

Lumber Prices

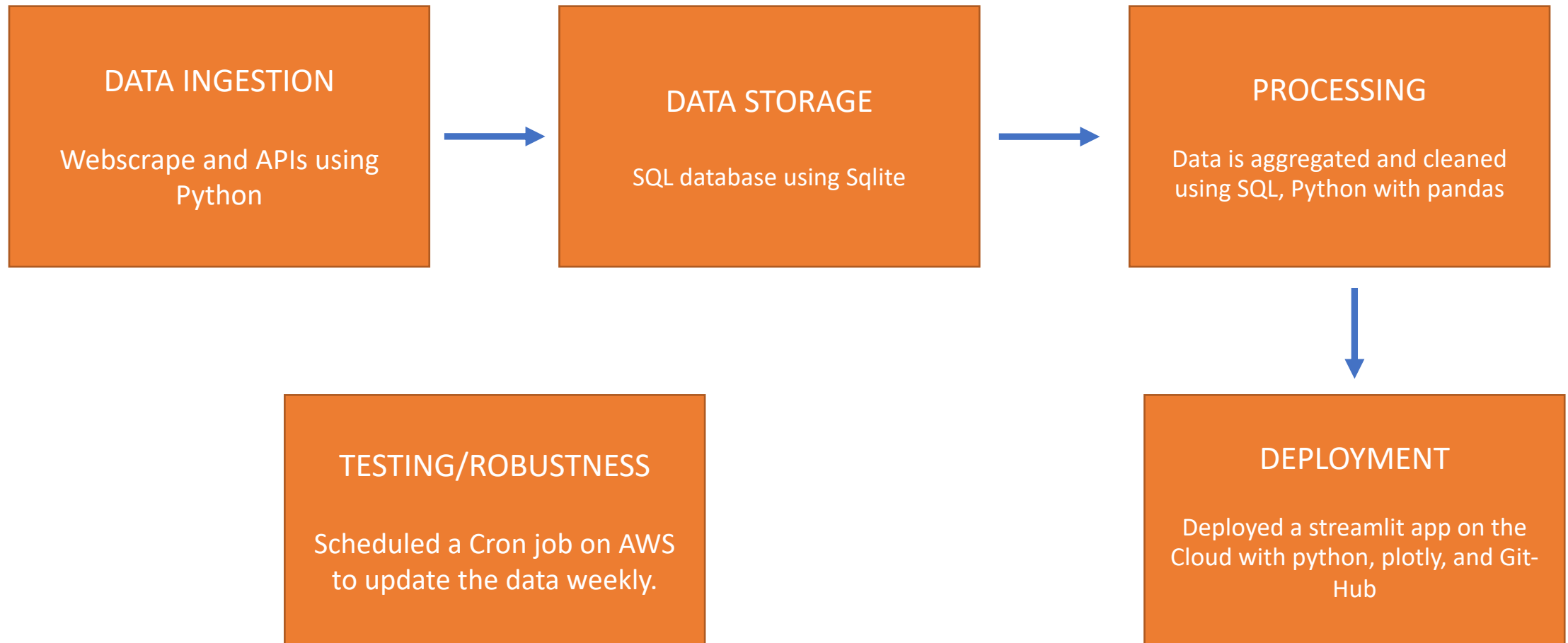
Motivation:

Since late 2020, lumber prices have seen a large amount of volatility ranging from \$300 to \$1700 per thousand board feet. About 30% of a new home's material cost is lumber, so these price changes can have a significant impact on housing costs.

Objectives:

Pull lumber data as well as other economic metrics and build an app to help search for correlations in the price swings.

Data Pipeline



Processing Data

- Aggregated Data in SQL
- Cleaned and Normalized Data in Python
- Utilized Custom Date Table

The screenshot displays a database management interface. On the left, the 'date_corp' table structure is shown with columns: Actual_Date, First_Day_Month, Date, Month, Year, Cov_Date, and Date2. The table contains 38 rows of data, representing dates from 1/1/2010 to 2/1/2020. On the right, a 'DB Schema' window lists 28 tables and their corresponding SQL CREATE statements. The tables include COVID, Consumer_Price_Index, ELF_COMBO, ELF_COMBO_BACKUP, Elect_Prod, Export_Goods_Services, Gas_Demand, Gasoline_Demand, Gen_Govt_Tot_Expenditure, Govt_Debt, Hourly_Wage_Manuf, Housing_Price, Import_Goods_Services, Industrial_Production, Interest_Rates, Inventory_Change, Job_Vacancy_Rate, Lumber, Money_Supply, Oil_Demand, Oil_Prod, Producer_Price_Index, Real_GDP, Retail_Trade, Sentiment_Index, Stock_Exchange, Unemployment, and date_corp. Each table is created with specific data types and constraints.

Table	Actual_Date	First_Day_Month	Date	Month	Year	Cov_Date	Date2
1	1/1/20	1/1/2010	1/1/2010	1	2010	2010-01-01	2010-01-01
2	1/2/20	1/1/2010	1/1/2010	1	2010	2010-01-02	2010-01-01
3	1/3/20	1/1/2010	1/1/2010	1	2010	2010-01-03	2010-01-01
4	1/4/20	1/1/2010	1/1/2010	1	2010	2010-01-04	2010-01-01
5	1/5/20	1/1/2010	1/1/2010	1	2010	2010-01-05	2010-01-01
6	1/6/20	1/1/2010	1/1/2010	1	2010	2010-01-06	2010-01-01
7	1/7/20	1/1/2010	1/1/2010	1	2010	2010-01-07	2010-01-01
8	1/8/20	1/1/2010	1/1/2010	1	2010	2010-01-08	2010-01-01
9	1/9/20	1/1/2010	1/1/2010	1	2010	2010-01-09	2010-01-01
10	1/10/20	1/1/2010	1/1/2010	1	2010	2010-01-10	2010-01-01
11	1/11/20	1/1/2010	1/1/2010	1	2010	2010-01-11	2010-01-01
12	1/12/20	1/1/2010	1/1/2010	1	2010	2010-01-12	2010-01-01
13	1/13/20	1/1/2010	1/1/2010	1	2010	2010-01-13	2010-01-01
14	1/14/20	1/1/2010	1/1/2010	1	2010	2010-01-14	2010-01-01
15	1/15/20	1/1/2010	1/1/2010	1	2010	2010-01-15	2010-01-01
16	1/16/20	1/1/2010	1/1/2010	1	2010	2010-01-16	2010-01-01
17	1/17/20	1/1/2010	1/1/2010	1	2010	2010-01-17	2010-01-01
18	1/18/20	1/1/2010	1/1/2010	1	2010	2010-01-18	2010-01-01
19	1/19/20	1/1/2010	1/1/2010	1	2010	2010-01-19	2010-01-01
20	1/20/20	1/1/2010	1/1/2010	1	2010	2010-01-20	2010-01-01
21	1/21/20	1/1/2010	1/1/2010	1	2010	2010-01-21	2010-01-01
22	1/22/20	1/1/2010	1/1/2010	1	2010	2010-01-22	2010-01-01
23	1/23/20	1/1/2010	1/1/2010	1	2010	2010-01-23	2010-01-01
24	1/24/20	1/1/2010	1/1/2010	1	2010	2010-01-24	2010-01-01
25	1/25/20	1/1/2010	1/1/2010	1	2010	2010-01-25	2010-01-01
26	1/26/20	1/1/2010	1/1/2010	1	2010	2010-01-26	2010-01-01
27	1/27/20	1/1/2010	1/1/2010	1	2010	2010-01-27	2010-01-01
28	1/28/20	1/1/2010	1/1/2010	1	2010	2010-01-28	2010-01-01
29	1/29/20	1/1/2010	1/1/2010	1	2010	2010-01-29	2010-01-01
30	1/30/20	1/1/2010	1/1/2010	1	2010	2010-01-30	2010-01-01
31	1/31/20	1/1/2010	1/1/2010	1	2010	2010-01-31	2010-01-01
32	2/1/20	2/1/2010	2/1/2010	2	2010	2010-02-01	2010-02-01
33	2/2/20	2/1/2010	2/1/2010	2	2010	2010-02-02	2010-02-01
34	2/3/20	2/1/2010	2/1/2010	2	2010	2010-02-03	2010-02-01
35	2/4/20	2/1/2010	2/1/2010	2	2010	2010-02-04	2010-02-01
36	2/5/20	2/1/2010	2/1/2010	2	2010	2010-02-05	2010-02-01
37	2/6/20	2/1/2010	2/1/2010	2	2010	2010-02-06	2010-02-01
38	2/7/20	2/1/2010	2/1/2010	2	2010	2010-02-07	2010-02-01

Lumber Prices – Streamlit App

- Add or pick Date Range
- Add as many additional metrics on the same graph for comparison
- <https://matt-redmond-eng-streamlitapp-8t78po.streamlitapp.com/>

Lumber Prices and Other Economic Metrics

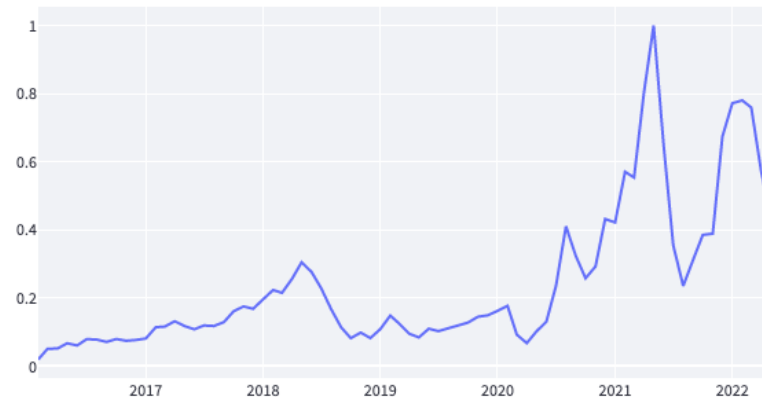
Enter Start Date

2016/01/01

Enter End Date

2022/08/09

- | | | | |
|---|--|---|--|
| <input checked="" type="checkbox"/> Lumber Prices | <input type="checkbox"/> CPI | <input type="checkbox"/> Elect Prod | <input type="checkbox"/> Gas Demand |
| <input type="checkbox"/> Interest Rates | <input type="checkbox"/> PPI | <input type="checkbox"/> Oil Prod | <input type="checkbox"/> Oil Demand |
| <input type="checkbox"/> Housing Price | <input type="checkbox"/> Sentiment Index | <input type="checkbox"/> Ind Prod | <input type="checkbox"/> Gasoline Demand |
| <input type="checkbox"/> Covid Cases | <input type="checkbox"/> Govt Debt | <input type="checkbox"/> Wages Manuf | <input type="checkbox"/> Retail Trade |
| <input type="checkbox"/> Covid Deaths | <input type="checkbox"/> Money Supply | <input type="checkbox"/> Job Vacancy Rate | <input type="checkbox"/> Stock Exchange |



Streamlit App with multiple selections

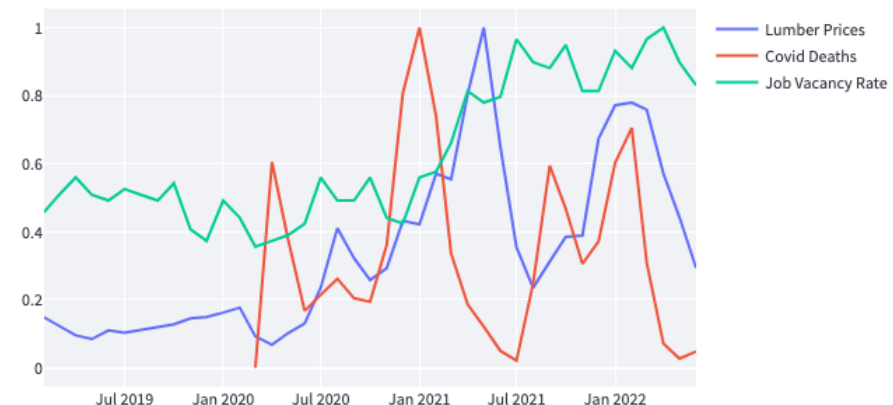
- Normalized Data uses the same scale
- Streamlit automatically assigns colors and adds the legend

Lumber Prices and Other Economic Metrics

Enter Start Date: 2019/01/01

Enter End Date: 2022/08/09

<input checked="" type="checkbox"/> Lumber Prices	<input type="checkbox"/> CPI	<input type="checkbox"/> Elect Prod	<input type="checkbox"/> Gas Demand
<input type="checkbox"/> Interest Rates	<input type="checkbox"/> PPI	<input type="checkbox"/> Oil Prod	<input type="checkbox"/> Oil Demand
<input type="checkbox"/> Housing Price	<input type="checkbox"/> Sentiment Index	<input type="checkbox"/> Ind Prod	<input type="checkbox"/> Gasoline Demand
<input type="checkbox"/> Covid Cases	<input type="checkbox"/> Govt Debt	<input type="checkbox"/> Wages Manuf	<input type="checkbox"/> Retail Trade
<input checked="" type="checkbox"/> Covid Deaths	<input type="checkbox"/> Money Supply	<input checked="" type="checkbox"/> Job Vacancy Rate	<input type="checkbox"/> Stock Exchange



Conclusions and Next Steps

- Explore additional data sources.
- Build a predictive model for pricing.
- Further Automate the process.