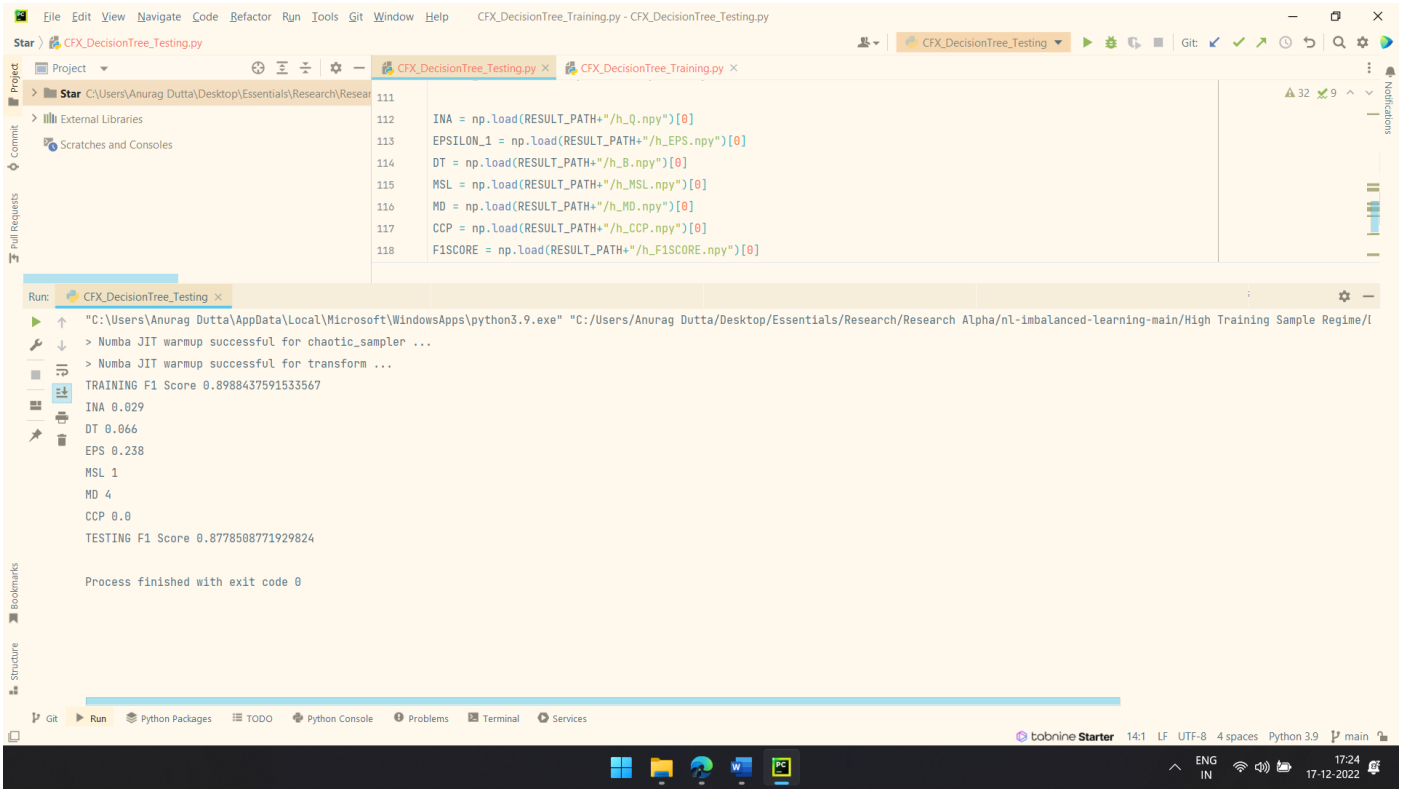
Results after Hyperparameter Tuning

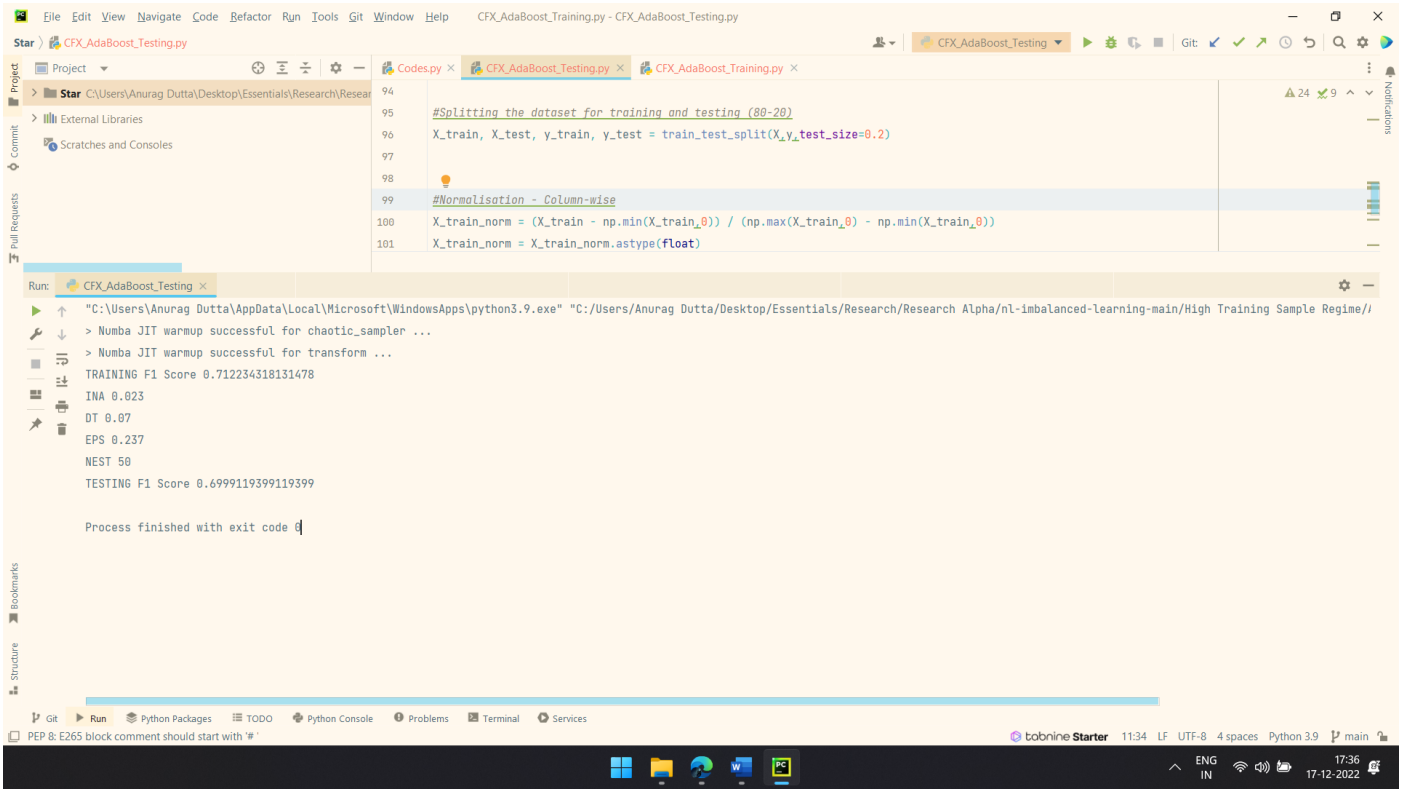
ChaosNet + Decision Tree




```
INITIAL_NEURAL_ACTIVITY = [0.029]
DISCRIMINATION_THRESHOLD = [0.066]
EPSILON = [0.238]
```

```
TRAINING F1 Score 0.8988437591533567
TESTING F1 Score 0.8778508771929824
```

ChaosNet + AdaBoost



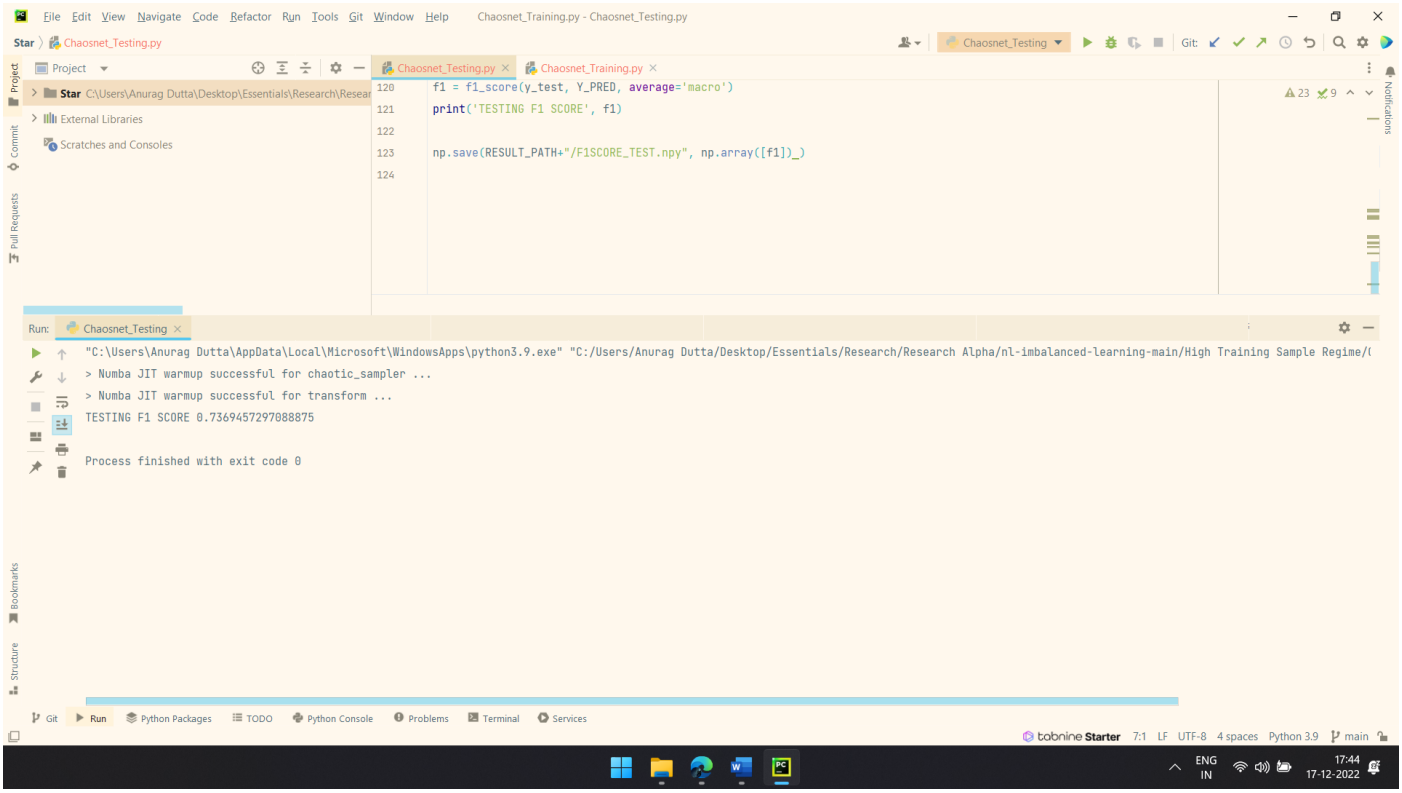
INITIAL_NEURAL_ACTIVITY = [0.023]

DISCRIMINATION_THRESHOLD = [0.070]

EPSILON = [0.237]

```
TRAINING F1 Score 0.712234318131478
TESTING F1 Score 0.6999119399119399
```

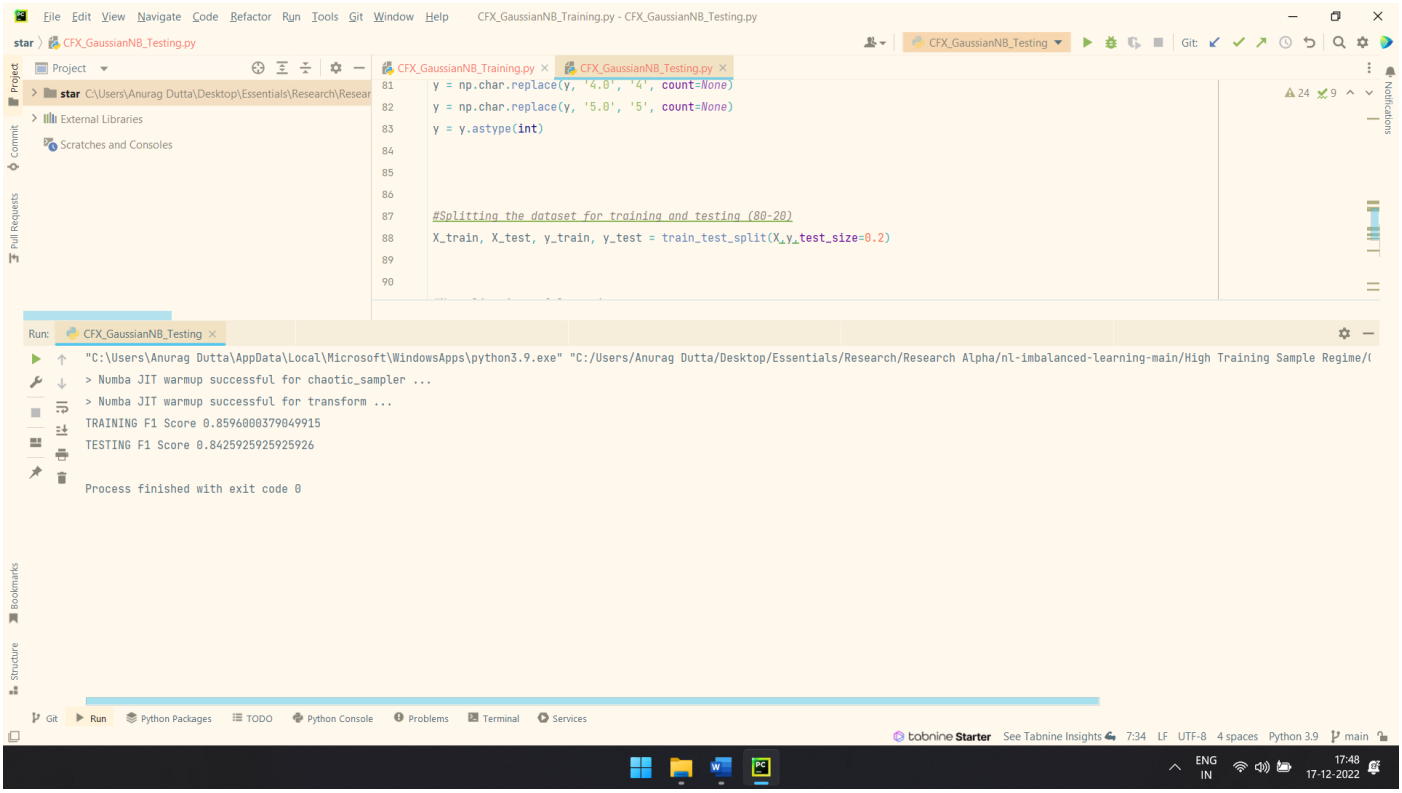
ChaosNet Standalone




```
INITIAL_NEURAL_ACTIVITY = [0.03]
DISCRIMINATION_THRESHOLD = [0.07]
EPSILON = [0.226]
```

```
TRAINING F1 Score 0.7778545471767979
TESTING F1 SCORE 0.7369457297088875
```

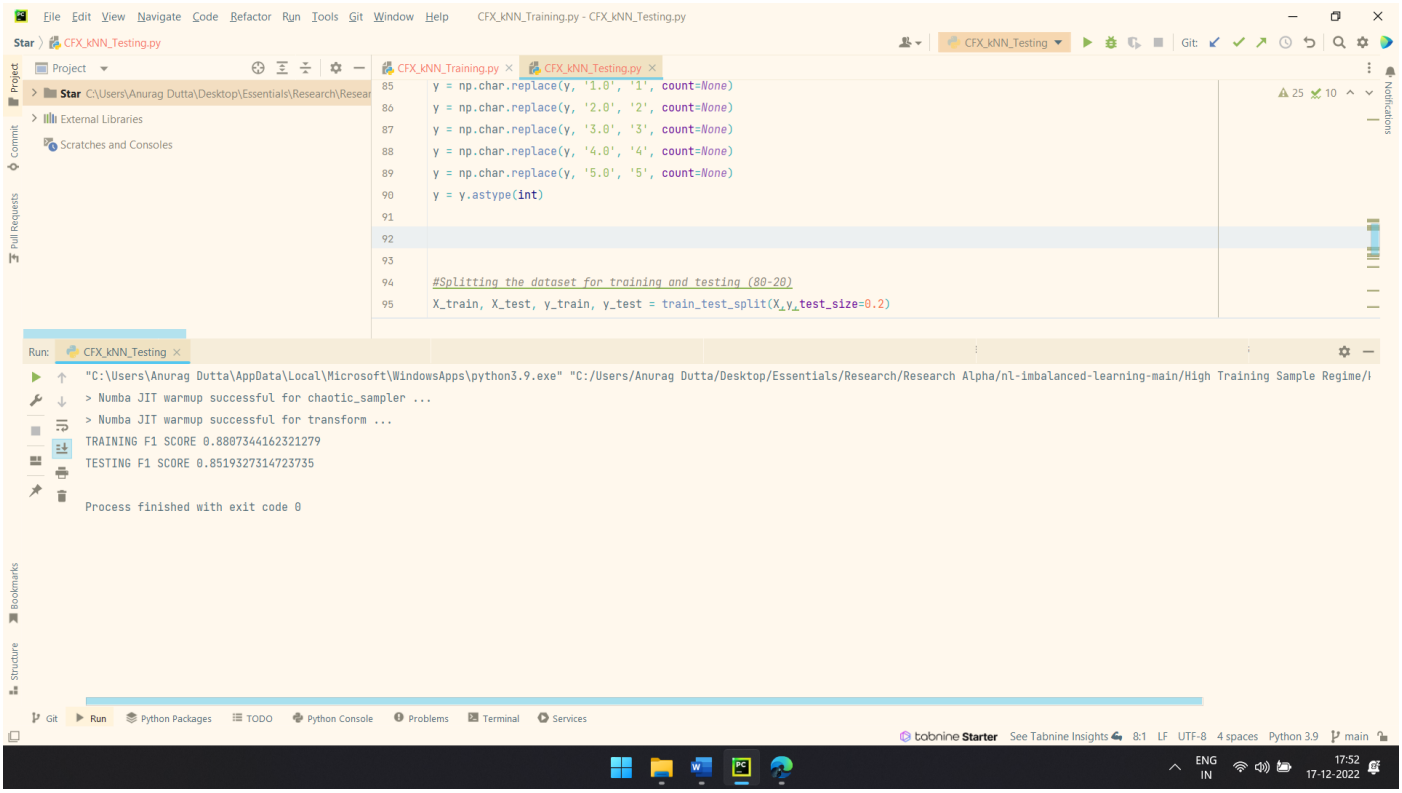
ChaosNet + Gaussian Naïve Bayes




```
INITIAL_NEURAL_ACTIVITY = [0.03]
DISCRIMINATION_THRESHOLD = [0.07]
EPSILON = [0.228]
```

```
TRAINING F1 Score 0.8596000379049915
TESTING F1 Score 0.8425925925925926
```

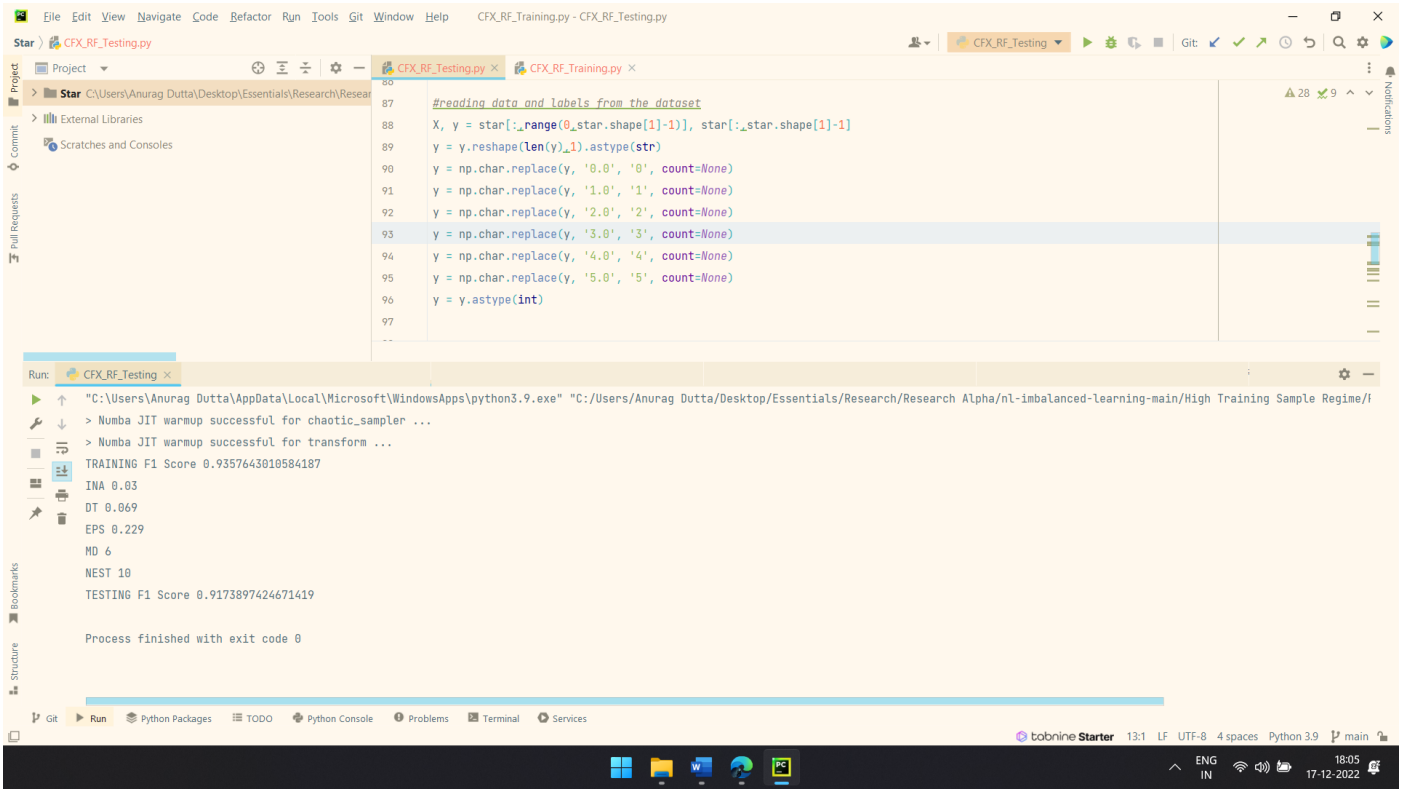
ChaosNet + k – Nearest Neighbors




```
INITIAL_NEURAL_ACTIVITY = [0.029]
DISCRIMINATION_THRESHOLD = [0.070]
EPSILON = [0.213]
```

```
TRAINING F1 SCORE 0.8807344162321279
TESTING F1 SCORE 0.8519327314723735
```

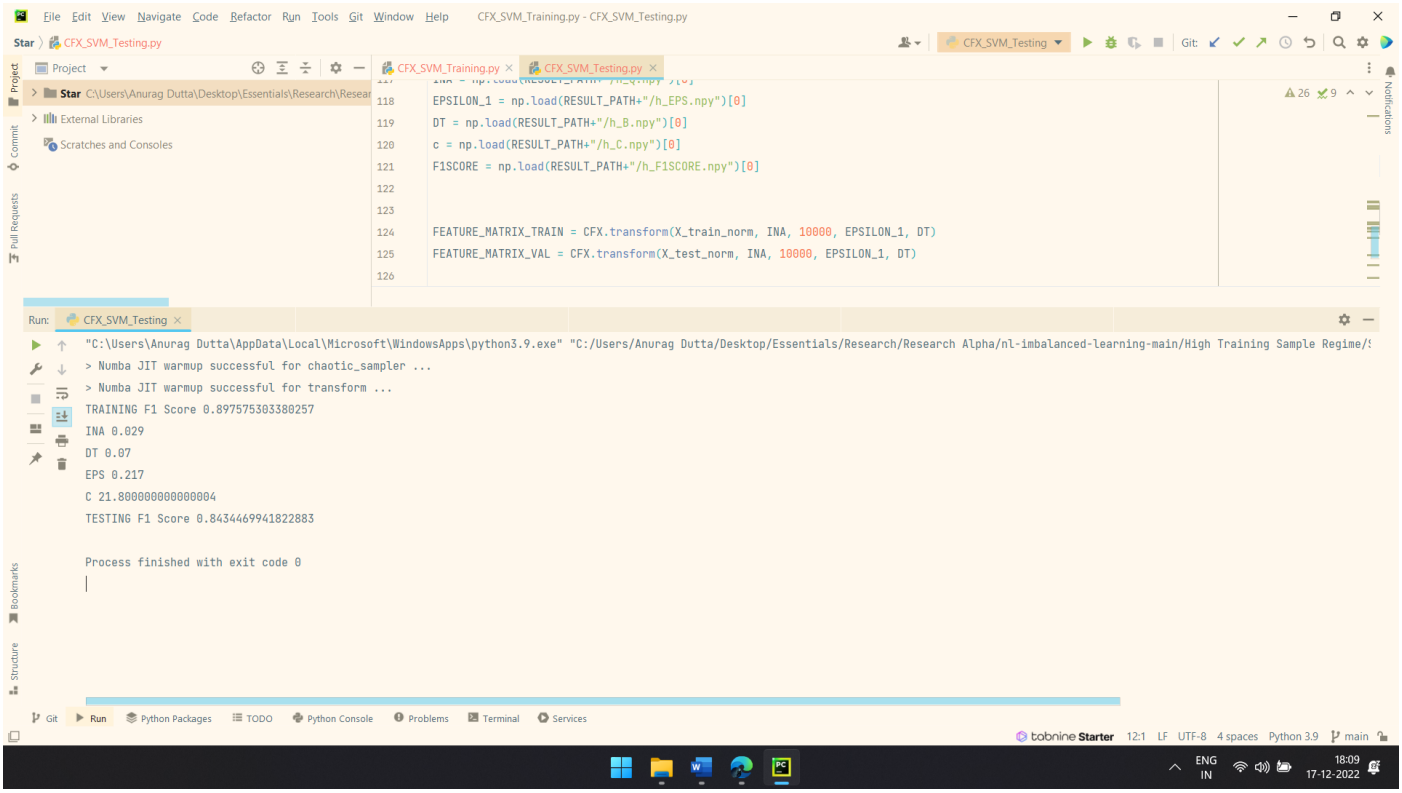
ChaosNet + Random Forest




```
INITIAL_NEURAL_ACTIVITY = [0.030]
DISCRIMINATION_THRESHOLD = [0.069]
EPSILON = [0.229]
```

```
TRAINING F1 Score 0.9357643010584187
TESTING F1 Score 0.9173897424671419
```

ChaosNet + Support Vector Machine




```
INITIAL_NEURAL_ACTIVITY = [0.029]
DISCRIMINATION_THRESHOLD = [0.066]
EPSILON = [0.217]
```

```
TRAINING F1 Score 0.897575303380257
TESTING F1 Score 0.8434469941822883
```