In [1]:

```
import numpy as np
import tensorflow as tf
from tensorflow import keras
from sklearn.datasets import fetch_california_housing
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
```

In [2]:

```
# Load the California housing dataset
housing = fetch_california_housing()
X, y = housing.data, housing.target
```

In [3]:

```
# Normalize the features
scaler = StandardScaler()
X = scaler.fit_transform(X)
```

In [4]:

```
# Split the dataset into train and test sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, rando
```

In [5]:

```
# Define the model architecture
model = keras.Sequential([
    keras.layers.Dense(64, activation='relu', input_shape=(X_train.shape[1],))
    keras.layers.Dense(32, activation='relu'),
    keras.layers.Dense(1)  # Output layer with single neuron for regression
])
```

In [6]:

```
# Compile the model
model.compile(optimizer='adam', loss='mean_squared_error')
```

In [7]:

```python
# Train the model
model.fit(X_train, y_train, epochs=100, batch_size=32, validation_split=0.2)
```

```
Epoch 52/100
413/413 [==============================] - 1s 2ms/step - loss: 0.2511 - va
l_loss: 0.2816
Epoch 53/100
413/413 [==============================] - 1s 2ms/step - loss: 0.2504 - va
l_loss: 0.2928
Epoch 54/100
413/413 [==============================] - 1s 2ms/step - loss: 0.2500 - va
l_loss: 0.3025
Epoch 55/100
413/413 [==============================] - 1s 3ms/step - loss: 0.2492 - va
l_loss: 0.3072
Epoch 56/100
413/413 [==============================] - 1s 2ms/step - loss: 0.2489 - va
l_loss: 0.2830
Epoch 57/100
413/413 [==============================] - 1s 2ms/step - loss: 0.2537 - va
l_loss: 0.2835
Epoch 58/100
413/413 [==============================] - 1s 2ms/step - loss: 0.2464 - va
```

In [8]:

```python
# Evaluate the model on test data
test_loss = model.evaluate(X_test, y_test)
print("Test Loss:", test_loss)
```

```
129/129 [==============================] - 0s 1ms/step - loss: 0.2759
Test Loss: 0.27585548162460327
```