Some notation

σ variance sigma

$$\mu_{ij} = \beta_0 + \beta_1 x_{ij} + \epsilon_j$$

$$\epsilon_j \sim \text{normal}(0, \sigma^2)$$

$$y_{ij} \sim \text{normal}(\mu_{ij}, \sigma^2)$$

is the same as:

$$\mu_{ij} = \alpha_j + \beta_1 x_{ij}$$

$$\alpha_j \sim \text{normal}(\mu_\alpha, \sigma^2)$$

$$y_{ij} \sim \text{normal}(\mu_{ij}, \sigma^2)$$