Project 4: Predicting if a Home is a good investment right now based on historical data

* <https://www.calculator.net/rental-property-calculator.html>
  + Goal?
* Factors we need to consider for real estate investment
  + discounted NOI
    - Net Operating Income
    - Need to think of a Cap Rate
    - reflects the earnings that the property will generate after factoring in operating expenses
  + gross income multiplier approach
  + city migration
  + city development patterns
  + vacancy rates
    - census data but only goes back to 2010
* Result:
* can determine which local areas are most likely to experience the fastest rate of appreciation.
* No matter which approach is used, the most important predictor of a strategy's success is how well it is researched.
* Potential data sets
  + Can have multiple datasets but just join them on Date and make it monthly so it’s uniform
  + House\_Price\_Index(S&P/Case-Shiller) - **ChicagoHPI**
  + Mortgage\_Rate (30 yers) - **Mortgage\_30\_Year**
    - https://www.freddiemac.com/pmms
    - https://fred.stlouisfed.org/series/MORTGAGE30US
  + Personal\_Income - **Personal Income**
    - <https://fred.stlouisfed.org/series/CHIC917PCPI>
  + Resident\_Population
    - <https://fred.stlouisfed.org/series/CHIPOP>
    - Yearly data and only until 2000
  + Unemployment\_Rate - **Unemployment Rate in Chicago** csv (1990)
  + GDP
    - <https://fred.stlouisfed.org/series/NGMP16980>
    - Only goes back to 2001
  + Crime\_Rate
    - <https://fred.stlouisfed.org/series/FBITC017031>
    - annual and only goes back to 2011
    - <https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present-Dashboard/5cd6-ry5g>
      * daily
  + Percent\_With\_Mortgage\_Debt
  + Median\_Debt
  + Percent\_With\_Severely\_Delinquent\_Debt
  + New\_Structures - **NewHousingStructures**
  + Economic\_Conditions\_Index
    - <https://fred.stlouisfed.org/series/CHIAGRIDX>
    - 1990 to 2019 discontinued
  + CPI all items less shelter – **CPI\_Housing**
    - <https://beta.bls.gov/dataViewer/view/timeseries/CUURS23ASAH;jsessionid=23229E3927A9D5A587538AA3788880B0>
  + Housing Inventory: Active Listing Count in Chicago-Naperville-Elgin, IL-IN-WI
    - FRED; only goes back to 2016
  + CBOE Volatility Index: VIX -**CBOE Volatility Index**
    - Chicago daily market volatility
    - <https://fred.stlouisfed.org/series/VIXCLS>
  + Neighborhood Safety Rates
    - <https://www.veryapt.com/guides/safety/L664-chicago/>
* Websites:
  + <https://learn.roofstock.com/blog/chicago-real-estate-market>
  + <https://figshare.com/articles/dataset/housing_price_index_prediction_project_data/14253278/1>
  + <https://www.neighborhoodscout.com/il/chicago/real-estate>
  + <https://tradingeconomics.com/united-states/single-family-home-prices>
  + <https://data.census.gov/cedsci/table?q=DP04&g=310XX00US16980&tid=ACSDP5Y2020.DP04>
    - Only goes back to 2010
  + <https://data.cityofchicago.org/>
  + <https://data.cityofchicago.org/Community-Economic-Development/Affordable-Rental-Housing-Developments/s6ha-ppgi>