SVM

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Recap and Today
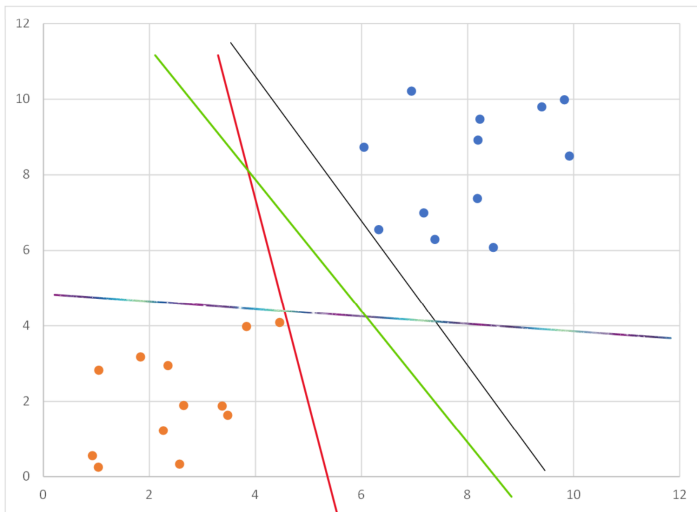
- Gradient Descent
- SVM

Support Vector Machine - Introduction
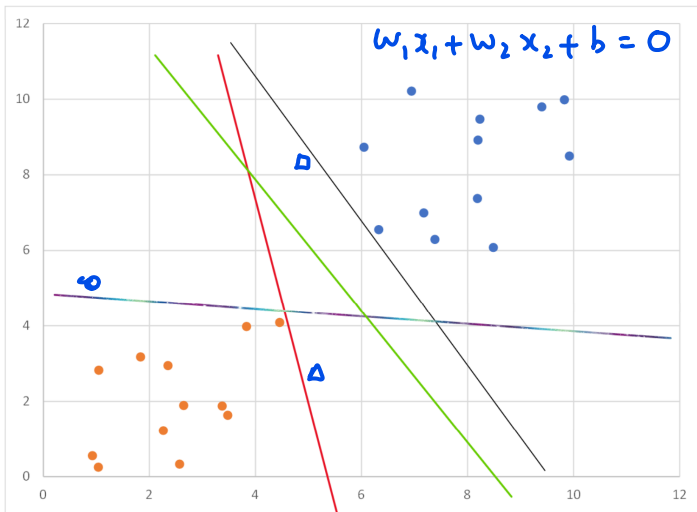
- Supervised Learning Algorithm for Classification
- Given N training points in which n_1 are of type A, n_2 are of type B, draw the **best** line(plane)
- To begin with, assume that the training points are linearly separable

$$w_1 x_1 + w_2 x_2 + b = 0$$
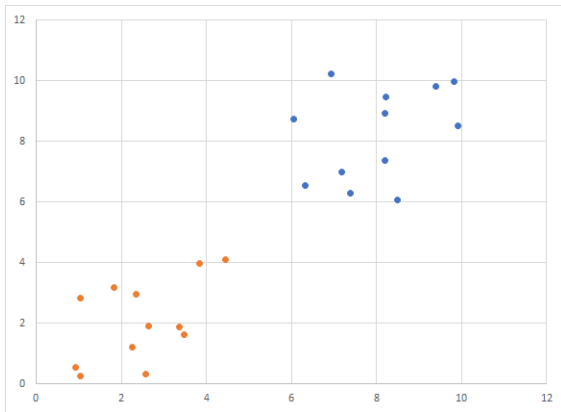
What makes us think it is the green line? Can we make the ideas a bit more precise?

Let the data-set be denoted as -

S.No	X_1	X_2	Y ($+1$ or -1)
1	x_{11}	x_{12}	$+1$
2	x_{21}	x_{22}	-1
3	x_{31}	x_{32}	-1
.	.	.	.
.	.	.	.
.	.	.	.
N	x_{N1}	x_{N2}	$+1$

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.	.	.	.
.	.	.	.
N	x_{N1}	x_{N2}	+1

Let the equation of the line be $w_1 x_1 + w_2 x_2 + b = 0$
We need to determine w_1, w_2 and b

Thank you for your attention