

## Perceptron Homework

For this assignment you will walk-through one epoch of training in a perceptron.

- Assume a 3 input perceptron plus bias (bias input = 1)
- For an activation function assume that the perceptron outputs 1 if Net > 0, else 0
- Assume a learning rate  $c$  of 1 and initial weights all 1
- The update rule is  $w_i' = w_i + \Delta w_i$  where  $\Delta w_i = c(t - z) x_i$
- Show weights after each pattern for just one epoch (one time through the dataset) including the final updated weights after the epoch is finished
- Training set

1 0 1 -> 0

1 1 0 -> 0

1 0 1 -> 1

0 1 1 -> 1

<u>Pattern</u>	<u>Target</u>	<u>Weight Vector</u>	<u>Net</u>	<u>Output</u>	<u><math>\Delta W</math></u>
		1 1 1 1			