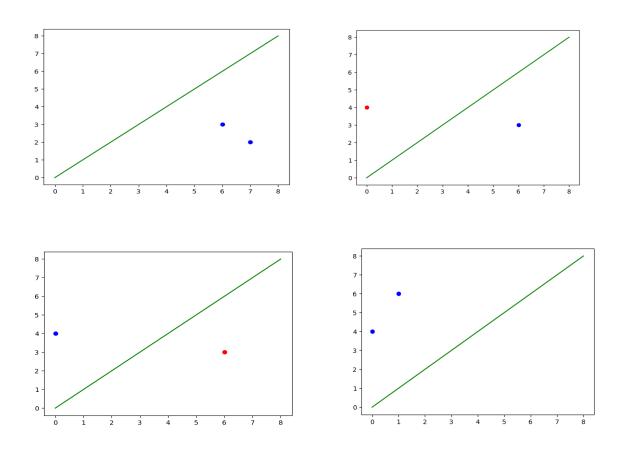
h(x)=1, if a<x<b

h(x) = -1, otherwise

We take two points, m and n. For these two points, there can be 2^2 distinct labels in binary classification. We list these cases as follows:

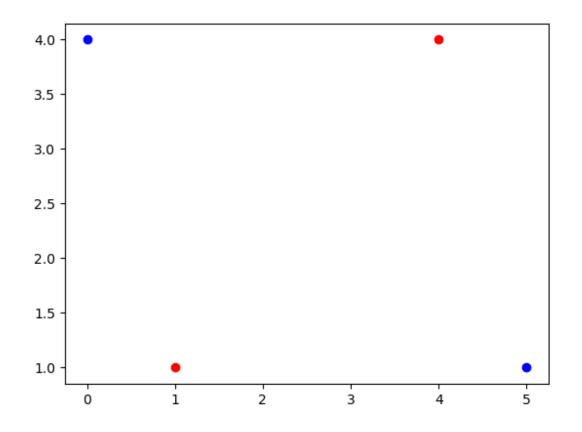
h(m)=-1; h(n)=-1 h(m)=-1; h(n)=1 h(m)=1; h(n)=-1 h(m)=1; h(n)=1

We can observe that for all the possible labelling variations of mm and nn. The model can divide the points into two segments.



This is where we can claim that our model successfully shattered two points in the dataset. Consequently, the VC dimension for this model is 2 (for now). Similar to the testing above, the modal also works on three points, which bumps our VC dimension to 3.

However, when we reach four points, we run into an issue. Specifically, in cases like these:



There is no possible division through hyperplane in the plot above that can distinctly classify these points. Consequently, we can say that our shattering iteration failed, and our VC dimension is 3.