Sigmoid function :
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https://dataaspirant.com/2017/03/07/difference-between-softmax-function-and-sigmoid-function/

In mathematical definition way of saying the sigmoid function take any range real number and returns the output value which falls in the range of **0 to 1.**
Based on the convention we can expect the output value in the range of **-1 to 1.**

The sigmoid function produces the curve which will be in the Shape **"S."**
These curves used in the statistics too. With the cumulative distribution function (The output will range from 0 to 1)

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The sigmoid function, also called the sigmoidal curve (von Seggern 2007, p. 148) or logistic function, is the function

$$y = \frac{1}{1 + e^{-x}}.$$

It has derivative

$$\begin{aligned} \frac{dy}{dx} &= [1 - y(x)]\, y(x) \\ &= \frac{e^{-x}}{(1 + e^{-x})^2} \\ &= \frac{e^{x}}{(1 + e^{x})^2} \end{aligned}$$

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# Required Python Package
import numpy as np

```
def sigmoid(inputs):
    """
    Calculate the sigmoid for the give inputs (array)
    :param inputs:
    :return:
    """
    sigmoid_scores = [1 / float(1 + np.exp(- x)) for x in inputs]
    return sigmoid_scores


sigmoid_inputs = [2, 3, 5, 6]
print "Sigmoid Function Output :: {}".format(sigmoid(sigmoid_inputs))
```

Output:

```
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Sigmoid Function Output :: [0.8807970779778823, 0.9525741268224334,
0.9933071490757153, 0.9975273768433653]
```

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