**Outline for README, Slide Deck, Presentation, Notebook order**

**Title:** Analysis of the Relationships Between the Federal Fund Rate, Mortgage Rates and Home Prices in the United States from 2018-2023

**Introduction:**

* 1. Public observations, opinions about this relationship
  2. Why we chose this topic
  3. Our predictions about what we will find
  4. Why only a 5 year snapshot?

**Questions:**

1. How does the federal fund rate impact the average home mortgage rate?
2. How do home mortgage rates affect/impact median sale price?
3. How do home mortgage rates affect/impact listing price?
4. How does the mortgage interest rate correlate to days on the market?
5. How does the mortgage interest rate correlate to housing inventory?

**Data used:**

1. API (website)
2. Zillow CSVs (website)

**Data cleaning and exploration:**

* 1. API: Call the API (how, docs vs. packages, etc.)
  2. API: data frames
  3. CSVs: How did we decide to clean our csv files? How did we do it?
  4. Starting graphs:
  5. First analysis results: mortgage rates don’t impact the other variables as much as our assumption

**Relevant data to analysis**

Compelling data: the correlations that we found on first analysis

**Second round questions (additional graphs)**

* 1. How does inventory correlate to sales price
  2. If not linear regression, then polynomial?
  3. What about list price & sales price
  4. Do we even care about days on market?

**Analysis**

* 1. How *is* everything related?
  2. Prime rate vs. mortgage rate
  3. Polynomial regressions for sales price & mortgage rate
  4. Polynomial regressions for list price & mortgage rate
  5. Home inventory vs sales price = supply & demand (duh)
  6. Linear regression for home inventory vs sales price

**Further Considerations & Additional Questions**

If we had two more weeks we would analyze:

* 1. Relevant dates over the last 5 years?
     1. The pandemic
     2. Political turmoil
     3. The economy & the gov’ts response
  2. The top 25 markets/ inventory

**Outro**

Takeaways:

* 1. The most correlated, the least correlated
  2. What do we know for sure?
  3. What would we like to know for sure?
  4. How would we go about it?