SVM - Support Vector Machine

THEORY

1) It is a machine learning algorithm under supervised learning which can be used for both regression and classification tasks. It provides significant acccuracy compared to computation power it requires.
2) Our aim is to draw a hyperplane such that all points of one category are in one side of hyperplane and of other categories on other sides, that means:

$$w^T x + b \geq 1 \forall x \in C_1 \tag{1}$$

$$w^T x + b \leq -1 \forall x \in C_2 \tag{2}$$

3) The loss function for SVM is:

$$c(x, y, f(x)) = \begin{cases} 0, & y * f(x) \geq 1 \\ 1 - y * f(x), & otherwise \end{cases}$$

QUIZ

1) Advantages of SVM?
2) Disadvantages of SVM?

ANSWER

1) SVM is effective in high dimensional spaces & is relatively memory efficient.
2) SVM algorithm is not suitable for large data sets, also doesn't work well if target classes are overlapping.