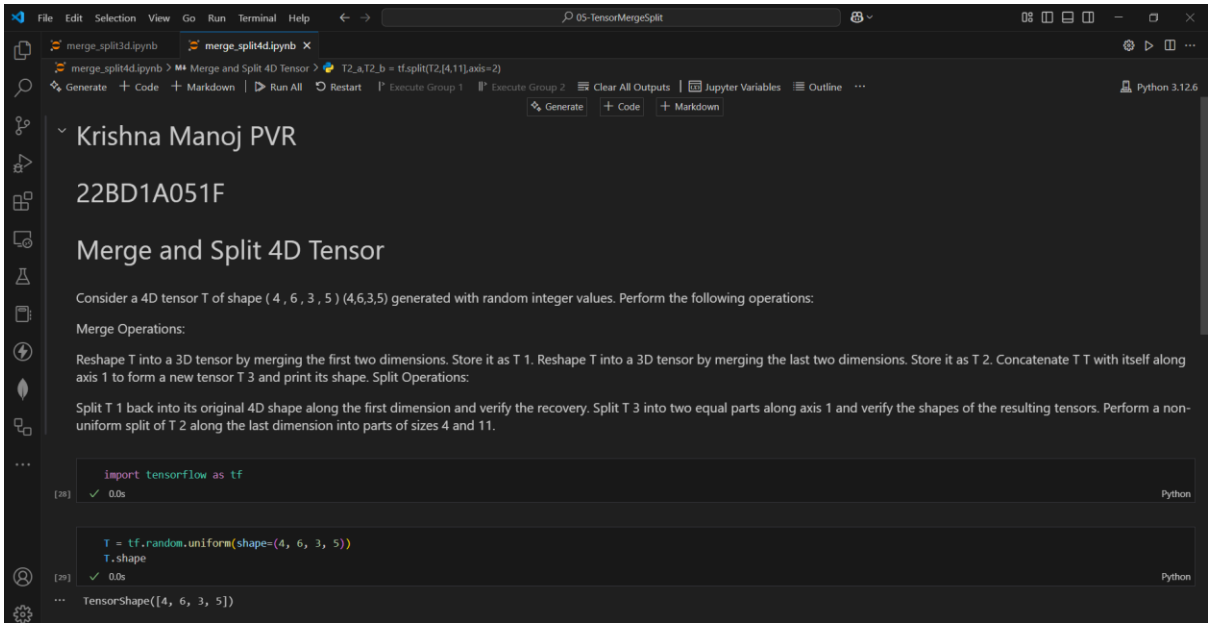
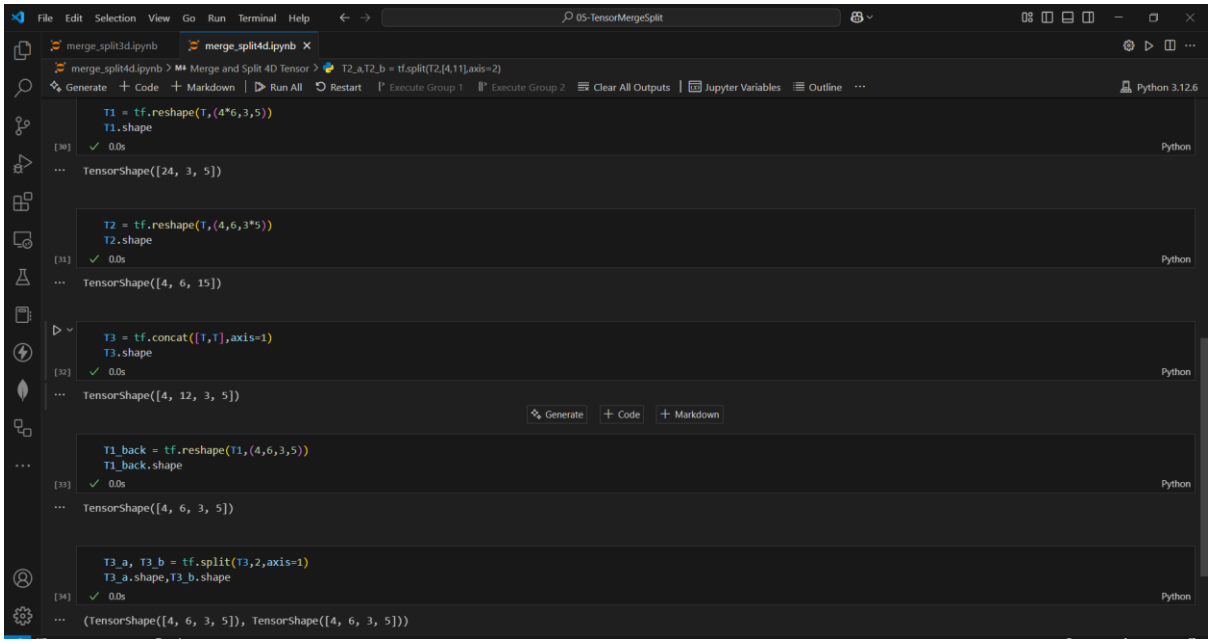

File Edit Selection View Go Run Terminal Help
05-TensorMergeSplit
merge_split3d.ipynb
merge_split4d.ipynb
Generate Code Markdown Run All Restart Execute Group 1 Execute Group 2 Clear All Outputs Jupyter Variables Outline
Python 3.12.6
Krishna Manoj PVR
22BD1A051F
Merge and Split 4D Tensor
Consider a 4D tensor T of shape (4 , 6 , 3 , 5) (4,6,3,5) generated with random integer values. Perform the following operations:
Merge Operations:
Reshape T into a 3D tensor by merging the first two dimensions. Store it as T 1. Reshape T into a 3D tensor by merging the last two dimensions. Store it as T 2. Concatenate T T with itself along axis 1 to form a new tensor T 3 and print its shape. Split Operations:
Split T 1 back into its original 4D shape along the first dimension and verify the recovery. Split T 3 into two equal parts along axis 1 and verify the shapes of the resulting tensors. Perform a non-uniform split of T 2 along the last dimension into parts of sizes 4 and 11.
import tensorflow as tf
[28] 0.0s Python
T = tf.random.uniform(shape=(4, 6, 3, 5))
T.shape
[29] 0.0s Python
TensorShape([4, 6, 3, 5])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05-TensorMergeSplit
merge_split3d.ipynb
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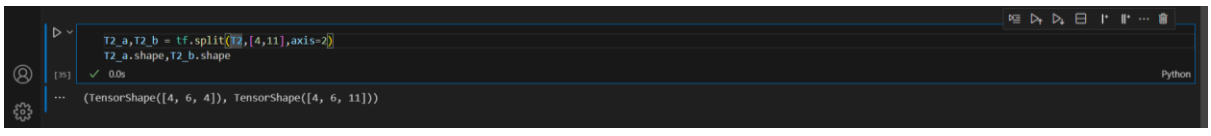
Generate Code Markdown Run All Restart Execute Group 1 Execute Group 2 Clear All Outputs Jupyter Variables Outline
Python 3.12.6
T1 = tf.reshape(T,(4*6,3,5))
T1.shape
[30] 0.0s Python
TensorShape([24, 3, 5])
T2 = tf.reshape(T,(4,6,3*5))
T2.shape
[31] 0.0s Python
TensorShape([4, 6, 15])
T3 = tf.concat([T,T],axis=1)
T3.shape
[32] 0.0s Python
TensorShape([4, 12, 3, 5])
Generate Code Markdown
T1_back = tf.reshape(T1,(4,6,3,5))
T1_back.shape
[33] 0.0s Python
TensorShape([4, 6, 3, 5])
T3_a, T3_b = tf.split(T3,2,axis=1)
T3_a.shape,T3_b.shape
[34] 0.0s Python
(TensorShape([4, 6, 3, 5]), TensorShape([4, 6, 3, 5]))


T2_a,T2_b = tf.split(T2,[4,11],axis=2)
T2_a.shape,T2_b.shape
[35] 0.0s Python
(TensorShape([4, 6, 4]), TensorShape([4, 6, 11]))