 3.662424 , -0.2043244, -3.6206067, -2.0130203], dtype=f
```

```
print("These are the layer variable: {}".format(l1.get_weights()))
```

```
These are the layer variable: [array([[-0.52045375,  0.81835604, -0.08686838, -0.2682
       [-0.02159481, -0.15285183, -0.64505035,  0.5676226 ],
       [ 0.46279666, -0.795542  , -0.28294647,  0.39789876],
       [ 0.6633965 , -0.38332328,  0.17093346,  1.1937319 ]],
      dtype=float32), array([-3.117513 ,  3.5797377, -3.1225917, -1.8293309], dtype=f
```

```
print("These are the layer variable: {}".format(l2.get_weights()))
```

```
These are the layer variable: [array([[-0.92172474],
       [ 1.3442702 ],
       [-0.40639633],
       [-0.91718197]], dtype=float32), array([3.4797738], dtype=float32)]
```