Data Science project overview:

1. Improving last semesters model:
    a. Used an ensemble model XGBoost and used 2 pc's (two dimensions) instead of 4 features. Gained 7% in model accuracy.
2. Fashion Mnist:
    a. Created a simple model knn with around 85% accuracy using all 787 features
    b. Normalized data and used pca to reduce dimentions
    c. Fitted a new model on pc's from pca
    d. Got around 85% accuracy with 50 pc's
    e. Showed we can get the same accuracy with a stronger ensemble model and much fewer dimensions
3. Dogs - vs - Cats:
    a. Loaded images in gray scale format, diluting dimensions by a third as a normal picture has values for RBG (red, blue, green) to gray scale (grey).
    b. Resized images to 10 x 10 pixels and showed this would not be good as its to hard to differentiate between cat and dog image. Resized all to 33x33
    c. Used pca to reduce dimensions and made a model
    d. Decided to use original dimensions without pca and used a ensemble model with accuracy of 65%
4. Hand:
    a. Loaded all training data.
    b. Merged alone files with right hand files and made them the same size.
    c. Made each person in sync and spontan files the same row
    d. Made new data frame with 5 frames in one row representing one second
    e. Normalized using standard scale as min max would not consider negative depth of x,y,z ( 3d plane)
    f. Made a model and ran with accuracy of 90%