Airbnb: Host Recommender System

- **What?**
  - A recommender system that will recommend the user Airbnb residences in cities in Europe that they may like, or if they select a particular city, similar cities that they may like, with the aim of allowing them to swap with other users their places for a short period of time.

- **Why?**
  - As a result of COVID-19 an increasing nº of people works remotely even 100% of the time. To escape routine and try something different, they may be interested in swapping their Airbnb with Hosts in cities that are similar or residences that are similar, or both. They could use this recommender system to find such "best suited" cities or residences.

- **How?**
  - Using available Host data from Airbnb from the website: *http://insideairbnb.com/get-the-data.html*
  - Using available cities data from the website: *https://ec.europa.eu/eurostat/web/cities/data/database*

Project Statement

- **Problem statement information**
  - Is it possible to identify features that allow us to recommend to a particular Airbnb Host other residences within Europe that they may like? Without having any previous information about them, how can we make such recommendation and what factors should we consider?

- **Context**
  - COVID 19 has derived in many people having to work remotely. Airbnb Hosts (residence owners) in this situation, may be interested in swapping houses with other Airbnb in Europe to experience other city's life for some weeks, but there is no way of knowing what cities/residences may be best suited considering their own residences and cities as reference, both for them and their counterparts. Criteria for success

- **Scope of solution space**
  - The scope in time is limited to a 2-week study that will consider only information about Hosts available as per 03-10-2021 in Eurostat and "InsideAirnbn.com". The recommender system will make a recommendation of the 10 best residences and/or cities to swap for a given Host.

- **Constrains**
  - There is not quality data available about city features. In particular, we will have many more cities in Airbnb than cities in Eurostat probably. This may be a problem to the extent that maybe interesting features that we have for big cities (e.g., "Transport fee") are not available for smaller cities.

- **Stakeholders**
  - Airbnb Hosts may be interested in using this recommender system to initially scan interesting cities or residences to swap.
  - Airbnb may be interested in analyzing what features about cities/residences are more relevant when making recommendation to a user

- **Data sources**
  - Using available Host data from Airbnb from the website: *http://insideairbnb.com/get-the-data.html*
    - *It contains around 90 features for 500k Airbnb Hosts*
  - Using available cities data from the website: *https://ec.europa.eu/eurostat/web/cities/data/database*
    - *It contains some features that may be useful to characterize cities*