Cross-validation

- Predict heart disease using Logistic Regression
- Perform k-fold cross-validation with k=[3,5,7,10,20,50]
- Calculate the mean and standard deviation of training and test accuracies for all k values and interpret the results
- Bonus
  - Plot the calculated mean and standard deviation values

Validation

- Train the Neural Network on the FashionMNIST dataset and observe the training, validation and test errors
- Perform early stopping with a patience of 2 epochs (stop model training when validation error/accuracy does not improve for 2 epochs in a row)
- Bonus
  - Change, add or remove some layers in the model and observe training, validation and test errors

Validation (Homework)

- Try at least two other activation functions and write down how they affect the accuracy (https://pytorch.org/docs/master/nn.html#non-linear-activations-weighted-sum-nonlinearity)
- Optimize the number of neurons in the hidden layers to achieve the best test accuracy
  - Use a simple grid search
  - Use at least 10 values (e.g. 100-1300)
  - Do not overfit the test set (avoid data leaks)
  - Bonus → Use a fancier hyperparameter optimization method