CI Assignment - 3
Implementation of Neuro Fuzzy Inference System using Python

Aim:

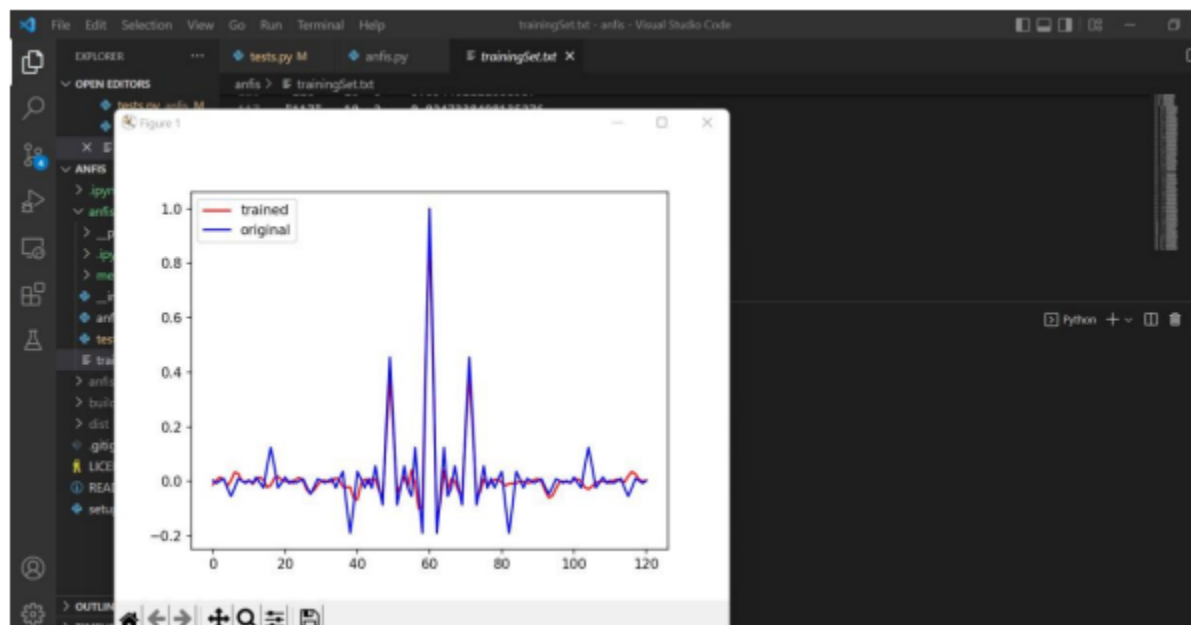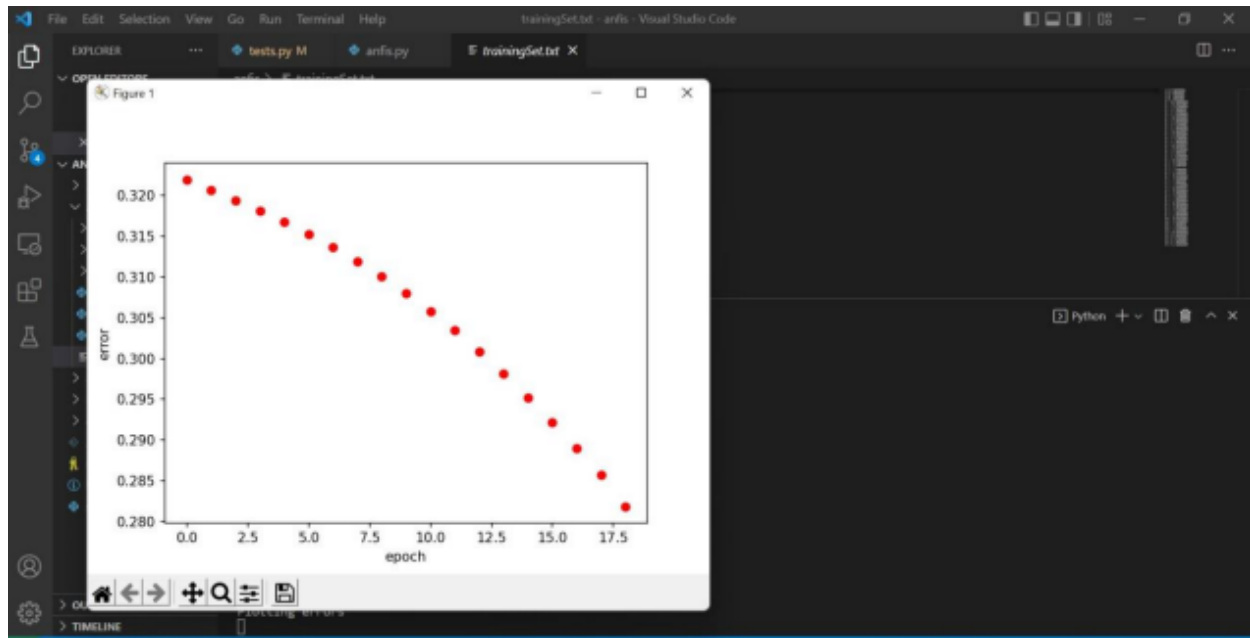To implement a Neuro Fuzzy Inference System using Python.

Test Code:

```python
import sys
import anfis
import numpy
import membership.mfDerivs
import membership.membershipfunction


# numpy.loadtxt('c:\\Python_fiddling\\myProject\\MF\\trainingSet.txt',usecols=[1,2,3])
ts = numpy.loadtxt("trainingSet.txt", usecols=[1, 2, 3])
X = ts[:, 0:2]
Y = ts[:, 2]

mf = [[['gaussmf', {'mean': 0., 'sigma': 1.}], ['gaussmf', {'mean': -1., 'sigma': 2.}],
['gaussmf', {'mean': -4., 'sigma': 10.}], ['gaussmf', {'mean': -7., 'sigma': 7.}]],
      [['gaussmf', {'mean': 1., 'sigma': 2.}], ['gaussmf', {'mean': 2., 'sigma': 3.}],
['gaussmf', {'mean': -2., 'sigma': 10.}], ['gaussmf', {'mean': -10.5, 'sigma': 5.}]]]


mfc = membership.membershipfunction.MemFuncs(mf)
anf = anfis.ANFIS(X, Y, mfc)
anf.trainHybridJangOffLine(epochs=20)
print(round(anf.consequents[-1][0], 6))
print(round(anf.consequents[-2][0], 6))
print(round(anf.fittedValues[9][0], 6))
if round(anf.consequents[-1][0], 6) == -5.275538 and round(anf.consequents[-2][0], 6) ==
-1.990703 and round(anf.fittedValues[9][0], 6) == 0.002249:
    print('test is good')

print("Plotting errors")
anf.plotErrors()
print("Plotting results")
anf.plotResults()
```

Result

Thus the Neuro Fuzzy Inference System has been implemented using Python

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