

3. TensorFlow Computation Graph with Eager Execution

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In [ ]: # Import TensorFlow library for building and running machine learning models
import tensorflow as tf
```

```
In [ ]: # Define constant tensors a and b
a = tf.constant([5.0, 3.0]) # Tensor with values [5.0, 3.0]
b = tf.constant([2.0, 7.0]) # Tensor with values [2.0, 7.0]
```

```
In [ ]: # Eager execution: add tensors a and b element-wise, result is [7.0, 10.0]
c = a + b
# Convert tensor to numpy array and print the result
print("Eager Execution Output: ", c.numpy())
```

Eager Execution Output: [7. 10.]

```
In [ ]: # Define a function to multiply two tensors element-wise
@tf.function # Converts the function to a TensorFlow computation graph (graph mode)
def multiply_tensors(x, y):
    return x * y
```

```
In [ ]: # Call the graph mode function with a and b, result is [10.0, 21.0]
result = multiply_tensors(a, b)
# Convert tensor to numpy array and print the result
print("Graph Mode Output:", result.numpy())
```

Graph Mode Output: [10. 21.]

```
In [ ]:
```