# Project- Part A: Airbnb Price Prediction and Insights

# Data Dictionary:

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| **Variable** | **Description** | **Type** | **Unit** |
| **id** | Unique identifier for the listing | String | - |
| **log\_price** | Log-transformed price of the listing | Float | - |
| **property\_type** | Type of property (e.g., Apartment, House) | String | - |
| **room\_type** | Type of room offered (e.g., Entire home/apt, Private room) | String | - |
| **amenities** | List of amenities available at the property | String | - |
| **accommodates** | Number of guests the property can accommodate | Integer | People |
| **bathrooms** | Number of bathrooms in the listing | Integer/Float | - |
| **bed\_type** | Type of bed provided (e.g., Real Bed, Futon) | String | - |
| **cancellation\_policy** | Cancellation policy of the host (e.g., Moderate, Strict) | String | - |
| **cleaning\_fee** | Indicates if a cleaning fee is charged (TRUE/FALSE) | Boolean | - |
| **city** | City where the property is located | String | - |
| **description** | Description of the property provided by the host | String | - |
| **first\_review** | Date of the first review for the listing | Date | DD-MM-YYYY |
| **host\_has\_profile\_pic** | Indicates if the host has a profile picture (t/f) | Boolean | - |
| **host\_identity\_verified** | Indicates if the host's identity is verified (t/f) | Boolean | - |
| **host\_response\_rate** | Host's response rate (e.g., 100%) | String | Percentage |
| **host\_since** | Date when the host joined Airbnb | Date | DD-MM-YYYY |
| **instant\_bookable** | Indicates if the listing can be booked instantly (t/f) | Boolean | - |
| **last\_review** | Date of the most recent review for the listing | Date | DD-MM-YYYY |
| **latitude** | Latitude coordinate of the listing's location | Float | Degrees |
| **longitude** | Longitude coordinate of the listing's location | Float | Degrees |
| **name** | Name/title of the listing | String | - |
| **neighbourhood** | Neighborhood where the listing is located | String | - |
| **number\_of\_reviews** | Total number of reviews the listing has received | Integer | - |
| **review\_scores\_rating** | Average review score for the listing | Float | - |
| **thumbnail\_url** | URL for the thumbnail image of the listing (may be empty) | String | - |
| **zipcode** | Zip code of the property's location | String | - |
| **bedrooms** | Number of bedrooms in the listing | Integer | - |
| **beds** | Number of beds in the listing | Integer | - |

**Part B: Customer Churn Prediction**

**Data Dictionary:**

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| --- | --- | --- | --- |
| **Variable** | **Description** | **Type** | **Unit** |
| **customerID** | Unique ID for the customer | String | - |
| **gender** | Gender of the customer | String | - |
| **SeniorCitizen** | Whether the customer is a senior citizen (0: No, 1: Yes) | Binary | - |
| **Partner** | Whether the customer has a partner (Yes/No) | String | - |
| **Dependents** | Whether the customer has dependents (Yes/No) | String | - |
| **tenure** | Number of months the customer has stayed with the company | Integer | Months |
| **PhoneService** | Whether the customer has phone service (Yes/No) | String | - |
| **MultipleLines** | Whether the customer has multiple lines (Yes/No) | String | - |
| **InternetService** | Customer’s internet service provider (DSL, Fiber optic, No) | String | - |
| **OnlineSecurity** | Whether the customer has online security add-on (Yes/No) | String | - |
| **OnlineBackup** | Whether the customer has online backup add-on (Yes/No) | String | - |
| **DeviceProtection** | Whether the customer has device protection add-on (Yes/No) | String | - |
| **TechSupport** | Whether the customer has tech support add-on (Yes/No) | String | - |
| **StreamingTV** | Whether the customer has streaming TV add-on (Yes/No) | String | - |
| **StreamingMovies** | Whether the customer has streaming movies add-on (Yes/No) | String | - |
| **Contract** | Type of contract the customer has (Month-to-month, One year, Two year) | String | - |
| **PaperlessBilling** | Whether the customer uses paperless billing (Yes/No) | String | - |
| **PaymentMethod** | Customer’s payment method (Electronic check, Mailed check, etc.) | String | - |
| **MonthlyCharges** | The amount charged to the customer monthly | Float | USD |
| **TotalCharges** | The total amount charged to the customer | Float | USD |
| **Churn** | Whether the customer churned (Yes/No) | String | - |