Assignment Rubric

Total Marks: 100

1. Activation Functions Implementation (Total: 20 marks)
    a. ReLU Functionality (5 marks):
        i. Excellent (5): Correctly implements ReLU forward & backward
        ii. Good (3-4): Minor errors in implementation
        iii. Needs Improvement (1-2): Major errors in implementation
        iv. Unacceptable (0): Not implemented

    b. Tanh Functionality (5 marks):
        i. Excellent (5): Correctly implements Tanh forward & backward
        ii. Good (3-4): Minor errors in implementation
        iii. Needs Improvement (1-2): Major errors in implementation
        iv. Unacceptable (0): Not implemented

    c. ELUs Functionality (5 marks):
        i. Excellent (5): Correctly implements ELUs forward & backward
        ii. Good (3-4): Minor errors in implementation
        iii. Needs Improvement (1-2): Major errors in implementation
        iv. Unacceptable (0): Not implemented

    d. Mish Functionality (5 marks):
        i. Excellent (5): Correctly implements Mish forward & backward
        ii. Good (3-4): Minor errors or incomplete implementation
        iii. Needs Improvement (1-2): Major errors in implementation
        iv. Unacceptable (0): Not implemented

2. CrossEntropyLoss Implementation (Total: 40 marks)

    a. Forward Method (20 marks):
        i. Excellent (20): Correctly computes the loss for given logits
        ii. Good (13-19): Minor errors in computation
        iii. Needs Improvement (6-12): Major errors or incomplete computation
        iv. Unacceptable (0): Not implemented

    b. Backward Method (20 marks):
        i. Excellent (20): Correctly computes the gradient w.r.t. logits
        ii. Good (13-19): Minor errors in gradient computation
        iii. Needs Improvement (6-12): Major errors or incomplete computation
        iv. Unacceptable (0): Not implemented

3. ANN Class Implementation (Total: 40 marks)
    a. Initialization (20 marks):
        i. Excellent (20): Correctly defines and initializes weights & biases using specified criteria
        ii. Good (13-19): Minor errors in initialization
        iii. Needs Improvement (6-12): Major errors or incomplete initialization
        iv. Unacceptable (0): Not implemented

    b. Forward Method (20 marks):
        i. Excellent (20): Processes batch of inputs to produce correct logit outputs
        ii. Good (13-19): Minor errors in processing or output shape
        iii. Needs Improvement (6-12): Major errors or incomplete processing
        iv. Unacceptable (0): Not implemented

4. General (applies to all sections): Code Readability & Structure: Up to 10 marks are deducted for poorly structured or unreadable code.

Note: Implementations using high-level frameworks such as PyTorch are not accepted for this assignment.