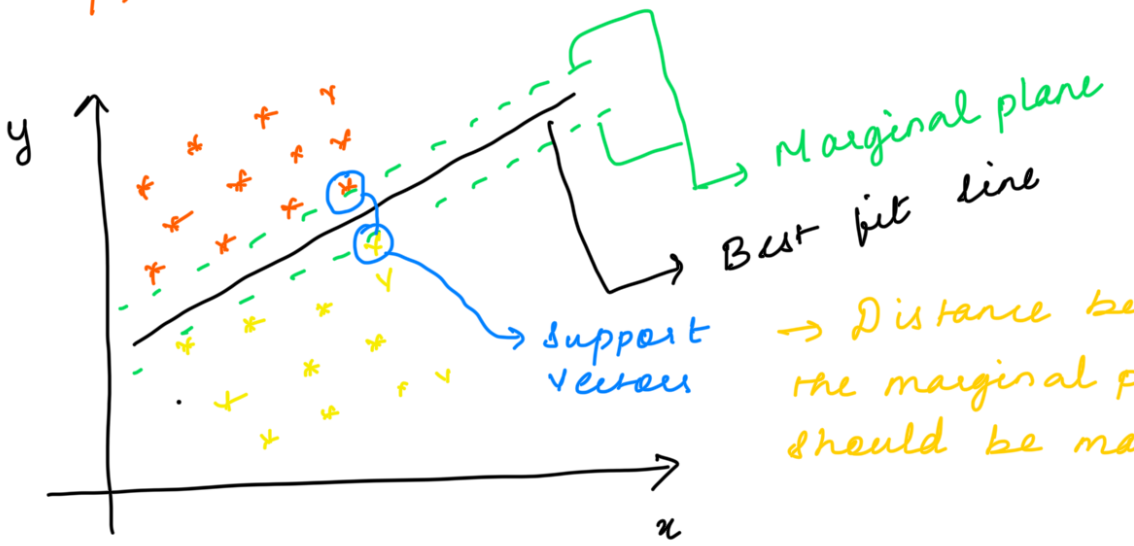
Support Vector Machines (SVM) ML Algorithm

① SVC → Support Vector classifier

② SVR → Support Vector Regression

① Support Vector Machine (SVC)



→ Distance between the marginal plane should be maximum

We select the best fit line along with the marginal plane for classification.

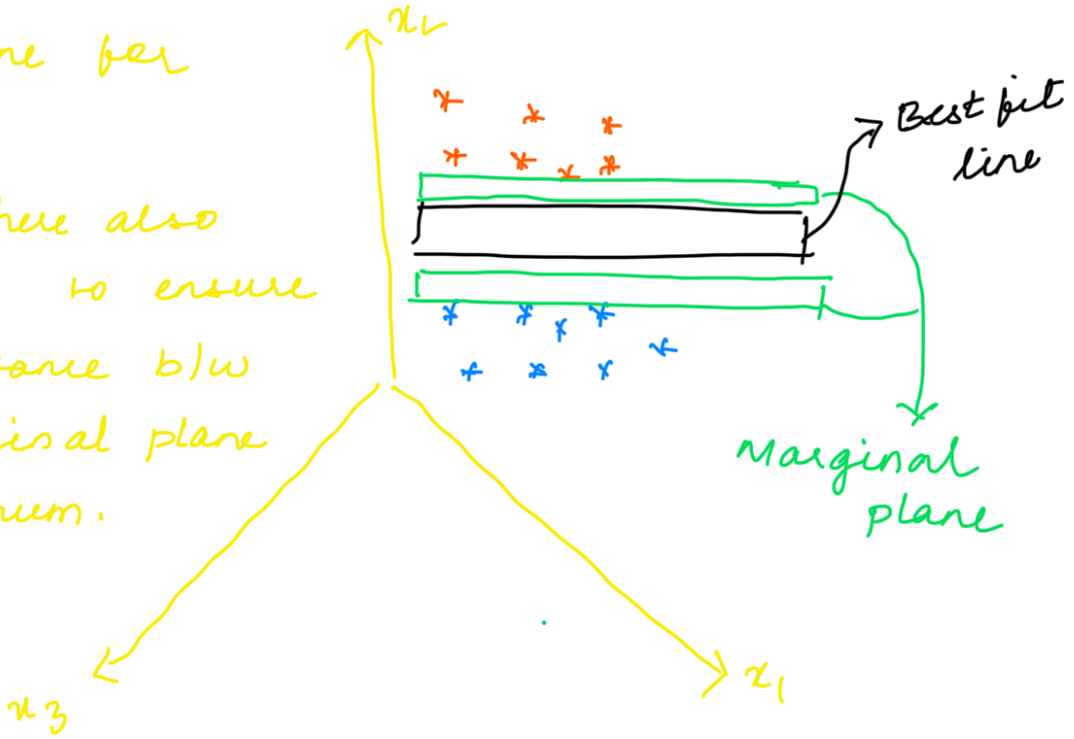
The data points that are close to the marginal plane is called as support vectors.

→ The main aim of support vector machine is that to create a best fit line along with that we will be creating the marginal plane where as we can classify

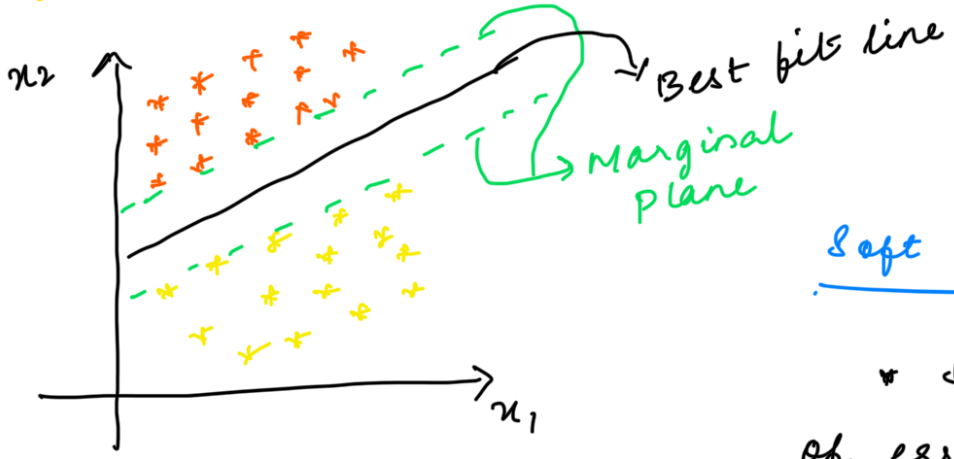
the points clearly.

Lets consider the 3D plane for example.

→ here also we need to ensure that distance b/w the marginal plane is maximum.



Soft Margin and Hard Margin in SVM



Soft Margin

* Some amount of errors always will be there.

Hard Margin

* We dont get errors on the hard margin. which means data points are

clearly seperable on the
marginal plane.