

A Multi-Layer Perceptron (MLP) with one “hidden” layer is a neural network that passes its input through two linear layers with a nonlinearity such as ReLU in between. Suppose we’re doing MLP regression for the home price prediction task given latitude and longitude. We’ll want the output of the ReLU to be 100 features for each home, and the final output to be a single number (the predicted price).

1. Write a PyTorch expression that computes ReLU: `def relu(x): return _____`
Write two test cases.
 2. Draw a diagram of the forward pass of this model, including the loss computation. Use X for the input, W_1 and b_1 for the weights and biases of the first layer, W_2 and b_2 for the weights and biases of the second layer, and y for the target. **Label the shapes of each tensor**, especially W_1 , b_1 , W_2 , and b_2 .
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Before you leave, pick a couple of these questions to react to:

1. What was the most important concept from today for you?
2. What was the muddiest concept today?
3. How does what we did today connect with what you've learned before?
4. What would you like to review or clarify next time we meet?
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