Project 1:

* Adding gravity to system to see how spring system minimized potential energy (mimics process found in all of nature/chemistry)
* Increased number of masses and length, sees weird results where system goes up
* Ran mimimizer that took each mass and took its potential energy (and springs as well)
  + Asked physicas professor, cost of moving up can minimize PE of system as a whole
* Increased mass but kep length and vertical distance constant
* Connectivinty matrix (which masses are connected to each other) used to distinguish that, PE of system multiplied by matrix (called “A”)
* Also computed center of mass
* Made graph of A matrix (purple = 0, yellow = connected masses, showed steps between masses consistent with desired effect of A matrix)
* Results of graphed systems consistent with physics (stretched springs are longer, compressed springs are shorter)
* Minimizer won’t work above 500 masses, does not converge and find a minimum

Project 2: explain what variables mean better, label graphs with titles that explain the initial conditions and what the graphs mean

Project 3:

* Tested 3 styles of regressors
  + Svm = older regressor, should produce a lower score (and did)
* Tested neural network regressor for customization options
  + Tested different options
  + Slow to solve
  + Much better score (0.84 vs 0.68)
  + Knows score could be better (increase maximums for iterations and functions)
  + Problems with optimization (involves preprocessing of dataframe which changes the actual values)
* Sorted graph displays datapoint number vs critical point temperature, unsure what data to extract from the graph
* Got a negative score for one solver
* Dataframe needs to be cleaned (labels at the top need to be deleted)
* Suggested to talk to groupmates to find out what the graph means
* Suggested to use a booster for the scores to get them even higher
* Suggested to find out reasons why older solvers are world to differential self from other groups
* Suggested to research methods of traintestsplit to differentiate