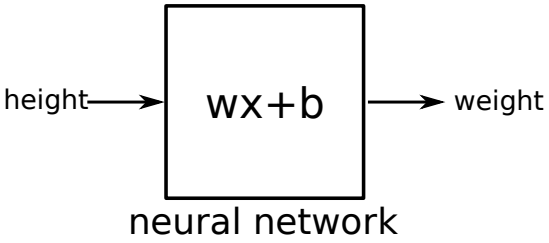
Lesson 2 (Simple Linear Regression) What is the weight of a child who is 70 inches tall? Below is a table of the heights (in inches) and the weights (in pounds) of 10 randomly selected children.[2] Use MSE (L^2) loss function to train the neural network shown below.

height	weight
67	128
67	123
72	129
69	143
69	132
70	142
67	112
67	118
66	108
68	119



Use the following approach to train the network.

(a) Program a function in Python that computes MSE as a function of the neural network parameters w and b. Then use a contour plot of MSE to estimate the optimal values for w and b.

(b) Compute the RMSE for your estimated values of w and b.

(c) Check that the Simple Linear Regression Network with your estimated values for w and b improves upon a Simple Bias Network baseline.

Hint: Check that the RMSE of the Simple Linear Regression Network is smaller than the RMSE of the Bias Network. (Note that for large values of n, RMSE of the Bias Network is approximately equal to the standard deviation of the target values.)

(d) Plot the data points and your best fit line on the same plot.

(e) Predict the weight of a child who is 70 inches tall.

[2] Data source: SOCR Data