## 01.Step Activation Function

- The step activation function can either return 0 or 1, depending on the input.
- The output of the step function is binary, which can be useful in certain applications such as image segmentation or binary classification problems.
- The step function is not differentiable making it difficult to use with gradient-based optimization algorithms such as a backpropagation.

## 02.Sigmoid Activation Function

- A non-linear function, the sigmoid function produces values between 0 and 1.
- The sigmoid function output can be interpreted as a probability of the input belonging to a certain class, which is useful for binary classification problems.
- The sigmoid function has a simple mathematical form and is easy to implement using NumPy.

## 03.Tanh Activation Function

- The Tanh activation functions are likewise a sort of continuous activation function similar to Sigmoid but are symmetric over the origin; also, the output values vary between -1 and 1.
- The tanh function suffers from the vanishing gradient problem, which can slow down or prevent convergence during training.
- The tanh function has a more complex mathematical form than the sigmoid function but is still easy to implement using NumPy.

## 04.ReLU Activation Function

- ReLU activation functions are a form of continuous activation function that, depending on whether the input is larger than or less than 0, returns either 0 or the input value.
- The ReLU function does not suffer from the vanishing gradient problem, and its sparsity property can help with reducing overfitting.
- The ReLU function is easy to implement using NumPy, and its derivative can be computed analytically.

# 05.ELU Activation Function

- ELU function is similar to the ReLU function, the ELU function produces a negative value for negative inputs. because it guarantees that neurons are active despite negative inputs.
- The ELU function has a more complex mathematical form than the ReLU function, but it is still easy to implement using NumPy.

# 06.SELU Activation Function

- Activation functions known as SELUs, or scaled exponential linear units, cause self-normalization.
- The SELU function has a more complex mathematical form than the ReLU function or ELU function, but it is still easy to implement using NumPy.