Case

Emily recently joined MetroLiving Realty Group (MetroLiving), a real estate agency specializing in residential properties in the Washington D.C. metropolitan area. MetroLiving's core business involves assisting clients in buying and selling single-family homes, townhouses, and condominiums in neighborhoods across Washington D.C., Maryland, and Virginia.

In the fast-paced real estate market of the D.C. metro area, staying ahead of trends and providing valuable insights to clients is essential for MetroLiving's success. Emily's role as a data analyst revolves around analyzing market data and presenting actionable recommendations to the company's leadership team.

While reviewing MetroLiving's existing market reports, Emily noticed an opportunity to enhance the analysis by investigating the impact of various factors on property prices. One critical aspect Emily aims to explore is the influence of neighborhood amenities, such as proximity to parks, schools, and public transportation, on property values. By leveraging data analytics techniques, Emily intends to identify neighborhoods with the highest potential for price appreciation based on their amenities.

Which neighborhoods should Emily recommend MetroLiving focus on to maximize price increases associated with neighborhood amenities? Write a brief summary of the evidence that she should use to support this recommendation.

Tasks

- **Data Cleaning:** Identify and address any inconsistencies or missing values in the dataset to ensure accuracy.
- **Exploratory Analysis:** Explore the relationship between neighborhood amenities (proximity to parks, schools, and public transportation) and property prices.
  - **Regression Analysis:** You may use any regression analysis model to analyze the impact of various factors (neighborhood amenities, property type, etc.) on property prices. You will have to justify the reason for choosing one.
  - If you want, you can use other analysis techniques too. But you will have to justify your choice of solution.
- **Model Comparison:** In case you apply multiple analysis models, you will need to compare different models to determine which one provides the best fit for predicting property prices based on neighborhood amenities.
- **Communicating Results:** Present a clear and concise summary of the findings, including the most influential neighborhood amenities and their impact on property prices. Use visualizations and descriptive statistics to support the recommendations. Make sure to back your results up with data.