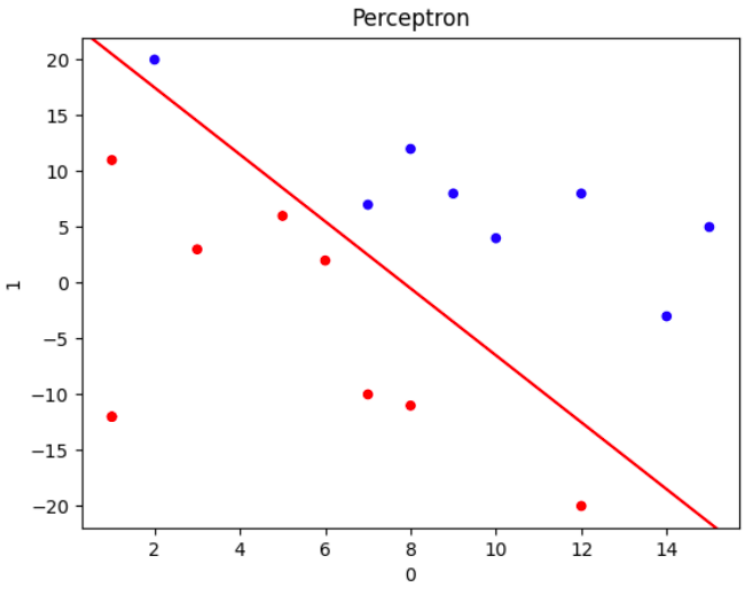
1. Perceptron: Final Decision Boundary Plot



2. Linear Regression

learning_rates = [0.001, 0.005, 0.01, 0.04, 0.05, 0.1, 0.5, 1, 5, 10]

I chose my 10th alpha value to be 0.04 because I noticed if the learning rate is too small (0.01 and smaller), then the gradient descent will take a long time to converge such that 100 iterations is not enough. Also, if the learning rate is too big (0.5 and greater), then the gradient descent will cause the cost function R to increase rather than decrease and thus take abnormally few iterations and converging too quickly. As such, I found 0.04 to be not too small or too big of a value that it starts to converge before the 100th and its cost function R keeps decreasing until the 100th iteration.