Sure! Here's a full glossary of essential **machine learning (ML)** terms, especially relevant to **perceptrons** and classification tasks like logical OR, AND, XOR:

🧠 Machine Learning Glossary

Term	Definition
Perceptron	A basic unit of a neural network that takes weighted inputs, applies a bias, and uses an activation function (usually step function). Used for binary classification.
Neuron	Another term for a perceptron, inspired by biological neurons.
Input Features (x)	Values fed into the model for prediction. For logical gates, these are 0s and 1s.
Weights (w)	Coefficients for each input feature. Determines input importance.
Bias (b)	A constant added to the weighted sum of inputs, helps shift the activation function.
Output (y)	The prediction result. In binary classification, usually 0 or 1.
Activation Function	Function applied to the weighted sum (plus bias). For a basic perceptron, it's usually a **step function**.
Learning Rate (α)	A small positive number that controls how much weights and bias are adjusted during training.
Loss Function	Measures how far off the prediction is from the actual output. Example: Mean Squared Error.
Training	The process of adjusting weights and bias using input-output examples.
Epoch	One complete pass through the entire training dataset.

Gradient Descent	Optimization technique to minimize the loss by updating weights in the direction of the steepest descent.
Backpropagation	Algorithm to calculate gradients and update weights layer by layer (used in multi-layer networks).
Binary Classification	Predicting one of two classes (e.g., 0 or 1).
Linearly Separable	If a single line (in 2D) or plane (in higher dimensions) can divide the data perfectly, it's linearly separable.
Epochs	Number of full passes over the training dataset.
Overfitting	When a model learns the training data too well, including noise. Hurts generalization.
Underfitting	When a model fails to capture the underlying pattern of the data.
Generalization	Model's ability to perform well on unseen data.
XOR Problem	Classic case of a non-linearly separable function that a simple perceptron cannot solve without hidden layers.
Multi-layer Perceptron (MLP)	A neural network with one or more hidden layers; can model non-linear functions like XOR.
Epoch	One full iteration over the entire training dataset.
Hyperparameters	Configurations set before training (like learning rate, number of epochs).

Let me know if you want this list formatted as a downloadable PDF or want specific definitions explained further.

Also, would you like me to regenerate or recap the **virtual base Perceptron class** and the **morphed OR/AND classes** you worked on yesterday?