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**Assignment:** 5

# Methodology

Used C-Support Vector Classification(SVC) of Support Vector Machine under “sklearn” library in Python. By the help of various parameters such as gamma(specifying the kernel coefficient) set to “auto”, degree(for the polynomial functions), probability(whether to include the probability estimates) set to “False” and tolerance(stopping criteria for learning) set to “1e-3”, the accuracies for different values of C(parameter for penalizing error) are being analyzed.

So three kernel functions are being tested for Spam Classification with the parameters “gamma”, “probability” and “tolerance” set to their default values as state above:

* Linear kernel: kernel=”Linear”degree is set to 1 by default
* Quadratic kernel:

Kernet=’rbf’

1 0.9319333816075308

2 0.9348298334540188

3 0.9370021723388848

4 0.9377262853005068

5 0.9377262853005068

6 0.9348298334540188

7 0.9355539464156408

8 0.9355539464156408

9 0.9341057204923968

10 0.9348298334540188

Kernet=’linear’

45 0.9217958001448225

46 0.9217958001448225

47 0.9217958001448225

48 0.9217958001448225

49 0.9225199131064445

50 0.9225199131064445

51 0.9217958001448225

52 0.9217958001448225

53 0.9217958001448225

54 0.9203475742215785

Kernet=’poly’

33 0.9217958001448225

34 0.9217958001448225

35 0.9225199131064445

36 0.9232440260680667

37 0.9232440260680667

38 0.9232440260680667

39 0.9225199131064445

40 0.9217958001448225

41 0.9217958001448225

42 0.9203475742215785