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2025 USA-NA-AIO Round 1, Problem 2, Part 10

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Part 10 (5 points, coding task)

Rectified Linear Unit, or the “ReLU”, is one of the most common used function in deep learning. It is defined as

$$\mathrm{ReLU}(x) = \max\{0, x\}.$$

In this part, you are asked to use PyTorch to build a ReLU class named `My_ReLU` that subclasses `nn.module`.

A successful class works in the following ways:

- The initialization of an object in `My_ReLU` does not take any input.
- Suppose we have a `My_ReLU` object called `activiation0`. When we call `activiation0(x)` with input `x` that is a tensor `x` with an arbitrary dimension and shape, we get an output `y` from the element-wise ReLU acvitivation on `x`.

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```
### WRITE YOUR SOLUTION HERE ###

class My_ReLU(nn.Module):
    def __init__(self):
        super().__init__()

    def forward(self, x):
        return torch.max(torch.zeros_like(x), x)
```

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```
""" END OF THIS PART """
```

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