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Homework #5

PART 0

Plan for Dataset:
- Use <class TrainingData(Dataset):> to initialize
- Pass in scaled data
- Use W5D1 slides if stuck

Plan for DataLoader:
- Use torch.utils.data.DataLoader for each data set
  ↳ Creates batches
- Use W5D1 slides if stuck

Plan for Train/Test Loop Modifications:
- Update to pull data from DataLoaders instead of from train_inputs / train_outputs
- Use for X_batch, y_batch in <loader>:
  .... (to extract dataloader data)

PART 1

Confusion Matrix:

ACTUAL \ PREDICTED	Healthy	Wilting	Dead
Healthy	5	2	1
Wilting	1	2	2
Dead	1	2	2

Using the confusion matrix, we can see the model does well at predicting healthy plants (very high precision, quite high recall)
↳ The model is slightly above average at classifying dead plants.
↳ The model is bad at classifying wilting plants.

PART 5

↳ Scaling the data did slightly improve the model's performance. This is because it allows the model to be less biased towards a specific input type just because it arbitrarily works with larger values.
↳ Batching did not noticeably improve the model's performance. This is because batching is primarily optimization and efficiency and practicality-focused, not performance enhancing.
↳ Accuracy was the most useful metric (compared to loss) for assessing the model's performance.