Support Vector Machine

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1) Precision, recall and f1-score

a) Linear

	precision	recall	f1-score	support
Iris-setosa	1.00	1.00	1.00	10
Iris-versicolor	1.00	0.86	0.92	7
Iris-virginica	0.93	1.00	0.96	13
accuracy			0.97	30
macro avg	0.98	0.95	0.96	30
weighted avg	0.97	0.97	0.97	30

b) RBF

	precision	recall	f1-score	support
Iris-setosa	1.00	0.45	0.62	11
Iris-versicolor	1.00	0.27	0.43	11
Iris-virginica	0.36	1.00	0.53	8
accuracy			0.53	30
macro avg	0.79	0.58	0.53	30
weighted avg	0.83	0.53	0.53	30

c) Polynomial

	precision	recall	f1-score	support
Iris-setosa	1.00	1.00	1.00	12
Iris-versicolor	1.00	0.89	0.94	9
Iris-virginica	0.90	1.00	0.95	9
accuracy			0.97	30
macro avg	0.97	0.96	0.96	30
weighted avg	0.97	0.97	0.97	30

d) Sigmoid

	precision	recall	f1-score	support
Iris-setosa	0.00	0.00	0.00	10
Iris-versicolor	0.30	1.00	0.46	9
Iris-virginica	0.00	0.00	0.00	11
accuracy			0.30	30
macro avg	0.10	0.33	0.15	30
weighted avg	0.09	0.30	0.14	30

2) Optimizing the coefficient

a) RBF (Gamma = 1/4)

	precision	recall	f1-score	support
Iris-setosa	1.00	1.00	1.00	11
Iris-versicolor	1.00	1.00	1.00	7
Iris-virginica	1.00	1.00	1.00	12
accuracy			1.00	30
macro avg	1.00	1.00	1.00	30
weighted avg	1.00	1.00	1.00	30

b) Polynomial (degree = 10)

	precision	recall	f1-score	support
Iris-setosa	1.00	1.00	1.00	10
Iris-versicolor	1.00	1.00	1.00	8
Iris-virginica	1.00	1.00	1.00	12
accuracy			1.00	30
macro avg	1.00	1.00	1.00	30
weighted avg	1.00	1.00	1.00	30