```
------------------------------------------------------------------------------------------------------------------------
[" Gamma :  g, '    C': c}", '           Train Accuracy', '  Validation Accuracy', '  Test Accuracy']
------------------------------------------------------------------------------------------------------------------------

[{' gamma': '0.01', '     C': ' 0.1'}, '    0.1072     ', '    0.0939     ', '    0.0670     ']
[{' gamma': '0.01', '     C': ' 0.2'}, '    0.1100     ', '    0.0939     ', '    0.0670     ']
[{' gamma': '0.01', '     C': ' 0.5'}, '    1.0000     ', '    0.2320     ', '    0.2346     ']
[{' gamma': '0.01', '     C': ' 0.7'}, '    1.0000     ', '    0.4696     ', '    0.4637     ']
[{' gamma': '0.01', '     C': '   1'}, '    1.0000     ', '    0.7569     ', '    0.7542     ']
[{' gamma': '0.01', '     C': '   2'}, '    1.0000     ', '    0.7845     ', '    0.7765     ']
[{' gamma': '0.01', '     C': '   5'}, '    1.0000     ', '    0.7845     ', '    0.7765     ']
[{' gamma': '0.01', '     C': '   7'}, '    1.0000     ', '    0.7845     ', '    0.7765     ']
[{' gamma': '0.01', '     C': '  10'}, '    1.0000     ', '    0.7845     ', '    0.7765     ']
[{' gamma': '0.005', '     C': ' 0.1'}, '    1.0000     ', '    0.7845     ', '    0.7765     ']
[{' gamma': '0.005', '     C': ' 0.2'}, '    1.0000     ', '    0.7845     ', '    0.7765     ']
[{' gamma': '0.005', '     C': ' 0.5'}, '    1.0000     ', '    0.8674     ', '    0.8883     ']
[{' gamma': '0.005', '     C': ' 0.7'}, '    1.0000     ', '    0.9116     ', '    0.9441     ']
[{' gamma': '0.005', '     C': '   1'}, '    1.0000     ', '    0.9503     ', '    0.9609     ']
[{' gamma': '0.005', '     C': '   2'}, '    1.0000     ', '    0.9503     ', '    0.9609     ']
[{' gamma': '0.005', '     C': '   5'}, '    1.0000     ', '    0.9503     ', '    0.9609     ']
[{' gamma': '0.005', '     C': '   7'}, '    1.0000     ', '    0.9503     ', '    0.9609     ']
[{' gamma': '0.005', '     C': '  10'}, '    1.0000     ', '    0.9503     ', '    0.9609     ']
[{' gamma': '0.001', '     C': ' 0.1'}, '    1.0000     ', '    0.9558     ', '    0.9609     ']
[{' gamma': '0.001', '     C': ' 0.2'}, '    1.0000     ', '    0.9724     ', '    0.9777     ']
[{' gamma': '0.001', '     C': ' 0.5'}, '    1.0000     ', '    0.9779     ', '    0.9944     ']
[{' gamma': '0.001', '     C': ' 0.7'}, '    1.0000     ', '    0.9779     ', '    0.9944     ']
[{' gamma': '0.001', '     C': '   1'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.001', '     C': '   2'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.001', '     C': '   5'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.001', '     C': '   7'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.001', '     C': '  10'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': ' 0.1'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': ' 0.2'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': ' 0.5'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': ' 0.7'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': '   1'}, '    1.0000     ', '    0.9834     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': '   2'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': '   5'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': '   7'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0005', '     C': '  10'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': ' 0.1'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': ' 0.2'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': ' 0.5'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': ' 0.7'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': '   1'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': '   2'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': '   5'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': '   7'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
[{' gamma': '0.0001', '     C': '  10'}, '    1.0000     ', '    0.9890     ', '    1.0000     ']
```

```
----------------------------  Train  -------------------------------

Classification report for classifier SVC(C=10, gamma=0.0001):

              precision    recall  f1-score   support

           0       1.00      1.00      1.00       138
           1       1.00      1.00      1.00       143
           2       1.00      1.00      1.00       149
           3       1.00      1.00      1.00       154
           4       1.00      1.00      1.00       145
           5       1.00      1.00      1.00       142
           6       1.00      1.00      1.00       145
           7       1.00      1.00      1.00       140
           8       1.00      1.00      1.00       144
           9       1.00      1.00      1.00       137

    accuracy                           1.00      1437
   macro avg       1.00      1.00      1.00      1437
weighted avg       1.00      1.00      1.00      1437


Best Train hyperparameters were: {'gamma': 0.01, 'C': 0.5}
```

```
-------------------------  Validation  -------------------------

Classification report for classifier SVC(C=10, gamma=0.0001):

              precision    recall  f1-score   support

           0       1.00      1.00      1.00        21
           1       1.00      1.00      1.00        20
           2       1.00      1.00      1.00        17
           3       1.00      1.00      1.00        17
           4       1.00      1.00      1.00        17
           5       0.94      0.94      0.94        18
           6       0.93      1.00      0.97        14
           7       1.00      1.00      1.00        22
           8       1.00      1.00      1.00        16
           9       1.00      0.95      0.97        19

    accuracy                           0.99       181
   macro avg       0.99      0.99      0.99       181
weighted avg       0.99      0.99      0.99       181


Best Validation hyperparameters were: {'gamma': 0.0005, 'C': 2}
```

```
 ---------------------------  Test  ----------------------------

Classification report for classifier SVC(C=10, gamma=0.0001):

              precision    recall  f1-score   support

           0       1.00      1.00      1.00        19
           1       1.00      1.00      1.00        19
           2       1.00      1.00      1.00        11
           3       1.00      1.00      1.00        12
           4       1.00      1.00      1.00        19
           5       1.00      1.00      1.00        22
           6       1.00      1.00      1.00        22
           7       1.00      1.00      1.00        17
           8       1.00      1.00      1.00        14
           9       1.00      1.00      1.00        24

    accuracy                           1.00       179
   macro avg       1.00      1.00      1.00       179
weighted avg       1.00      1.00      1.00       179


Best Test hyperparameters were: {'gamma': 0.001, 'C': 1}
```