# Assignment - Perceptron
## Name: Rushi Vyas
## Roll no. : MIT2019103

**How to verify trained algorithms?**

Generally we have training data on which the algorithm/model is trained and a seperate testing data on which it is tested. We consider the tested data as previously unseen data by the algorithm so that we can verify if it can work on real life problems

But in our case, we have only 4 rows of input. So we cannot separate the train and test data as our size of data is too small. Also there are no unseen data possible as all the possibilities are covered in these 4 rows.

To verify our algorithm, we will test it on the train data itself. If it gives correct prediction for all inputs, then it is trained perfectly.

**Overview of code**

We have taken a bias input along with the 2 inputs.
We will continue training until the algorithm gives correct prediction for all rows.
The learning rate is 0.3
All weights are assigned randomly in range [-0.5 , 0.5]
The activation function used is step function i.e 1 if x > 0, else 0. It is hard margin.

**How to run:**

Run the code on cmd/terminal as python <filename>.

The output will be the name of the Logic Gate, number of epochs it took, testing on inputs.