1. Import csv’s, review data structure and for n/a’s.
2. Sort the SP df by date
3. Calculate the daily return for S&P and add it to the df.
4. Create separate DF’s for different timeframes and chart the S&P settle price for these time periods. Each time period was approximately 1 year prior to the event:
   1. 87 crash
   2. LTCM
   3. Internet Bubble
   4. 9/11
   5. 2008 Financial crisis
   6. 2012 sell – off
   7. China Black Monday sell-off
   8. Covid virus sell-off
5. Merge the copper (CME future) and Gold (CME future) df’s by date
6. Consolidate columns in df to date and settle price for both futures.
7. Calculate the correlation of the copper and gold settle prices
8. Calculate the copper gold ratio and add it to the df (copper settle / gold settle)
9. Create the DF’s for different timeframes and chart the ratio for these periods.
   1. 87 crash
   2. LTCM
   3. Internet Bubble
   4. 9/11
   5. 2008 Financial crisis
   6. 2012 sell – off
   7. China Black Monday sell-off
   8. Covid virus sell-off
10. Merge the copper gold df with the S&P df
11. Plot the S&P settle price for each time period above against the Copper Gold ratio
12. Calculate the daily change of the copper gold ratio and plot against the S&P settle price for each time period.
13. Calculate the correlation of the S&P settle price against the Copper Gold ratio
14. Plot the daily return of the S&P settle price against the daily % change in the copper gold ratio.
15. Calculate the correlations of copper gold ratio against the S&P settle price for each time frame.