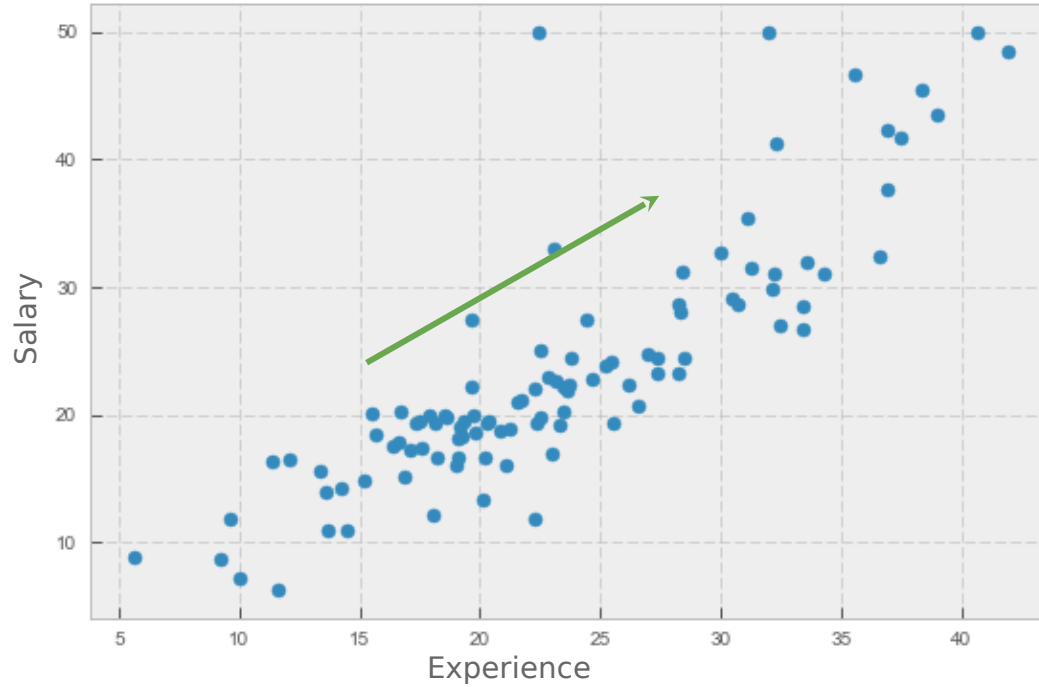


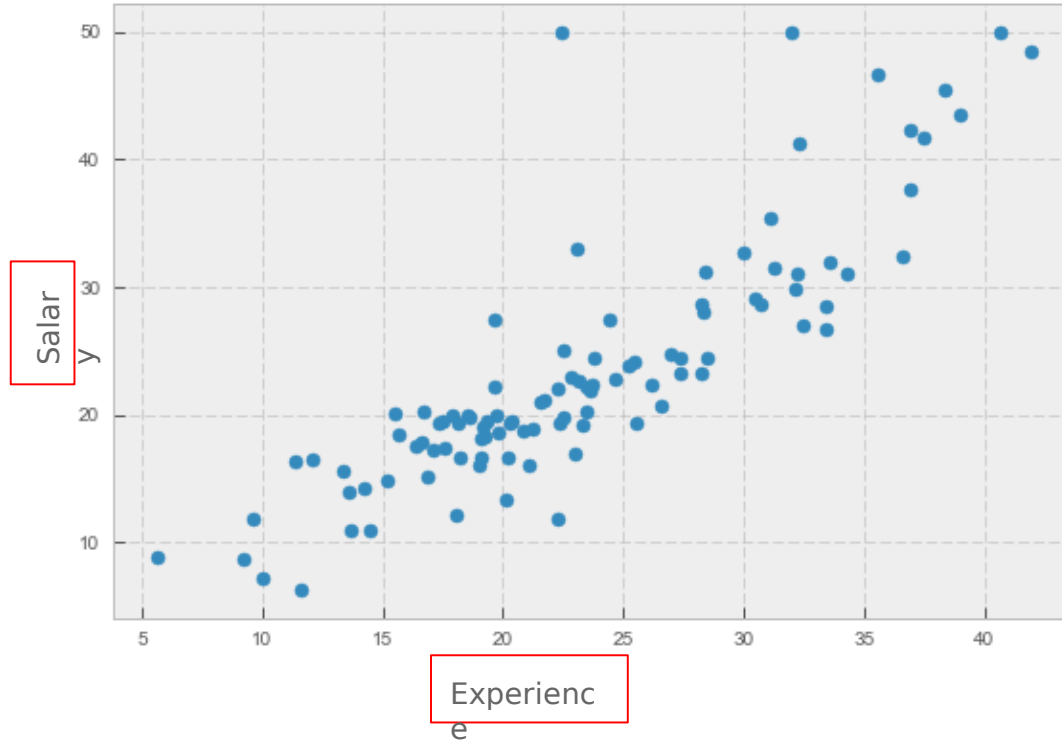
# Linear Models

# Linear Models

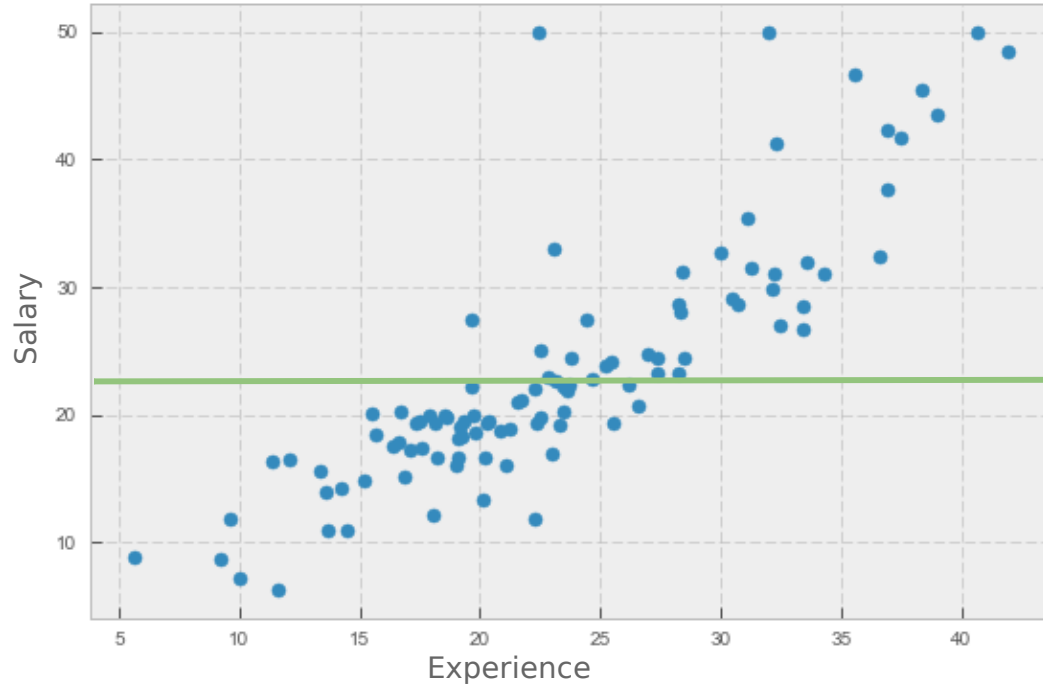
# Linear Models



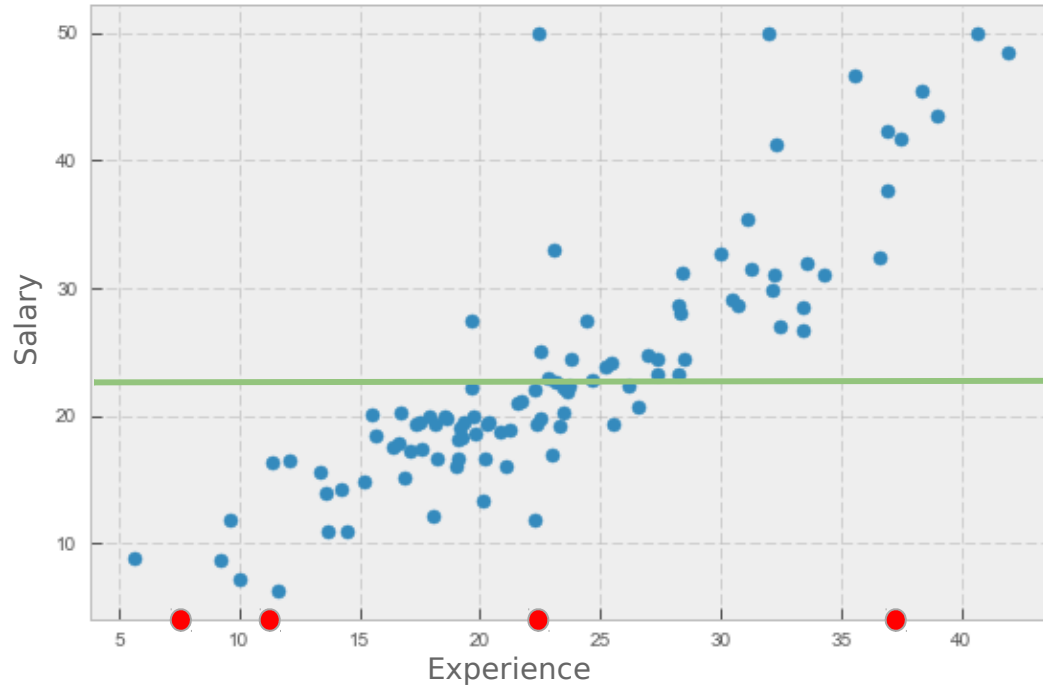
# Linear Models



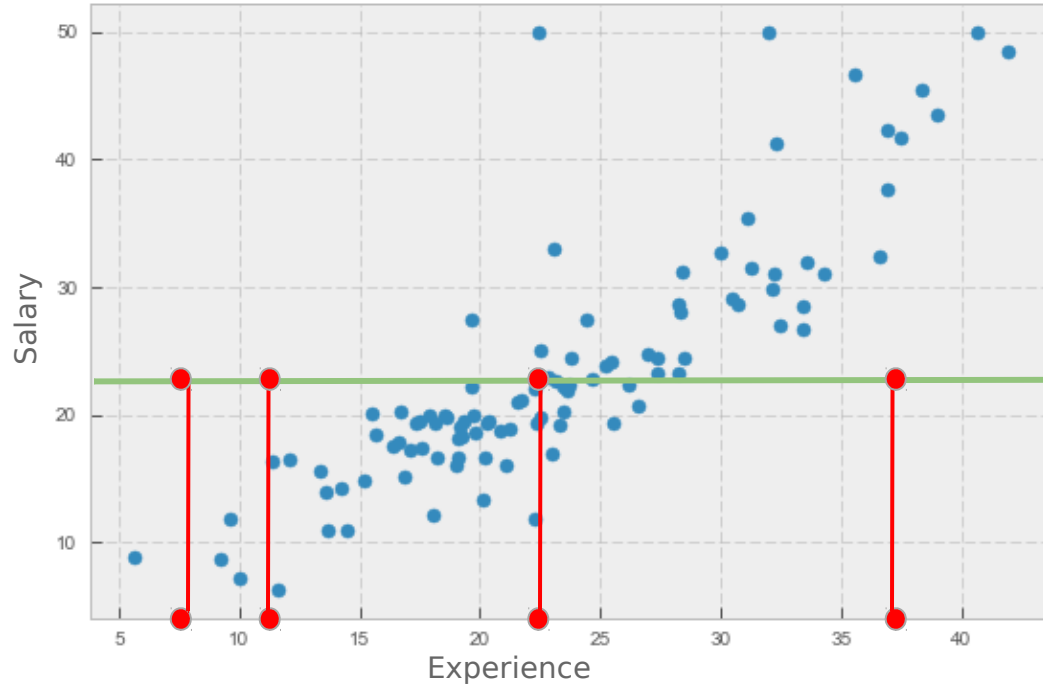
# Linear Models



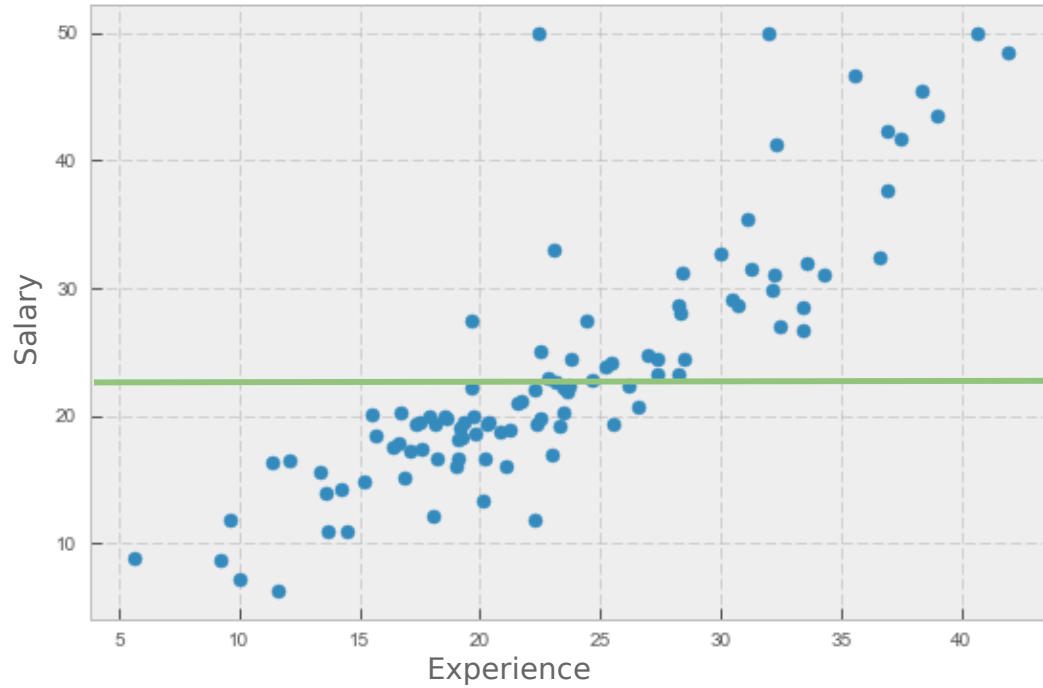
# Linear Models



# Linear Models



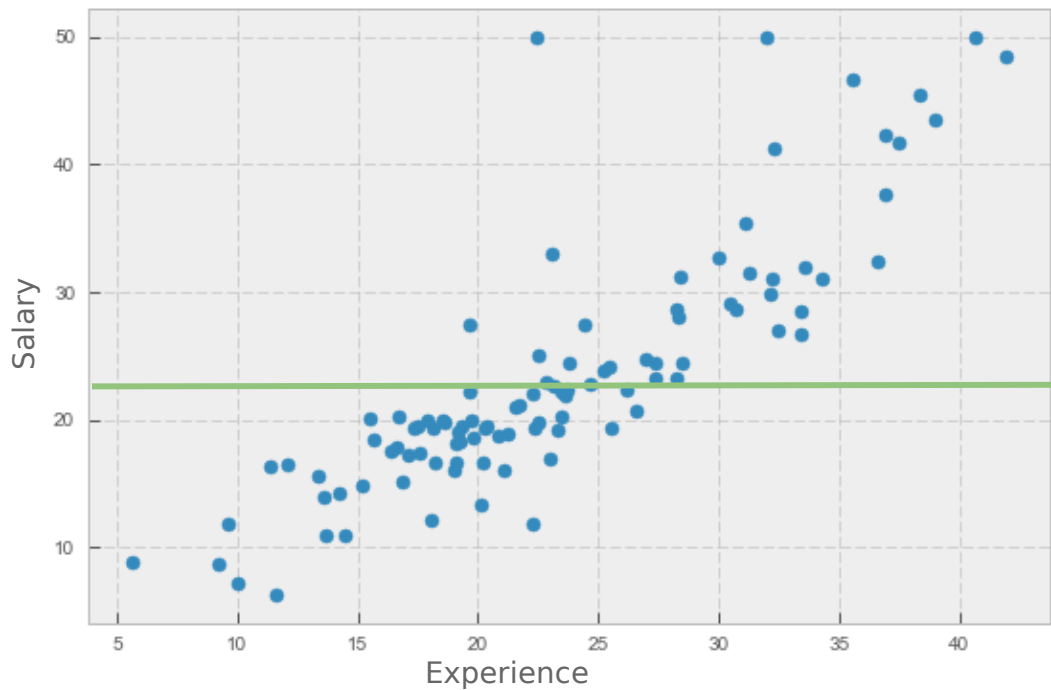
# Linear Models





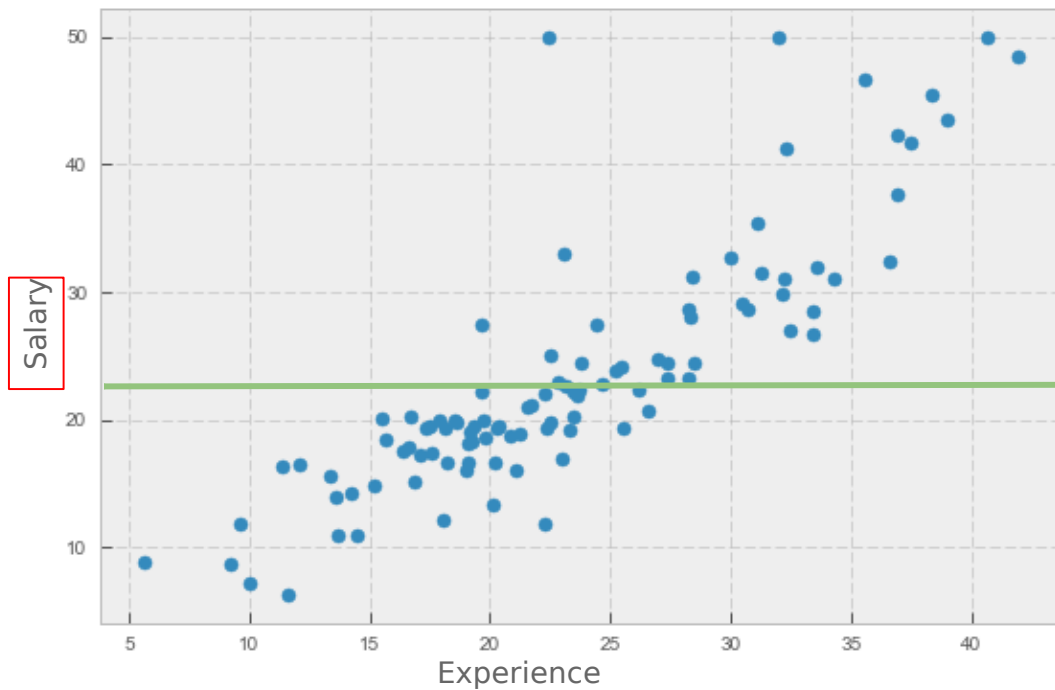
# Linear Models

$$Y = \beta X + b$$



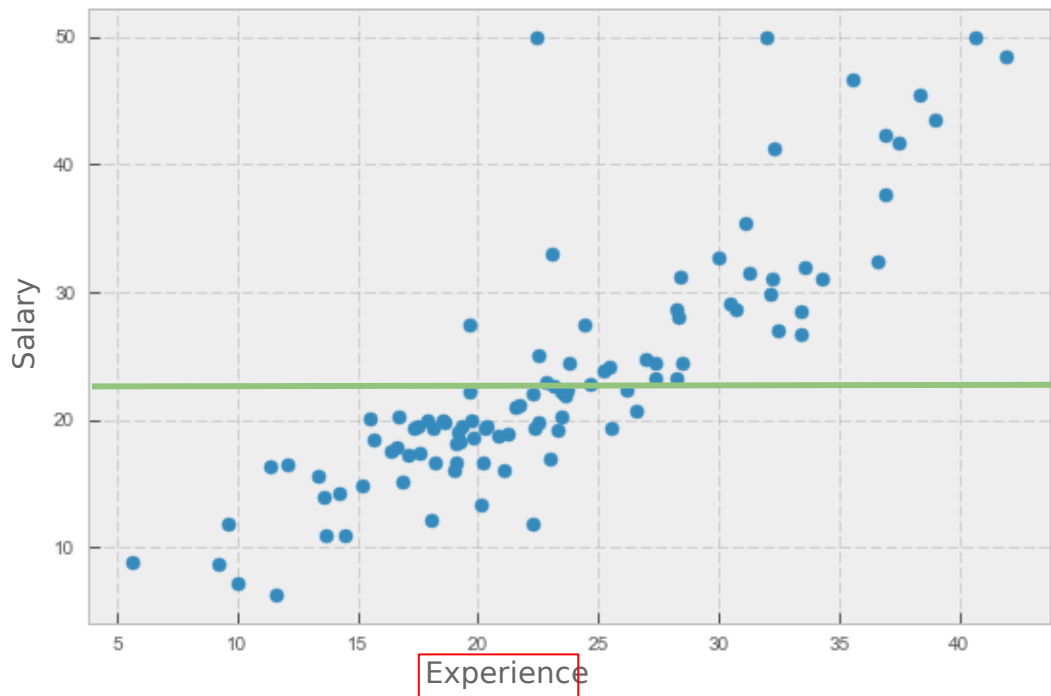
# Linear Models

$$Y = \beta X + b$$



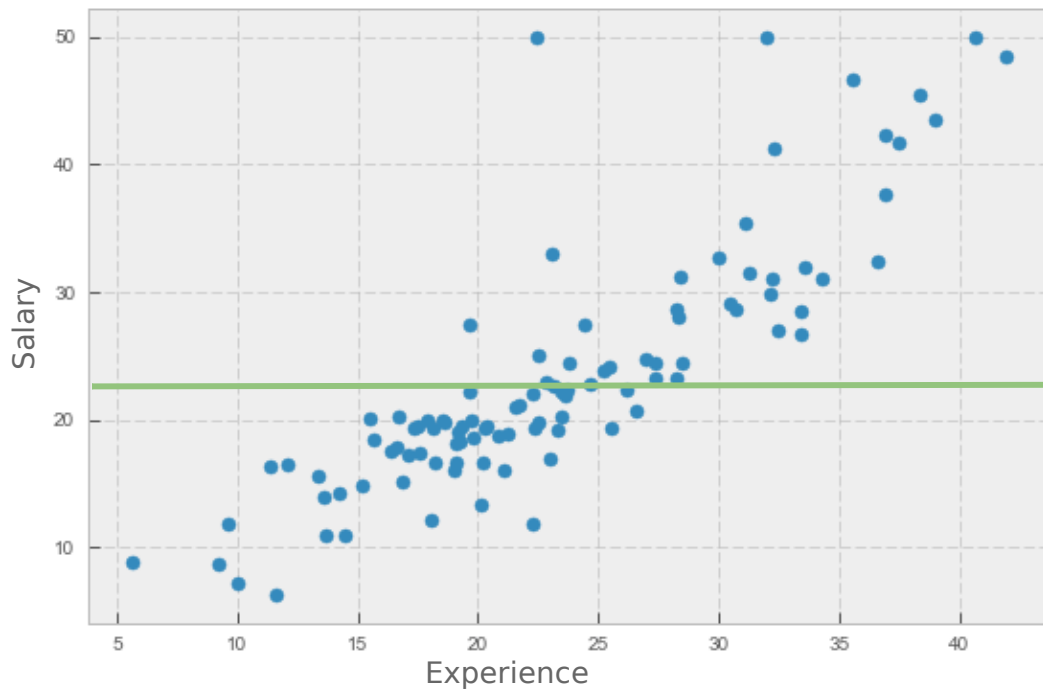
# Linear Models

$$Y = \beta X + b$$



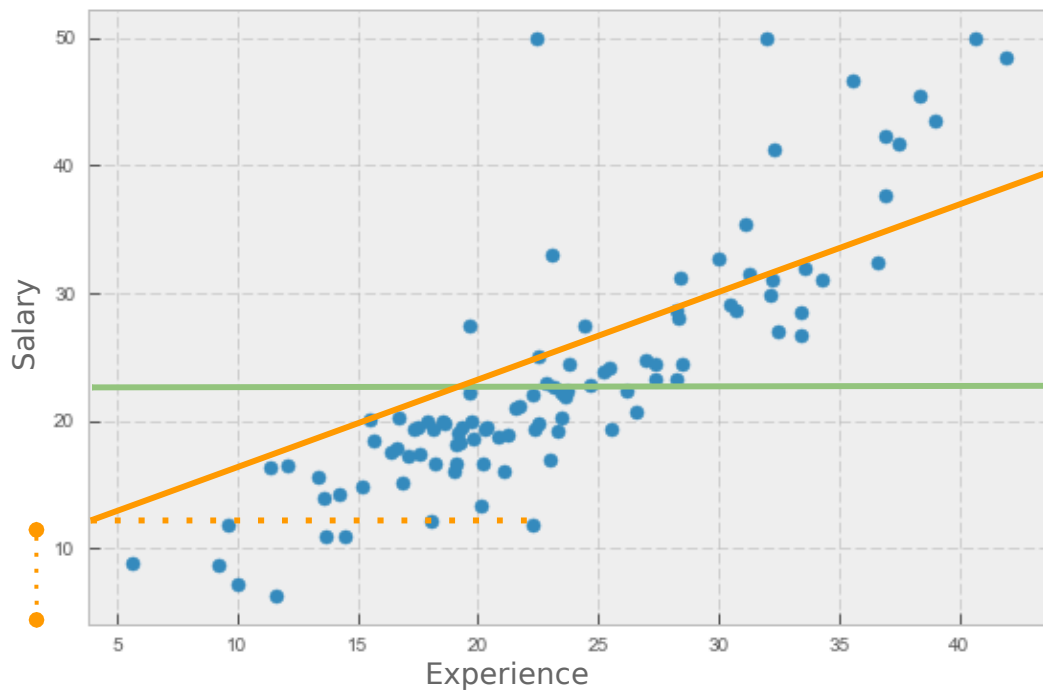
# Linear Models

$$Y = \beta X + b$$

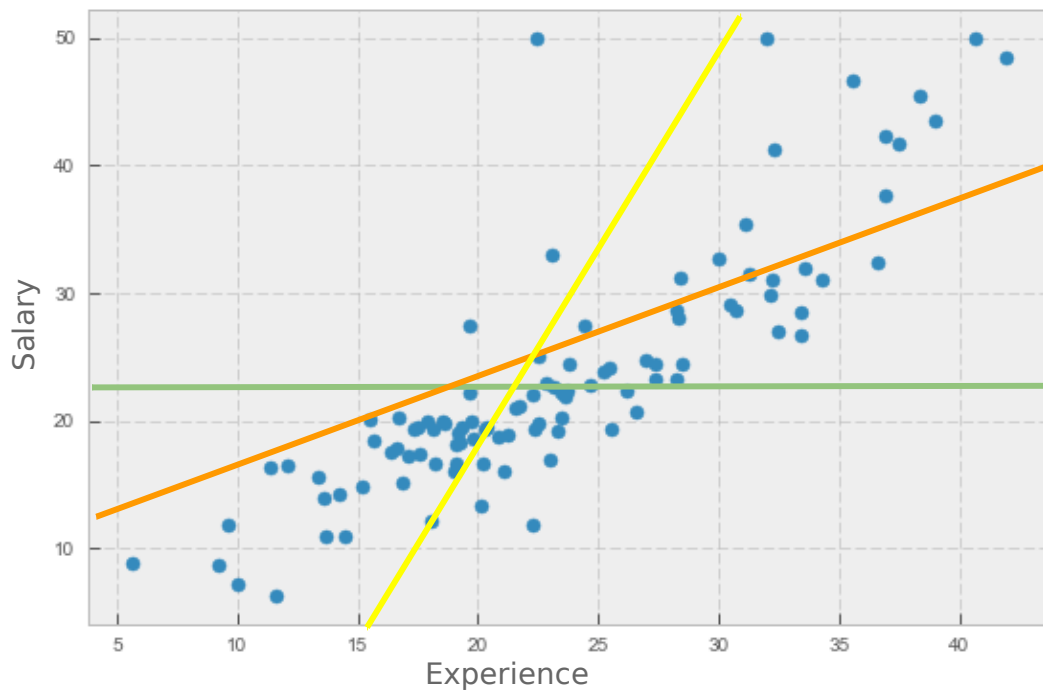


# Linear Models

$$Y = \beta X + b$$



# Linear Models

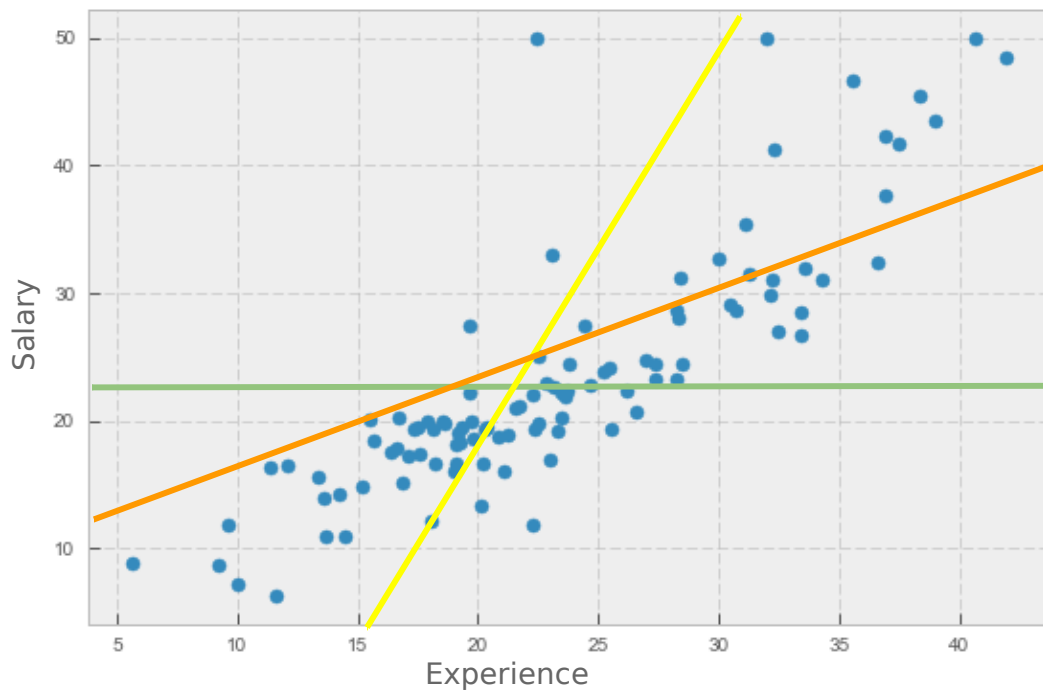


$$Y_3 = \beta_3 X + b_3$$

$$Y_2 = \beta_2 X + b_2$$

$$Y_1 = \beta_1 X + b_1$$

# Linear Models

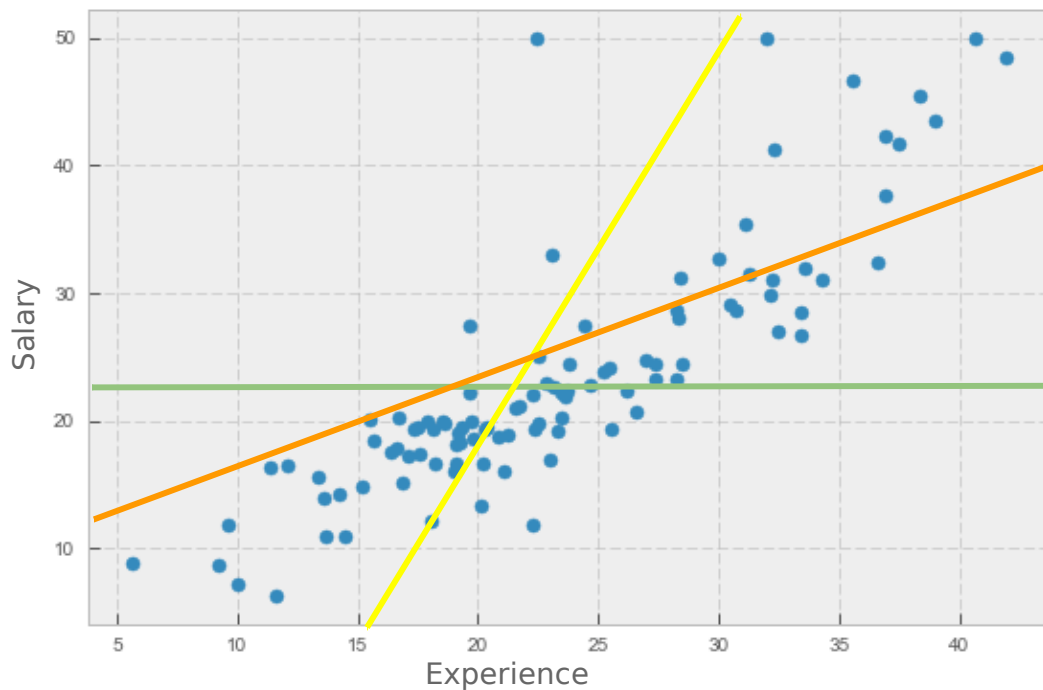


$$Y_3 = \beta_3 X + b_3$$

$$Y_2 = \beta_2 X + b_2$$

$$Y_1 = \beta_1 X + b_1$$

# Linear Models



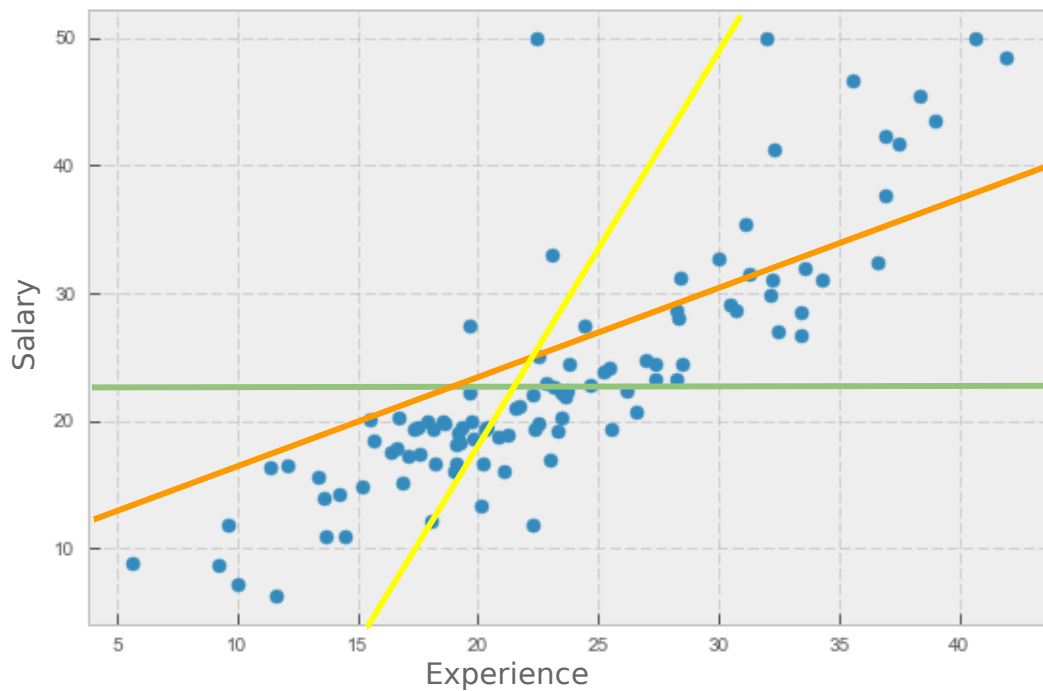
$$Y_3 = \beta_3 X + b_3 + \text{MSE}_3$$

$$Y_2 = \beta_2 X + b_2 + \text{MSE}_2$$

$$Y_1 = \beta_1 X + b_1 + \text{MSE}_1$$



# Linear Models



$$Y_3 = \beta_3 X + b_3 + \text{MSE}_3$$

$$Y_2 = \beta_2 X + b_2 + \text{MSE}_2$$

$$Y_1 = \beta_1 X + b_1 + \text{MSE}_1$$

# Linear Models: Facts

# Linear Models: Facts

- Low MSE = Better Model  
Error  $\sim$  Cost or Loss

# Linear Models: Facts

- Low MSE = Better Model  
Error  $\sim$  Cost or Loss
- Two key parameters:
  - $\beta$  determines the slope of the line

# Linear Models: Facts

- Low MSE = Better Model  
Error  $\sim$  Cost or Loss
- Two key parameters:
  - $\beta$  determines the slope of the line
  - $b$  determines the Intercept of the line

# Linear Models: Facts

- Low MSE = Better Model  
Error  $\sim$  Cost or Loss
- Two key parameters:
  - $\beta$  determines the slope of the line
  - $b$  determines the Intercept of the line

