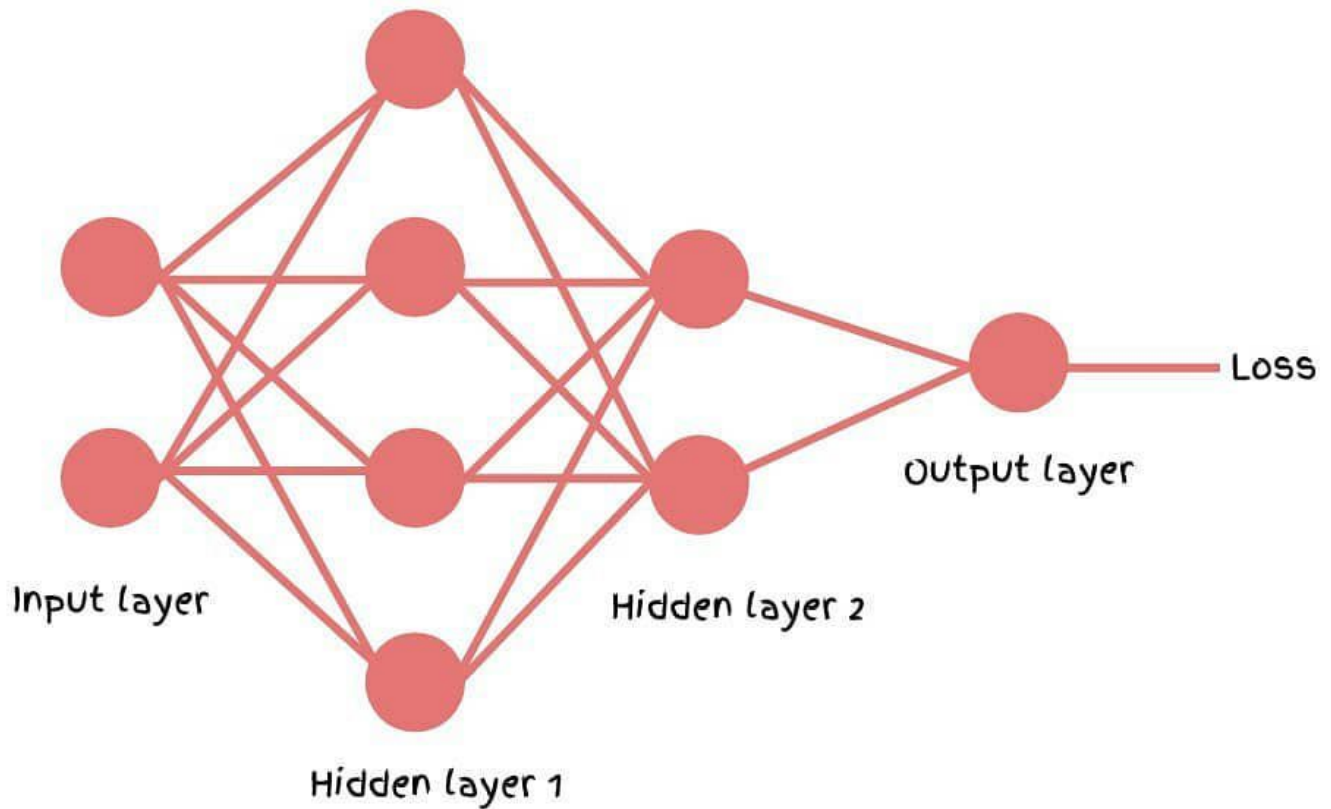
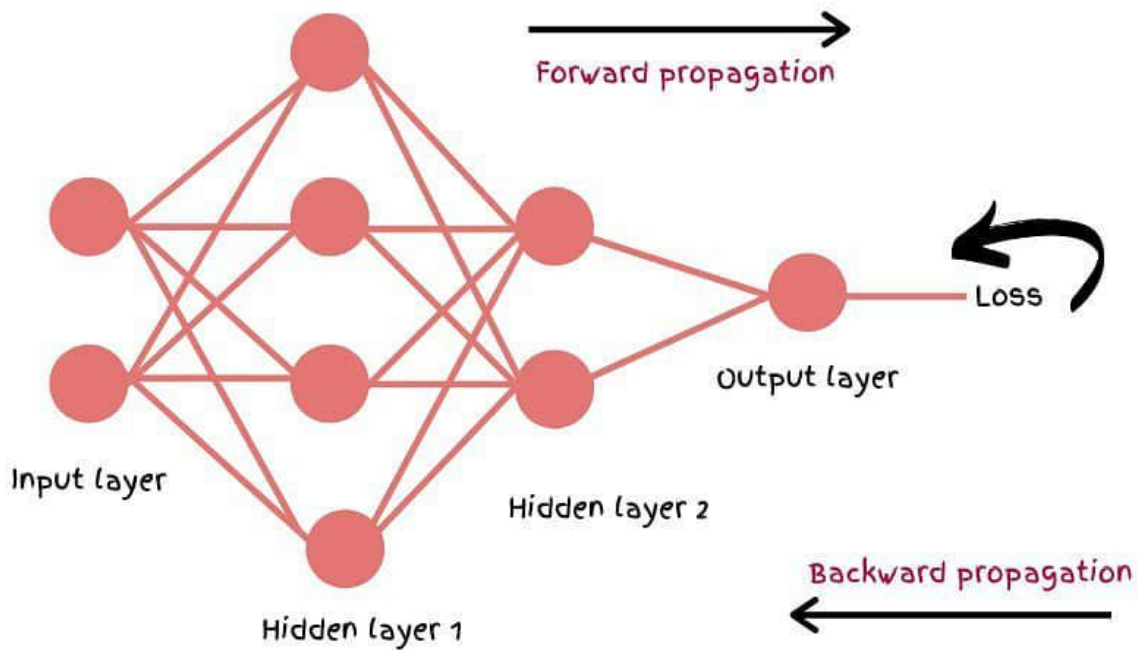


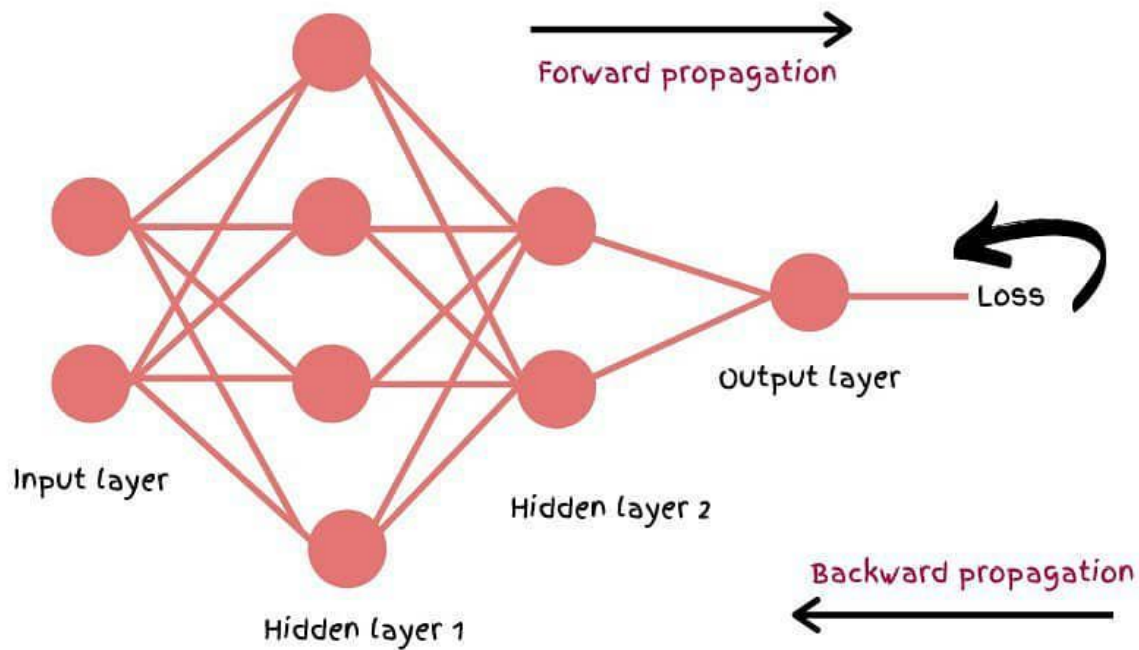
What is
Multi-layered Perceptron?



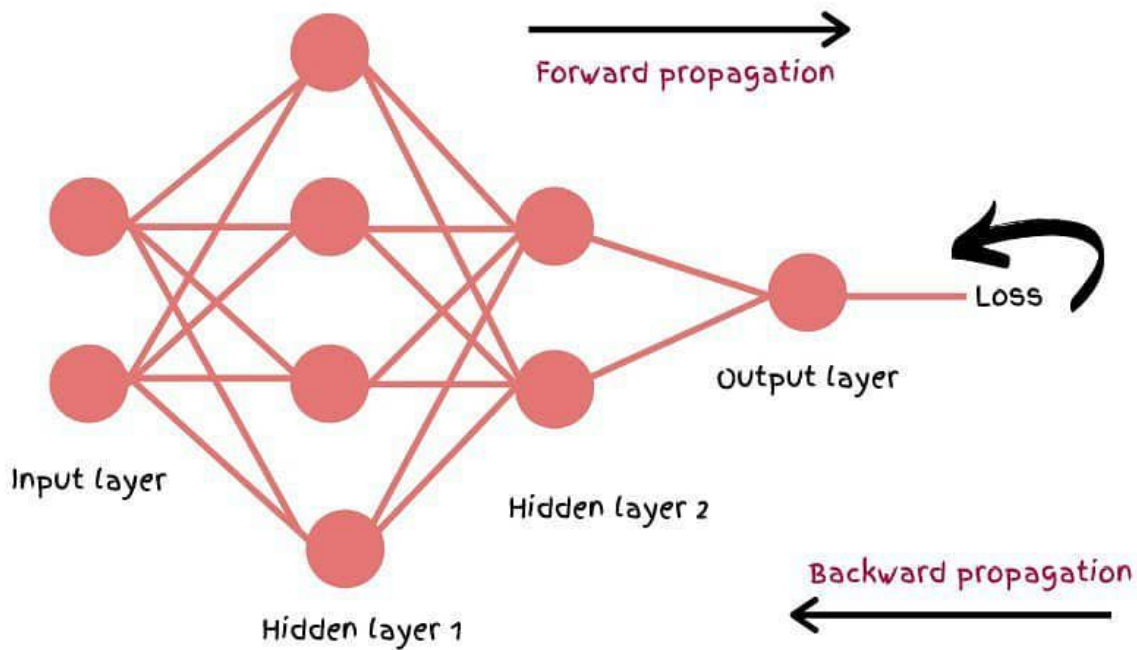
- Multiple perceptrons are connected to each other in layers are called ML-perceptron.
- Neural networks are often referred as multi-layered perceptron
- This paper “Learning representations by back-propagating errors”, introduced backpropagation and hidden layers concepts (Multilayer Perceptrons (MLPs)):



- *MLP trains on data of input-output pairs, by doing this it will learn to model the correlations.*
- *Training involves adjusting the parameters, or the weights and biases, of the model in order to minimize error, It uses BackPropagation to do this.*
- *In forward propagation, the signal flow moves from input layer through hidden layers to the output layer.*



- After signal reaching the output layer, we calculate the loss by comparing the output values with the ground truth labels.
- In backward propagation, It uses backpropagation and the chain rule of calculus, partial derivatives of the loss function regarding the various weights and biases are back-propagated through the MLP.
- That act of differentiation gives us a gradient, or a landscape of error, along which the parameters may be adjusted as they move the MLP one step closer to the error minimum.



- *So why MLP's, In the last post about limitations of perceptrons, we had seen that we can't create a model for XOR with single perceptron(because its a non linear function)*
- *So to overcome that we will be using MLP's to create non linear models.*
- *In real world we always get non linear data, so by using perceptron we can't achieve the goals.*