Answer\_1\_Deep\_learning

1 (a) Implementing Deep Learning in a real-world application involves several steps.

First, clearly understand the problem you want to solve. Collect and prepare relevant data, choosing a tool like Tensor Flow or PyTorch. Design a neural network for your specific problem, then split your data into training, validation, and test sets. Train the model, adjusting settings based on performance. Fine-tune parameters, evaluate the model on test data, and deploy it to a production environment. Monitor the model's performance, consider scalability, security concerns, and continuously improve the model based on real-world feedback.

1 (b) Without activation functions, neural networks would essentially reduce to a linear model. Activation functions allow networks to learn hierarchical and abstract representations, crucial for handling real-world complexities. They also help adjust the output range of neurons. The absence of activation functions would result in ineffective representation learning, difficulty in training deep networks, and limited expressiveness, rendering the network less capable of addressing complex tasks with non-linear relationships in the data.