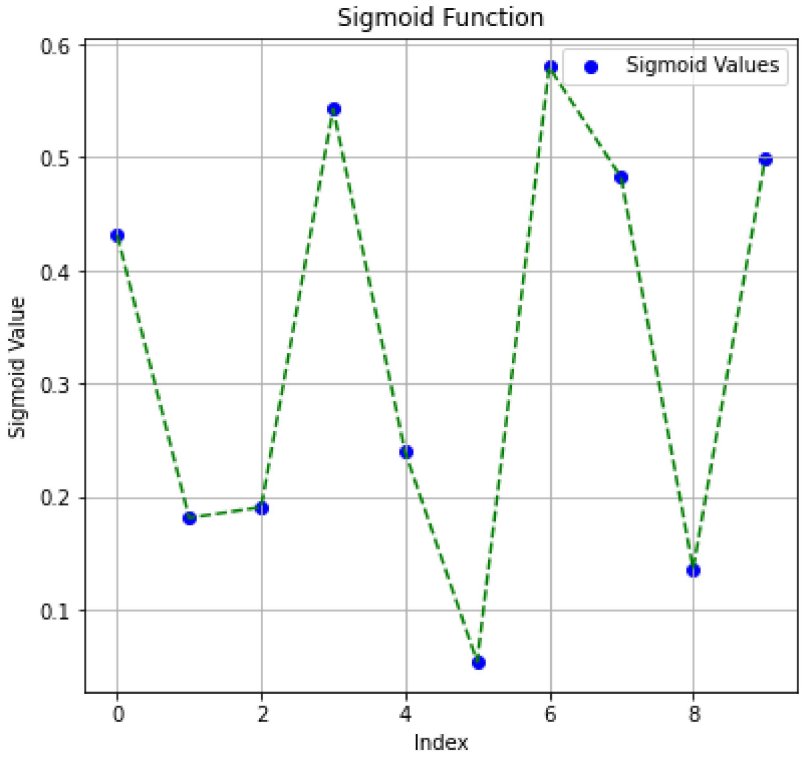
In [4]:
```
import numpy as np
import matplotlib.pyplot as plt
#define sigmoid function
def sigmoid(x):
    return 1/(1+np.exp(-x))
#define tanh function
def tanh(x):
    return np.tanh(x)
#generate random array of values using munpy
random_values=np.random.randn(10)
#calculate sigmoid and tanh of random values
sigmoid_values = sigmoid(random_values)
tanh_values = tanh(random_values)
print(sigmoid_values)
print(random_values)
```

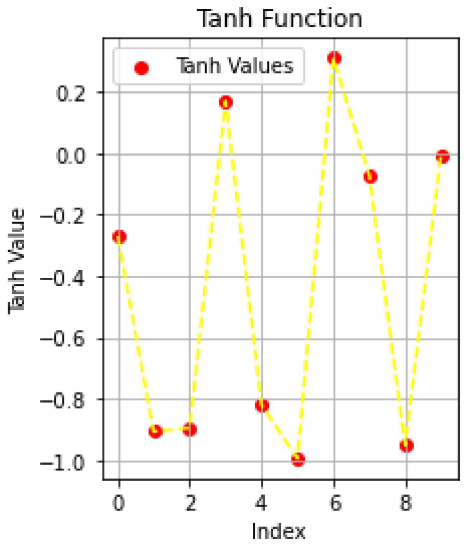
```
[0.43150928 0.18175232 0.19117111 0.54279187 0.23977171 0.05479598
 0.57961214 0.48221495 0.13660376 0.4986932 ]
[-0.27569599 -1.50452017 -1.44241852  0.17158723 -1.15393152 -2.84778389
  0.32118139 -0.07117024 -1.84378923 -0.00522723]
```

In [10]:
```
#generate indices for x-axis
indices=np.arange(len(random_values))
#plotting
#plot for sigmoid values
plt.figure(figsize=(14,6))
plt.subplot(1,2,1)
plt.scatter(indices,sigmoid_values,color='blue',label='Sigmoid Values')
plt.plot(indices,sigmoid_values,color='green',linestyle='--')
plt.title('Sigmoid Function')
plt.xlabel('Index')
plt.ylabel('Sigmoid Value')
plt.grid(True)
plt.legend()
```

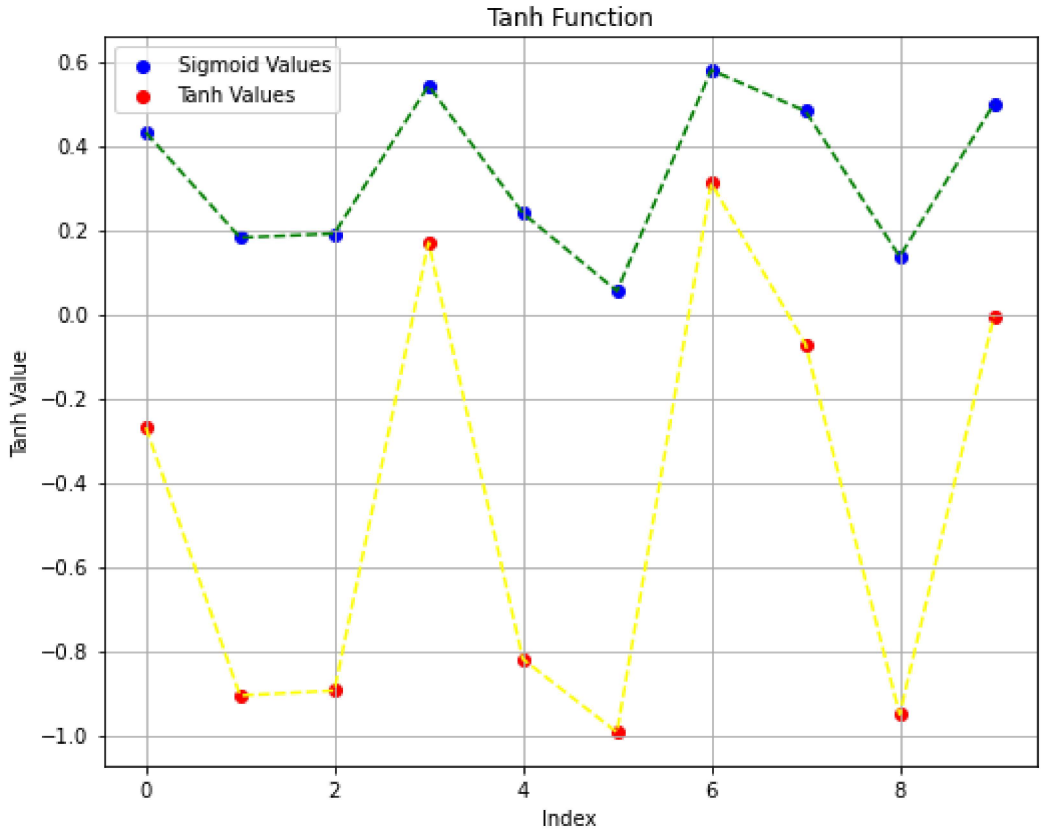
Out[10]: <matplotlib.legend.Legend at 0x1fc20c95e20>



In [12]:
```
#plot for tanh values
plt.subplot(1,2,1)
plt.scatter(indices,tanh_values,color='red',label='Tanh Values')
plt.plot(indices,tanh_values,color='yellow',linestyle='--')
plt.title('Tanh Function')
plt.xlabel('Index')
plt.ylabel('Tanh Value')
plt.grid(True)
plt.legend()
plt.tight_layout()
plt.show()
```



In [13]:
```
#generate indices for x-axis
indices=np.arange(len(random_values))
#plotting
#plot for sigmoid values
plt.figure(figsize=(14,6))
plt.subplot(1,2,1)
plt.scatter(indices,sigmoid_values,color='blue',label='Sigmoid Values')
plt.plot(indices,sigmoid_values,color='green',linestyle='--')
plt.title('Sigmoid Function')
plt.xlabel('Index')
plt.ylabel('Sigmoid Value')
plt.grid(True)
plt.legend()
#plot for tanh values
plt.subplot(1,2,1)
plt.scatter(indices,tanh_values,color='red',label='Tanh Values')
plt.plot(indices,tanh_values,color='yellow',linestyle='--')
plt.title('Tanh Function')
plt.xlabel('Index')
plt.ylabel('Tanh Value')
plt.grid(True)
plt.legend()
plt.tight_layout()
plt.show()
```



In [ ]: