**AIRBNB PRICE PREDICTION**

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| **Group no: 06** |
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Problem statement

**INTRODUCTION**: Airbnb has become an increasingly popular platform for both hosts and guests to find short-term accommodation. Our goal is to provide local, authentic, diverse, inclusive, and sustainable healthy travel that enables individuals to feel at home everywhere. With Airbnb, you can explore the world in a whole new way and find the perfect place to stay for any occasion. Whether you want a charming cabin in the woods or a villa on the coast, we have accommodations for everyone. In order to optimize pricing and offer budget estimates, it is more crucial to predict the prices of Airbnb listings as they multiply throughout various cities.

1. **What is the problem (including context)?**

* Airbnb price prediction is the process of estimating the cost of an Airbnb rental based on the rental's specific features, such as location, amenities, number of bedrooms, etc. Examining all the features, taking into account the seasonal variations, and predicting the price accurately is a challenging task.

1. **Why is this problem important?**

* Accurate pricing of Airbnb properties is essential for both hosts and customers, as it helps them get the best value for their money.
* By ensuring that all parties are happy with the services they receive, also protects the platform. Prediction of Airbnb prices is crucial to doing this.

1. **How are you going to solve the problem?**

* To solve the Airbnb price prediction problem, we would use data-driven techniques and machine learning algorithms.
* We would start by gathering and examining the data to look for patterns and connections between the variables. Additionally, we will categorize cities into three groups based on their populations (mega, mid, and small).

1. **Which knowledge/skills/tech are needed for this solution?**

* We will use the knowledge of Microsoft Excel, Power BI, Tableau, and Jupyter Notebook.

1. **How does this solution compare to existing solutions, or to previous attempts to solve this problem?**

* The solution proposed compares favorably to existing solutions, as it relies on a combination of data-driven techniques and machine learning algorithms to accurately predict Airbnb prices.
* Previous attempts to solve this problem have relied on simpler techniques, such as linear regression, which may not be as accurate in predicting Airbnb prices.

1. **What are the metrics available to you?**

* Right now we have metrics like Id, name, host Id, neighborhood, Latitude & Longitude, Room type, Price, Minimum nights, no. of reviews, last review, review/month, calculated host listing, availability, license

1. **How do you measure the success of your solution?**

* The success of the suggested solution can be assessed by looking at how well Airbnb price estimates hold true. This can be done by computing the percentage of predictions that are within a specific margin of error by comparing the anticipated prices to the actual prices.

1. **How are you evaluating your solution? And how feasible is it?**

* The algorithm will be put to the test on a different dataset, and the proposed solution will be assessed by evaluating how accurate the predictions are made.
* The ability of the solution will also be evaluated by looking at the time and expense needed to put the concept into practice, as well as any potential restrictions or limitations.
* The possible advantages that the solution might have for Airbnb hosts and customers will also be taken into consideration while evaluating its general viability.

1. **What is the estimated impact of this solution on all stakeholders?**

* The estimated impact of the proposed solution on all stakeholders will depend on the accuracy of the model and the benefits it provides. If the model is accurate and provides significant benefits to hosts and customers, then it could have a positive impact on all stakeholders.

1. **Are there any ethical concerns?**

* There could be ethical concerns related to the use of the proposed solution. The approach might be applied, for instance, to unfairly discriminate against certain renter groups, such as low-income households or renters who possess particular traits.
* Additionally, it could be challenging to explain how predictive models and machine learning algorithms arrive at specific forecasts, which could result in a lack of transparency. Therefore, before applying the suggested solution, it is crucial to think about any potential ethical ramifications.

1. **What are the data sources?**

* Data sources: <http://insideairbnb.com/get-the-data.html>
* If needed further we may use other resources.

1. **What references did you use?**

* Dataset: <http://insideairbnb.com/get-the-data.html>
* Airbnb Website: <https://www.airbnb.ca/>
* Airbnb Disclaimer: <http://insideairbnb.com/about.html>