**Assignment No-01**

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**Title-** Activation functions that are being used in neural networks.

**Program:**

import numpy as np

import matplotlib.pyplot as plt

def sigmoid(x):

return 1 / (1 + np.exp(-x))

def relu(x):

return np.maximum(0, x)

def tanh(x):

return np.tanh(x)

def softmax(x):

return np.exp(x) / np.sum(np.exp(x))

x = np.linspace(-10, 10, 100)

axs[0, 0].plot(x, sigmoid(x))

axs[0, 0].set\_title('Sigmoid')

axs[0, 1].plot(x, relu(x))

axs[0, 1].set\_title('ReLU')

axs[1, 0].plot(x, tanh(x))

axs[1, 0].set\_title('Tanh')

axs[1, 1].plot(x, softmax(x))

axs[1, 1].set\_title('Softmax')

fig.suptitle('Common Activation Functions')

for ax in axs.flat:

ax.set(xlabel='x', ylabel='y')

plt.subplots\_adjust(left=0.1, bottom=0.1, right=0.9, top=0.9, wspace=0.4, hspace=0.4)

plt.show()

**Output:**

