scalar 
tensor 
What is it? 
a single number 
a number with direction 
(e.g. wind speed with 
direction) but can also 
have many other numbers 
a 2-dimensional array of 
numbers 
an n-dimensional array of 
numbers 
Number of dimensions 
can be any number, a O- 
dimension tensor is a 
scalar, a I-dimension 
tensor is a vector 
Lower or upper 
(usually/example) 
Lower ( a ) 
Lower ( y ) 
Upper ( Q ) 
Upper ( x) 

1. **Tensors**

**Link -->** <https://pytorch.org/docs/stable/torch.html>

1. **Scaler ( only magitude)**
   1. Ex: --> Scaler = torch.tensor(7)
   2. Scaler.ndim ( 0 dimension)
   3. Scaler.item() ( 7)
2. **Vector ( magnitude and direction)**
   1. Vector = torch.Tensor([7,7])
   2. Vector.ndim ( 1 dimension) ( no. Of pair Square brackets)
   3. Vector.shape --> torch.Size([2])
3. **Matrix**
   1. Matrix = torch.tensor ([[7,8],  
       [1,1]])
   2. MATRIX.ndim -> 2
   3. Fetching elements in matrix --> MATRIX[1] --> [7,8]
   4. Shape of the matrix -> torch.Size([2,2])
4. **Tensor**
   1. TENSOR = torch.tensor([[  
      [1,2,3],  
      [4,5,6],  
      [7,8,9]  
       ]  
         
       ])
   2. 3 dimension
   3. Shape --> 1,3,3