Programming Assignment

Objective: This assignment has two objectives:

1. Understanding how to implement Image Classification model using PyTorch.
2. Develop a pipeline to solve the MNIST classification problem and output model accuracy.

Problem: Write a Python program to train and test MNIST dataset using a modified AlexNet as shown below. Output only the final model accuracy and nothing else for 10 epochs. Try to use the code in the lecture and modify as necessary.

Feature Extractor:

Layer	Filters	Filter Size	Stride	Padding	Feature Size	Activation
Input					1 × 28 × 28	
Conv2D	32	5	1	1	32 × 26 × 26	ReLU
Conv2D	64	3	-	1	64 × 26 × 64	ReLU
MaxPool2D	-	2	2	-	64 × 13 × 13	-
Conv2D	96	3	-	1	96 × 13 × 13	ReLU
Conv2D	64	3	-	1	64 × 13 × 13	ReLU
Conv2D	32	3	-	1	32 × 13 × 13	ReLU
MaxPool2D	-	2	1	-	32 × 12 × 12	-

Classifier:

Layer	Feature Size	Activation
Dropout	4608	
Linear	2048	ReLU
Dropout	2048	
Linear	1024	ReLU
Linear	10	