

Task

- ☒ How many hyperplanes
- ☒ How many per $P(c|x)$
- ☒ Explain

To perform binary regression, we need to find one hyper-plane.

Why? The single hyper-plane is all that is necessary to explore the relationship between the two variables in the binary regression.

This means to perform a multi-class regression we need to find $N-1$ hyper-planes.

Why? The $N-1$ hyper-planes are allows us to explore the relationship between the N variables in the multi-class regression.

For our $P(c|x)$ equation, to perform the multi-class regression we will need to find $C-1$ hyper-planes.

Why? In the multi-class regression of $P(c|x)$ our Y has/ consists of C variables: therefore requiring $C-1$ hyper-planes to explore that relationship.