**Unravelling Airbnb-NY Listings: Python Based EDA Approach**

**Description:**

This project aims to generate data-driven recommendations for pricing strategies, location targeting, and property management for different Room-types, enabling hosts and stakeholders to make more informed decisions that maximize profitability and improve guest satisfaction, by leveraging Python-based Exploratory Data Analysis (EDA), analysing Airbnb's New York listings with libraries like Pandas, Numpy, Seaborn, and Matplotlib. This involves exploration of various factors impacting including but not limited to operations, uncovering key insights into pricing trends, location dynamics, property types, amenities, and customer ratings. Ultimately, the goal is to identify patterns and correlations that optimize decision-making processes to maximize profitability and improve guest satisfaction.

**Data Dictionary:**

| **Column Name** | **Description** | **dtype** |
| --- | --- | --- |
| **Id** | Unique identifier for each listing. | float64 |
| **name** | Name or title of the listing. | object |
| **host\_id** | Unique identifier for the host. | Int64 |
| **host\_name** | Name of the host managing the listing. | object |
| **neighbourhood\_group** | Geographic region or group to which the neighborhood belongs. | object |
| **neighbourhood** | Specific neighborhood where the listing is located. | object |
| **latitude** | Latitude coordinate of the listing’s location. | Float64 |
| **longitude** | Longitude coordinate of the listing’s location. | Float64 |
| **room\_type** | Type of room being offered (e.g., Entire home/apt, Private room, Hotel room, Shared room). | object |
| **price** | Price per night for booking the listing. | float64 |
| **minimum\_nights** | Minimum number of nights required for booking. | float64 |
| **number\_of\_reviews** | Total number of reviews the listing has received. | float64 |
| **last\_review** | Date when the last review was posted. | object |
| **reviews\_per\_month** | Average number of reviews per month over a specified time period. | Float64 |
| **calculated\_host\_listings\_count** | - | Float64 |
| **availability\_365** | Number of days in a year that the listing is available for booking. | Float64 |
| **number\_of\_reviews\_ltm** | Number of reviews in the last twelve months (Last Twelve Months). | Float64 |
| **license** | License or legal code for the listing (if applicable). | object |
| **rating** | The average rating of the listing, based on customer reviews. | object |
| **bedrooms** | Number of bedrooms in the listing. | object |
| **beds** | Number of beds in the listing. | Int64 |
| **baths** | Number of bathrooms in the listing. | object |

**EDA:**

**Perform and Analyse:**

>>Univariate: Examine the key individual variables, such as the distribution of pricing across listings, the frequency of availability, and the count of bedrooms, which can help identify patterns and trends that can provide a clearer understanding of the dataset's characteristics & thereby gaining insights into market trends, demand patterns, and listing characteristics, helping hosts and stakeholders make informed decisions.

>> Provide insights into regional pricing patterns and help identify trends in property value across various areas, which is distribution of listings across different neighbourhoods, along with the corresponding mean price.

>> Bivariate**:** Explore the relationships between major attributes and shedding light on potential dependencies and trends within the dataset to uncover key insights into how location, guest feedback, and accommodation type influence pricing patterns.

>> Identify the top correlations between different attributes within the dataset, revealing key relationships and valuable insights into how various factors interact and influence each other.

>> Any more insights that can add value into the characteristics of this report are welcome.