**Business Problem: Optimizing Real Estate Investments in Boston**

**Pitch:**

In the ever-evolving landscape of real estate, making informed investment decisions is the key to success. Our consulting firm specializes in leveraging cutting-edge data analytics to provide actionable insights for real estate stakeholders.

**Problem Statement:** Real estate investors often face challenges in identifying lucrative investment opportunities, understanding neighborhood dynamics, and optimizing property portfolios. Our goal is to assist you in making data-driven decisions that lead to increased returns and reduced risk.

**Our Solution:** Through a comprehensive analysis of Boston's real estate data, we offer a tailored solution to optimize your investment strategy. Our approach involves merging and cleaning datasets, imputing missing values, and grouping properties based on neighborhood characteristics.

**Key Steps in Our Analysis:**

1. **Data Integration:** We merge datasets released by the City of Boston, independent companies and surveyors to create a unified and enriched dataset, providing a holistic view of property attributes, valuations, and geographic details.
2. **Data Cleaning:** We identify and addresses data inconsistencies, removes duplicates, and imputes missing values using techniques like KNN imputation.
3. **Neighborhood Analysis:** We leverage geospatial data to assign each property to a specific Boston neighborhood using boundaries released by the government. This enables us to analyze trends, assess property values, and identify investment opportunities at the neighborhood level.
4. **Performance Metrics:** We calculate key performance metrics like change in property assessment values over the past 2 decades, various property-related features such as building details, land characteristics, and occupancy information, which can be analyzed to understand the environmental aspects and conditions of different properties in a city or region. These metrics provide nuanced insights into property performance and neighborhood dynamics.
5. **Visualizations:** Our geospatial visualizations, including heat maps and property characteristics distributions, offer an intuitive understanding of Boston's real estate landscape. These visualizations empower you to identify areas with high potential and make strategic investment decisions according to your needs.