Binary Classification Notation

(x, y) $\quad x \in \mathbb{R}^{n_x}$, $y \in \{0, 1\}$

m training examples: $\{(x^1, y^1), (x^2, y^2), \ldots (x^m, y^m)\}$

$m \Rightarrow m_{Train} + m_{Test}$

$$X = \begin{bmatrix} | & | & | & & | \\ x^1 & x^2 & x^3 & \cdots & x^m \\ | & | & | & & | \end{bmatrix} \qquad X \in \mathbb{R}^{n_x \times m}$$

$X.shape = (n_x, m)$

$$Y = \begin{bmatrix} y^1, y^2, & \cdots y^m \end{bmatrix} \qquad Y \in \mathbb{R}^{1 \times m}$$

$Y.shape = (1, m)$