Airbnb is an online American marketplace that allows property owners to list their properties on the platform and connect with travelers who are looking for a place to stay. Suppose you are working as a data analyst at Airbnb in Amsterdam. You are asked to analyze the landscape of Airbnb in the city and share some insights with your managers.  
   
You will create dashboards in Tableau as well as analyze the data in Python to discover interesting insights for the Airbnb listings in the city of Amsterdam. After that, you need to document these insights in an executive summary and share them with your managers. Here’s the overall breakup of the assignment deliverables and their allocated weights.

* Assignment Part I - Tableau Dashboards (45%)
* Assignment Part II - Python Analysis (45%)
* Executive Summary (10%)

**Data**

Internally, Airbnb collects data from its website to understand how they affect the residential real estate rental market. The data are freely available for public use [here](http://insideairbnb.com/get-the-data.html)

For this assignment, we need the listings data for the city of Amsterdam. Already a subset of the raw data that is available has been collected from the aforementioned website.

**Assignment Part I - Tableau Dashboards**

**Overview Dashboard I**

Create a dashboard with an overview of Airbnb for your city. This dashboard should give the reader an overall perspective of Airbnb. It should allow the user to choose a neighborhood and the dashboard should **at the least display the following aspects**:

* A Map Chart showing the listings in the chosen neighborhood
* List of summary metrics like number of listings, the total number of reviews, average rating, and average price
* Distribution of different types of rooms available in the neighborhood.

**Overview Dashboard II**

Create another dashboard that dives deeper into the characteristics of the listings in Amsterdam. Here again, the user should be able to choose a neighbor and your dashboard should **at the least display the following aspects**:

* A chart showing the growth of Airbnb listings across the different years in the neighborhood.
* A chart displaying the**overview of top hosts** in the neighborhood.
* Pricing distribution across the different room types in the neighborhood.

**Charts and Dashboards guidelines**

The charts should be informative to your analysis question and also demonstrate an understanding of the principles of data visualization covered in the modules. The guidelines for the charts are as follows:

* Each dashboard should have at least **2 distinct types of charts**, so each chart must contain a different type of visual that we covered in the modules.
* Each chart should be appropriately labeled to increase clarity.
* Color must be used consistently throughout the dashboard.
* Instructions and captions with the data source must be included in the dashboards.
* **IMPORTANT** - Your primary focus should be on ensuring that your dashboards contain the necessary charts that display the information mentioned in the problem statement above. However, you are encouraged to be creative with your dashboarding skills and improve the visualizations even further.

Each dashboard has different requirements, although there are some common themes. For each dashboard, we expect you to follow these guidelines at a minimum:

* Include informative and dynamic title(s) for the dashboard and/or chart and all appropriate chart elements such as axes.
* Reduce clutter to create an attractive and informative dashboard.
* Use color judiciously, including the background, gridlines, labels, bars/shapes, and so on.
* Implement dynamic elements so the reader can explore information about the neighborhoods.
* Include a textbox with introductions/instructions and a caption for the data source.

**Assignment Part II - Python Analysis**

In the next part of the assignment, you’ll be analyzing the data further using the tools and techniques you have learned in the EDA I and II modules.

**Python Analysis Guidelines**

* Go through the data dictionary thoroughly before starting the assignment. That will give you a good idea of what each column represents before you begin the analysis.

* Read each instruction carefully, identify the task to be performed, and only then write the required code. The assignment is meant to be straightforward. You do not need to perform additional analyses that are not requested explicitly. However you are encouraged to perform a few additional analyses to get deeper into the insights

* Some of the tasks might require using functions you may not have used previously. In such cases, you should rely on the library documentation you referred to in the modules. Please understand that completing this assignment is a learning process, and research is part of it.

* Always run the cells of the Notebook sequentially, restart the kernel, and run all the cells to avoid runtime errors.

* Many of the questions will require you to view them from multiple angles. **You have been asked to observe any trends in the visualizations and provide insights for these trends.**In other words, there will be no fixed answers. You are expected to apply your problem-solving skills to come up with solutions and also document your work appropriately; both of these are part of the assignment grading.

**Executive Summary**

After performing the Tableau and the Python analysis, your final task is to summarize the insights from the dashboards and the Jupyter notebook and document them in an executive summary.

* The document should be structured and have a proper narrative regarding the Airbnb listings in the city of Amsterdam
* All the necessary visualizations from the Tableau dashboards and the Python Notebook should be present in the summary document.
* Set of insights/findings/recommendations for each dashboard, along with snapshots in pointers (max. 50 words each)
* Also, include your insights and observations from the analysis performed in Python
* A paragraph summarizing all the above-mentioned points at a top-level (max. 50 words)
* All the above should not be more than 500-600 words.