Problem-1:
Implement Multi-Layer Perceptron (MLP) model with back propagation gradient descent to solve the XOR function. Get user input number of layers, neurons and learning rate.

Problem-2:

Consider the following small spam email detection dataset. It has three features (3 columns) and an output is_spam. Use 5 neurons for hidden layer and one neuron for output. Traing data: 8 rows; Test data: 2 rows. Train MLP with backpropagation on train data. Test predictions on test data.

has_offer	has_money	has_click	is_spam
1	1	1	1
1	1	0	1
0	1	1	1
1	0	1	1
0	0	1	0
0	0	0	0
0	1	0	0
1	0	0	0
0	1	1	1
1	0	1	1

Problem-3:

Test the following data with three outputs spam, promotional or phishing.

has_offer	has_money	has_click	has_link	is_spam	is_promotional	is_phishing
1	1	1	1	1	1	1
1	1	0	1	1	1	0
0	1	1	0	1	0	1
1	0	1	1	1	1	0
0	0	1	0	0	1	0
0	0	0	0	0	0	0
0	1	0	0	0	0	1
1	0	0	1	0	1	0
0	1	1	1	1	0	1
1	0	1	1	1	1	0

Problem-4:

Analyze the role of activations functions Sigmoid, ReLu and Softmax.

Problem-5:

Frame a problem statement related to your project title and Train an MLP a small dataset (Synthetic dataset or standard dataset)