Capstone Project 1 Proposal

The question to answer is:

How can I predict the volume of avocados that will be sold, and their price?

This project is useful for all actors of the avocado industry:

- The **producers** can estimate their income, using the retail sale price as an indicator. The trend over the years can help them to prepare for the next harvest.
- The **importers** can order and ship avocados according to this forecast. Most of the imported avocados come by truck from Mexico, then by boat from central and South America. Because of the shipping time, the importers need to anticipate the volume of avocado they will sell.
- The **wholesalers** can anticipate the volume of avocados they will need. Fruits are perishable goods, so the stock volume must be monitored efficiently to avoid waste.
- The **retailers** can adjust their sale price according to the estimation, and be competitive.

The dataset I will use for this project is available to download as excel files from the Hass Avocado Board website (http://www.hassavocadoboard.com). This group was established in 2002 by Domestic Hass avocado producers and importers. Their objective is to promote the consumption of Hass avocados in the United States.

The data contain the actual retail price and volume collected from the retailers' cash registers every week.
Data are available from 2004, and discriminated between conventional and organic avocados from 2015.
However, before 2013, the data collected from retailers did not represent 100 % of the market, so it was mathematically increased.

2018 Avocado Price & Retail Volume

2018 Conventional Hass Avocado Volume & Price

TOTAL U.S.

TOTAL U.S.   Download Excel

Week	7/15/2018	7/8/2018	7/1/2018	6/24/2018
ASP*	$1.07	$1.03	$1.05	$1.04
Total Volume	43,126,773	47,848,190	45,572,739	44,742,750
4046	13,457,480	14,624,444	14,978,440	14,643,774
4225	12,125,208	14,184,133	12,542,938	12,717,017
4770	908,599	1,169,256	969,239	1,110,724
Total Bagged	16,635,487	17,870,358	17,082,123	16,271,234
Sml Bagged	11,924,570	12,817,173	11,945,298	11,708,299
Lrg Bagged	4,460,656	4,735,852	4,934,541	4,262,205
XLrg Bagged	250,260	317,333	202,284	300,730

*ASP - Average Sales Price

For the scope of this project, I will use total US price and volume for years 2016-2018, for the conventional Hass Avocado.
I will add an indicator to the dataset to see if the federal holidays have an influence on the avocado sales.

The techniques to use in this project will be Time Series modeling and forecasting.

The deliverables will be Jupyter Notebook, a technical report and a presentation of the project.