Recently, the Wall Street Journal reported (<https://www.youtube.com/watch?v=EtqVmE2U4Xo&t=36s>) that the orange juice produced from the Florida oranges might be going extinct. Florida is the dominant producer of oranges that are use to make concentrated orange juice, a tradition that started from World War 2 to provide refreshments to soldiers. Since then, the demand for orange juice has remained constant. However, in the last 25 years, Florida has suffered several hurricanes and some extreme cold weather. The advent of the citrus greening bacteria in 2005 has worsened this situation. This has led to reduction of orange production in Florida (<https://southernagtoday.org/2024/01/05/citrus-greening-hurricanes-and-the-decline-of-the-florida-citrus-industry/>). As expected, the price has skyrocketed. To reduce this spike, the US has started importing oranges from Mexico.

Our aim here is to gather and study the data for orange juice prices, and hopefully come up with a machine learning model to predict its future prices. Here is the data that we have collected:

1. Orange Juice prices data (2001-2025) from Yahoo Finance: <https://finance.yahoo.com/quote/OJ%3DF/history/?period1=1000699200&period2=1740087028>. This data can also be imported into the Jupyter notebooks using APIs.
2. Precipitations from about 100 weather stations in Florida: <https://climatecenter.fsu.edu/climate-data-access-tools/downloadable-data>. We can download CSV files and combine them using Pandas. But this will require some data cleaning because the precipitation data for some days is reported as ‘-99.99’ which means that the data is missing on those days.
3. Loss of land acreage due to citrus greening bacteria by year: <https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Citrus/Abandoned_Acreage/index.php>. Unfortunately, this is discrete and therefore we have only 25 data points, but could potentially help explain the price spike in recent years.
4. Data for imported oranges from Mexico – We will look into this when necessary.