Linear Regression:

- Fitting a straight line to a scatterplot
- Works best with continuous numerical data with a high correlation
- Pseudocode
    - Choose any number for m and b (y = mx + b)
    - Set x equal to an independent variable in you data set
    - Set y equal to the dependent variable in your data set
    - Set the gradients of m and b equal to zero
    - Find the partial derivatives of the residuals squared error function with respect to m and b and find the gradient of both of them with current x, y, m, and b values
    - Add the current gradient to the gradients you just found
    - Repeat this process until you've gone through all the datapoints
    - Subtract the current m and b variables by some smaller learning rate multiplied by the gradients
    - Repeat for multiple trials until total error of the function converges
- Residuals
    - The difference between the predicted value and the actual value of a regression line
    - By minimizing the square of the residuals, the model will improve

Polynomial Regression:

- Fitting a polynomial of any degree to a scatter plot
- Works with polynomials instead of linear functions