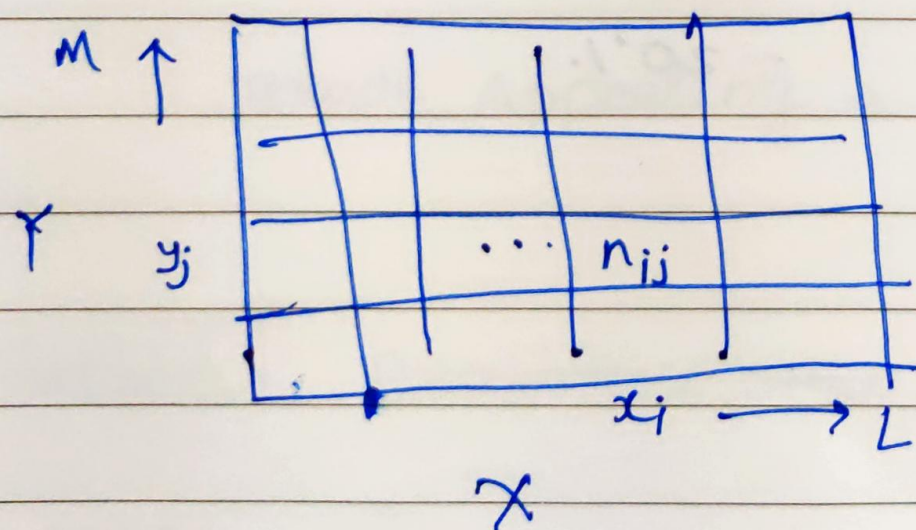- go through self evaluation test.
- go review the topics from canvas
- slack workplace - make sure I am added
- Can be included in masters portfolio.

To do- A project to recognize hand written digits

- Hand Written Digits -

$$\frac{4}{10} \times \frac{2}{8} + \frac{6^2}{10} \times \frac{3}{92}$$

$$\frac{2}{20} + \frac{9}{20} = \frac{11}{20}.$$

$$P(X=x_i, Y=y_j) = \frac{n_{ij}}{N} \quad \text{joint}$$

$$P(X=x_i) = \frac{c_i}{N} \longrightarrow \text{marginal}$$

$$P(Y=y_j \mid X=x_i) = \frac{n_{ij}}{c_i}$$

conditional

Sum Rule –

$$P(X) = \sum_{Y} P(X, Y)$$

$$P(x = x_i) = \frac{c_i}{N} = \frac{\sum_j n_{ij}}{N} = \sum_j P(x = x_i, Y = y_j)$$

Product Rule –

$$P(x, Y) = P(x | Y) \cdot P(Y)$$

$$n_{ij}/N = n_{ij}/c_i \times c_i/N$$

Bayes Theorem (Must)