Assignment

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Fully Connected Feedforward Neural Network (FCFFNN)

Model Architecture

The architecture of the Fully Connected Feedforward Neural Network (FCFFNN) used in this assignment is shown below:

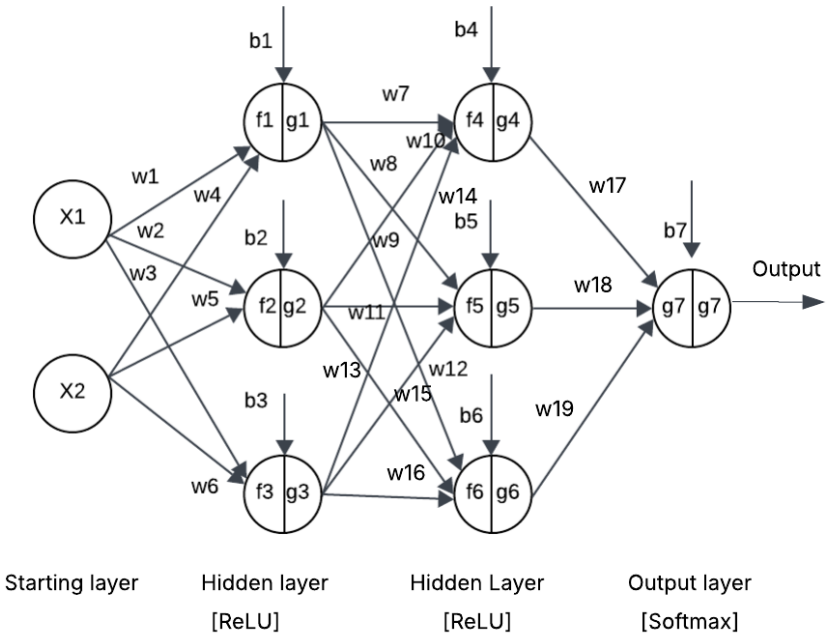

Fig - 1: FCFFNN Model

The model contains the following components:

- **Input Layer:** 2 input features
- **Hidden Layer 1:** 3 neurons with ReLU activation
- **Hidden Layer 2:** 3 neurons with ReLU activation
- **Output Layer:** 1 neuron with Sigmoid activation

Model Summary Explanation

Each layer in the model is fully connected (Dense layer), and the activation function used in the hidden layers is ReLU. Since the output layer has only 1 neuron and uses Sigmoid activation, it is suitable for binary classification.

Colab Implementation Link

- **Notebook:** Assignment 01 colab link

Model Output

Model: "functional_1"

Layer (type)	Output Shape	Param #
input_layer_1 (InputLayer)	(None, 2)	0
dense_3 (Dense)	(None, 3)	9
dense_4 (Dense)	(None, 3)	12
dense_5 (Dense)	(None, 1)	4

Total params: 25 (100.00 B)
Trainable params: 25 (100.00 B)
Non-trainable params: 0 (0.00 B)

Conclusion

The FCFFNN model was trained on input with 2 features and successfully predicted binary output using Sigmoid activation. The model is simple but effective for small-scale binary classification tasks.