

Scalar

The term "scalar" comes from linear algebra, where it is used to differentiate a single number from a vector or a matrix. In mathematical terms, a scalar is a single element of a field which is used to define a vector space. It's a quantity that doesn't change with coordinate system rotation or translation, hence it's "scale" invariant, which is where the term "scalar" comes from.

In other words, a scalar has magnitude (size) only, and no direction, unlike vectors which have both magnitude and direction.

In the context of programming and data structures, a scalar usually refers to a single number, as opposed to an array or list (which can be thought of as a vector), a 2-D array (matrix), or higher-dimensional structures.

For example, in Python's numpy library or in TensorFlow, a scalar would just be a single number, e.g., `x = 5`, whereas a vector would be an array of numbers, e.g., `v = np.array([1, 2, 3])`.

So, the term "scalar" is used to describe functions or operations that produce a single number as output, to distinguish them from those that produce arrays or other data structures as output.