Example Transaction Hashes

TxA = a1b2
TxB = c3d4
TxC = e5f6
TxD = 7890

Pairing and Hashing the Leaves

Hash(AB) = SHA256(SHA256(a1b2 + c3d4))
Hash(CD) = SHA256(SHA256(e5f6 + 7890))

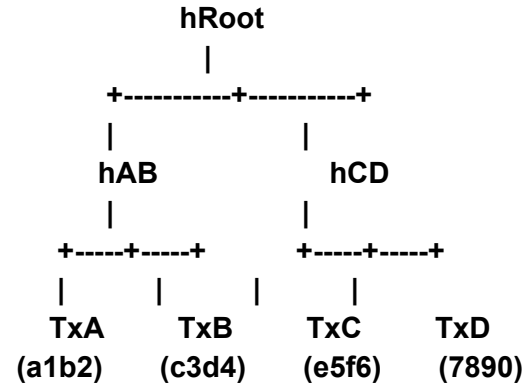
Hash(AB) = hAB
Hash(CD) = hCD

Combine the Two Parent Hashes

Merkle Root = SHA256(SHA256(hAB + hCD))

Merkle Root = hRoot

ASCII Merkle Tree Diagram



Explanation

Each leaf node is a transaction hash.

Each pair of leaves is concatenated and double-hashed to produce a parent hash.

This repeats until a single Merkle Root remains — that's the value stored in the block header.