* 1. What is the carbon footprint impact of plant-based foods versus animal-based foods? (maybe include protein rich food?) **Kevin**
     1. *What types of food production should be encouraged to consume nutritious diet in a sustainable way?*
* Setting up our dependencies
* Read in our csv setting it up as a pandas data frame
* Next we take a look at our raw data which looks pretty good overall but we can immediately see there are a few instances of missing data
* Using drop function we remove all NaN values and review our data frame to review
* Drop was successful so the next thing we did was reset the index so that it aligns with our new clean data frame
* Here is a visual representation of kg CO2 per kg of food item. After reviewing the raw data and our chart it became obvious there were a few values that were significantly larger than most
* Next, I split up the data frames to separate based on whether they were animal and plant food items
* We now have two data frames. The second of which I then reset the index
* I used box and whisker plots to look at both animal and plant based foods relative to all three measurements of greenhouse gas emissions and to see how much those outliers could possibly skew our results. There are clear outliers in all three measurements in both categories. This is something to consider when looking at the following pie charts
* We can take closer look at how emissions are broken down by item for both animal and plant based items using pie charts
* Using a sum would skew our results because there are nearly twice as many observations for plant based compared to animal based. Additionally due to the number and severity of outliers we will use the median rather than the mean. Comparing the median of greenhouse gas emissions of plant vs animal food products in the three measurements we used in the last set of slides
* As we move down through the measurements plant based food has an increasingly large share of the emissions. This is expected if we take a closer look at what we are measuring: Total Emissions, kgCO2 v 1000kcal, and finally kgCO2 v 100gprotien. Animals produce more protein per weight and more kcal per weight generally speaking.
* Using Alvin’s graph I and my separated data I then looked at how Total emissions are broken down for animal and plant based food. We can see that breakdown with these bar graphs
* Keeping with the sperate data frames I created pie charts to see which food items were responsible for the largest shares of emissions for each animal and plant based foods
* Using our original data frame, I then looked at which items comprised the largest shares of emissions for our entire data set with a pie chart

1. Beef cattle are by far the largest contributor to greenhouse emissions, followed lamb, dairy cattle, and cheese.
2. Coffee and dark chocolate are the next largest contributors

* Animal based foods are much larger contributors to greenhouse emissions than plant based, but there are plant based foods that are large contributors and should be avoided.
* We can see that it’s not as simple as eliminating animal based foods, but rather eliminating or sharply reducing the largest contributors in each category.
* Animal based: Poultry, fish, pork, and eggs all provide similar protein levels for significantly less emissions that the largest contributors
* Plant based: Coffee, tomatoes, berries & grapes, and apples a