In this project, we'll be working as a data analyst for a prominent real estate investment firm. Our task is to conduct in-depth research and provide expert insights to a high-profile client who is looking to invest in residential properties.

Our client wants to know which cities or regions have the highest potential for a profitable real estate investment.

Here's what your project entails:

1. Data Collection: Utilize the Real Estate Data API to extract and aggregate a year's worth of comprehensive data on residential property sales, population growth, job market statistics, and other relevant factors for specific cities or areas of interest.
   1. Target cities: Austin, New York, San Francisco, Pittsburgh, Chicago, Memphis, Denver, Las Vegas (depending on where we find adequate data)
   2. Residential property sales (ideally over time)
   3. Population growth
   4. Job market stats – unemployment, top job types
   5. Property Tax / State Income Tax
   6. Potentially include rental data
2. Market Trends: Analyze the data to identify cities or regions where property prices have been steadily increasing over the past year. Uncover hidden gems with untapped potential that could yield significant returns for your client.
   1. Are there any cities that stand out not included in target list?
   2. Within target list:
      1. Are property sales trending up or down (quantity and price)? Potentially include rental data
      2. How do property tax and state income tax compare?
      3. How does population growth compare?
      4. How does unemployment compare?
      5. What type of jobs are most common?
3. Demographic Analysis: Dig deeper into the demographic data provided by the API to understand the local population's preferences, buying behavior, and trends. Determine how these factors could impact future property values and demand.
   1. Income
      1. How does income distribution compare?
   2. Size of house (# of rooms or sq. footage – not sure what is available)
      1. Is there a trend over time by size?
4. Risk Assessment: Crime
   1. What are crime trends?
      1. Violent crime
      2. Property Crime
5. Recommendations: Based on our thorough analysis, provide well-founded recommendations to our client on which cities or areas are the most promising for real estate investment. Back your suggestions with concrete data-driven evidence to instill confidence in your findings.

Throughout this project, you'll gain valuable experience in data analysis, market research, and making informed investment decisions. The insights we provide will shape our client's investment strategy and potentially lead to lucrative opportunities in the ever-changing real estate market.