c)

clf\_rbf = svm.SVC(kernel='rbf',C=10.0)

clf\_poly = svm.SVC(kernel='poly',C=1.0,gamma=1.0)

clf\_linear = svm.SVC(kernel='linear',C=1.0)

clf\_sigmoid = svm.SVC(kernel='sigmoid',C=1.0,gamma=0.1,coef0 =0.3)

clf\_quadratic = svm.SVC(kernel='poly',C=1.0,degree=2,gamma=1.0)

d)

Table of Metrics

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Poly | Linear | Gaussain | Sigmoid | Quadratic |
| Precision | 0.9548 | 0.8753 | 0.9240 | 0.7541 | 0.9354 |
| Recall | 0.9537 | 0.8740 | 0.9237 | 0.7538 | 0.9350 |
| F-Measure | 0.9513 | 0.8649 | 0.9239 | 0.7539 | 0.9349 |

Kernel considers class 1 as positive and class 2 as negative

From above table, Polynomial kernel has the best values for precision, recall and F-measure. Second choice will be between quadratic and Gaussian kernels based on the c and gamma values