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| Sydney Airbnb Executive Summary |
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# Abstract

In this document, we introduce, Sydney Airbnb, an advanced property analysis tool that empowers users to gain comprehensive insights into real estate dynamics effortlessly. Tailored for simplicity and precision, this software offers an array of indispensable features. Users can seamlessly generate detailed reports for a specified suburb over a selected timeframe, providing a holistic view of property listings. The dynamic charting functionality enables the visualization of price distributions, fostering a nuanced understanding of market trends.

Additionally, our software excels in keyword-driven searches, allowing users to retrieve records matching specific criteria, such as amenities like a pool or pet-friendly options. Delve deeper into customer sentiments by analyzing cleanliness-related comments, leveraging the capability to identify multiple keywords associated with cleanliness factors.

Efficiency is paramount, and Sydney Airbnb excels in delivering targeted results. Users can effortlessly obtain the total count of apartments with a specified bedroom number, such as 3, streamlining property selection. Elevate your property analysis experience with Sydney Airbnb, where data-driven decision-making meets user-friendly functionality.

# Introduction

In response to the evolving real estate landscape influenced by inflation and fluctuating interest rates, Sydney Airbnb, aims to empower investors and real estate agencies to make well-informed decisions. Focused on the Sydney market, the app leverages Airbnb dataset insights, providing a comprehensive tool for assessing short-term accommodation leasing trends. Real estate agencies can utilize this platform to guide investors on profitable choices and assist homebuyers in making informed decisions about property purchases.

This summary serves as a project overview and scope document for the creation of an application under the Sydney Airbnb initiative. The purpose is to clearly understand the project's goals and the functionality of the software. It has a formal distribution of work for the given timeframe to accomplish it in, made using the Gantt Chart and Work Breakdown Structure (WBS). We did find the original plan to be slightly deviate in the regards to the software design process and developing stage for the app.

This document explicitly mentions the specific date range covered by the data i.e., 17th Dec 2018 to 6th Dec 2019, but it mentions that the application will allow users to select a "user-selected period" for various analysis tasks. The actual date range would be determined by users when they interact with the application. Other inputs made by the user will be dependent on the output they are seeking, for instance, the listings in a specific suburb can be found if the user inputs the time range and suburb name specifying the location of interest. From a budgeting point of view, the user can input the timeframe and no of suburbs outputting mean prices for each suburb.

The focus of the application is on data retrieval and visual display, allowing users to define search parameters and analyze records containing specific keywords. Technologies used to build the application include Python 3, Anaconda, Tkinter (a GUI toolkit for Python), dataframe (for database operation), and Excel (for data analysis and visualization).

In summary, this report sets the stage for the development of a software application focused on Airbnb data analysis in Sydney, to help real estate workers find the details of a property within a specific suburb, and price details.

Analysis 1: Listings All Records

This feature's main objective is to give consumers thorough details about real estate listings in a certain (suburb) for the duration of their choice. Users have access to in-depth information on the real estate market in their desired area during a predetermined time period, which helps them make decisions about buying, selling, or renting homes.

The function entails getting information about each property listing, including its ID, date, availability, price, URL, and scrap id for the chosen time frame. Users can customize the time range according to their needs, allowing them to analyze real estate trends over short or extended periods for specific suburbs.

The user experience is improved by intuitive design components like listing and URL links. Effective database queries are essential, especially when working with many listings or a wide time period considering future perspectives.

Analysis 2: Distribution of Prices Chart

This feature's ultimate objective is to graphically depict the price distribution of properties over a user-selected time span. Users may learn about the range, trends, and variability of property values, which can help them better comprehend the dynamics of the real estate market.

The function includes compiling pricing information from real estate listings for the time period selected. The distribution of real estate values is shown on a chart, such as a histogram. Users are helped by the visual depiction to comprehend the general pricing landscape, recognize typical price ranges, and discover outliers. Users can analyse how price patterns change by comparing the distribution over various time periods for each suburb.

Designed the charts to be aesthetically pleasing and simple to understand for users with different degrees of data analysis experience. The usability of this feature, the quality of the data representation, and the clarity of the user insights are all important factors in its success.

Analysis 3: Search Keywords

The main objective is to make it possible for users to search and retrieve real estate listings that contain certain keywords offering a specialized and thorough search experience. Users may easily locate homes that meet particular requirements to tailor their search, such as having features like a pool or being pet friendly.

Within the provided time frame, the system retrieves any entries that match the user's keywords. Create a user-friendly interface that is clear and simple to use for inputting keywords. Users may quickly locate properties that fit certain requirements, improving their ability to make choices in line with their preferences.

The feature facilitates quick filtering of listings, streamlining the property search process.

Analysis 4: Count of Keywords

The analysis of customer evaluations' mentions of cleanliness-related aspects in the context of property or service reviews is the main goal.

This function offers useful perspectives into how customers feel about cleanliness, assisting property management in upholding high standards and resolving possible issues.

By providing insights into client satisfaction or unhappiness with cleanliness, the function aids in decision-making and enables proactive efforts to resolve complaints.

Analysis 5: Number of Apartment with Specified Number of Bedrooms

The main goal is to show customers how many apartments are listed overall based on the number of bedrooms they choose. This tool streamlines the apartment search process by enabling users to rapidly evaluate the availability of flats depending on their unique bedroom choices.

The system finds and counts the total number of flat listings that meet the stated criteria after users enter the desired number of bedrooms. In accordance with the chosen number of bedrooms, the system aggregates and counts records. The overall count sheds light on how flats are distributed in each region across various bedroom arrangements.