# Airbnb
# New User Bookings Project

# Introduction

## Research Objective

Airbnb's business covers 34,000+ cities across 190+ countries. Being able to accurately identify where new users are heading to is important as it allows Airbnb to recommend rentals that suit customers' needs and as a result, decrease the average time to first booking and improve the site's booking rate overall.

## Research Question

Predict which country new users will book their first trip based on users' demographic data, web session records, and some summary statistics of different countries.

# Data

The datasets for this project are available on Kaggle. They are:

**Training & Testing data:**

- Includes information related to Airbnb accounts such as when the user signed up/ made his/her first booking, sign-up flow, language preference, etc.

**Country data:**

- Includes geographic information of different countries

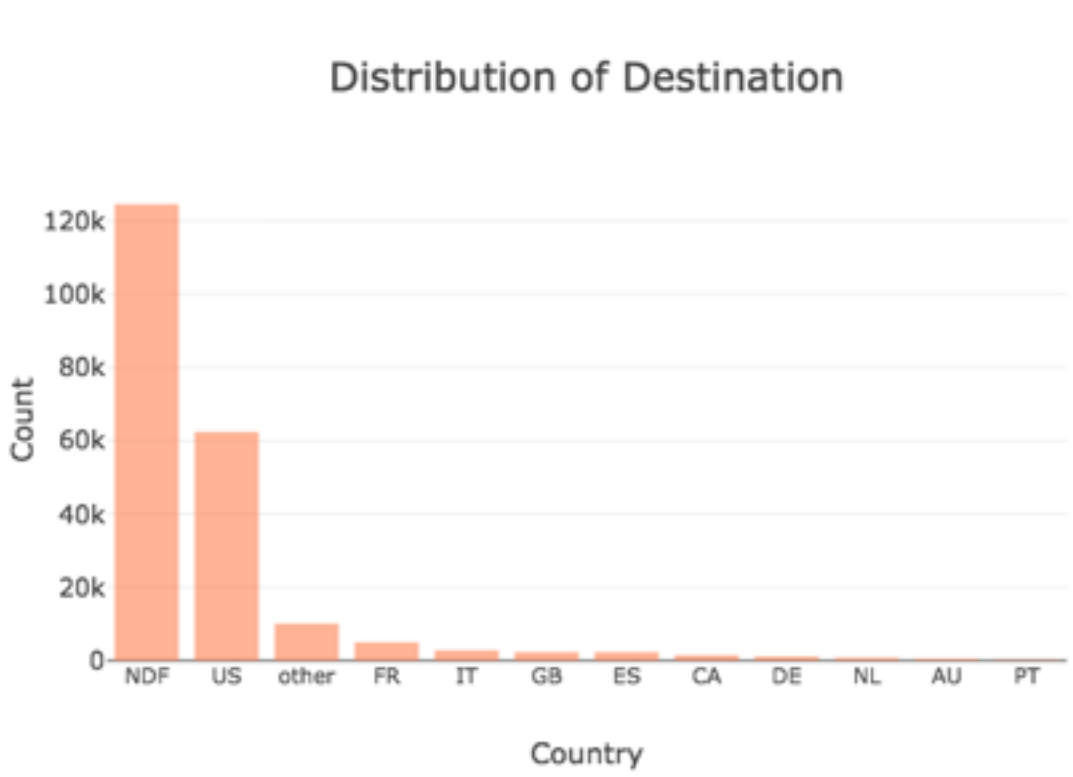
**Session data:**

- Users' web session log

**Age Gender data:**

- Includes different countries' age/ gender splits

# Exploratory Analysis




- Most users did not end up booking a trip; for those who ended up booking, most of them booked a trip to the U.S.

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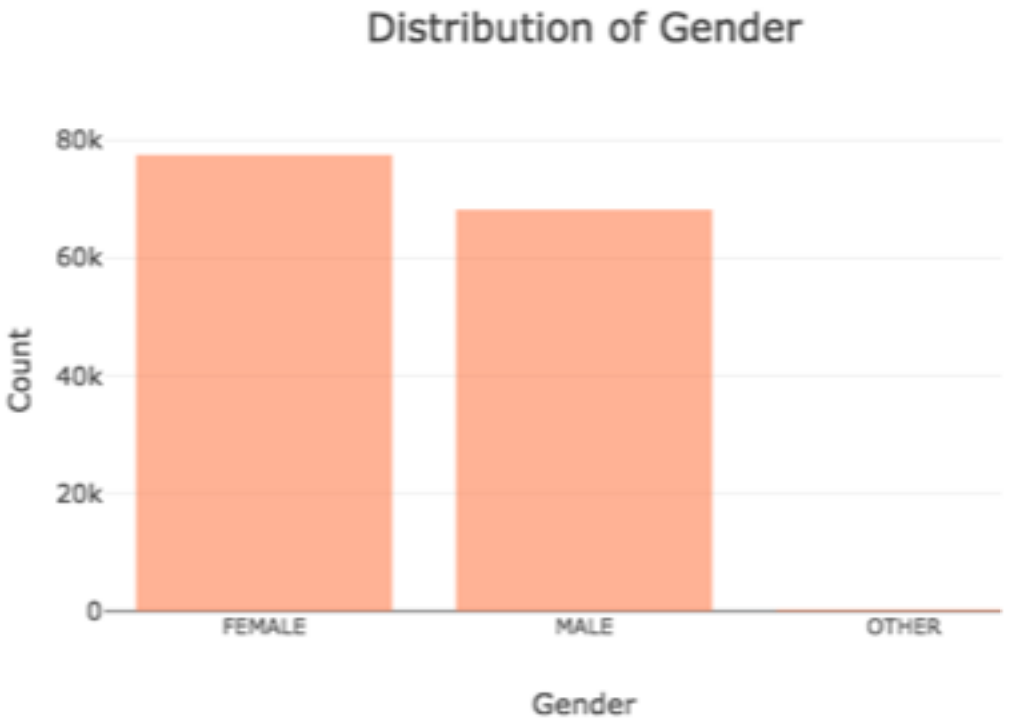



- We have slightly more female users than male. However, male and female users did not seem to show different preference when picking their first destination.

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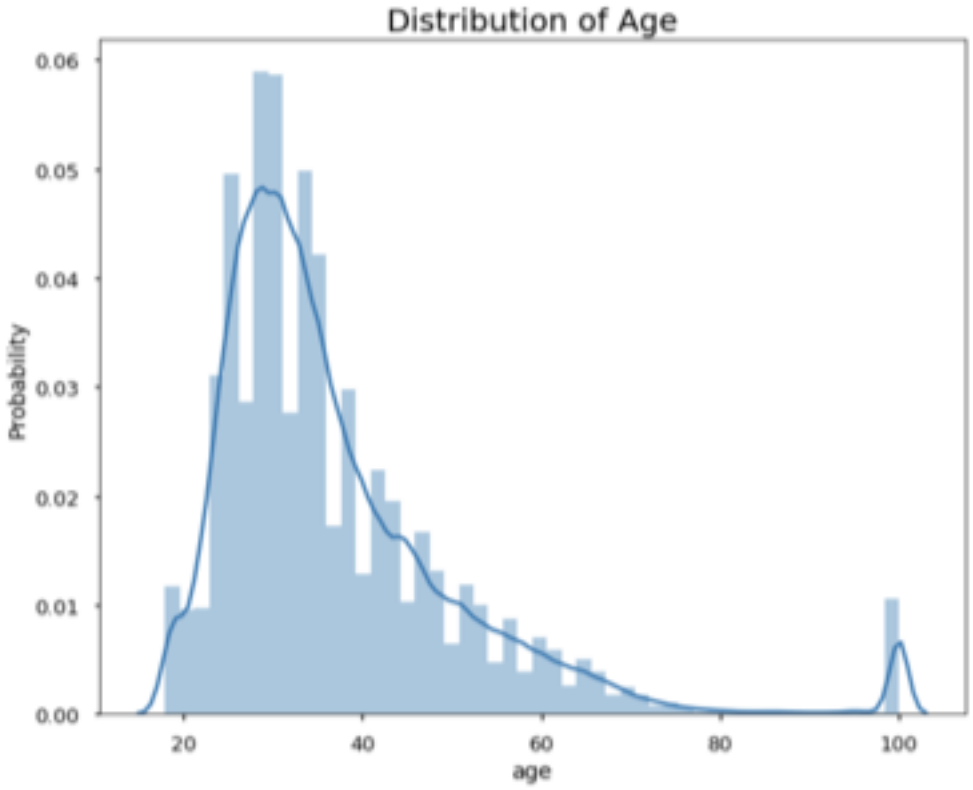


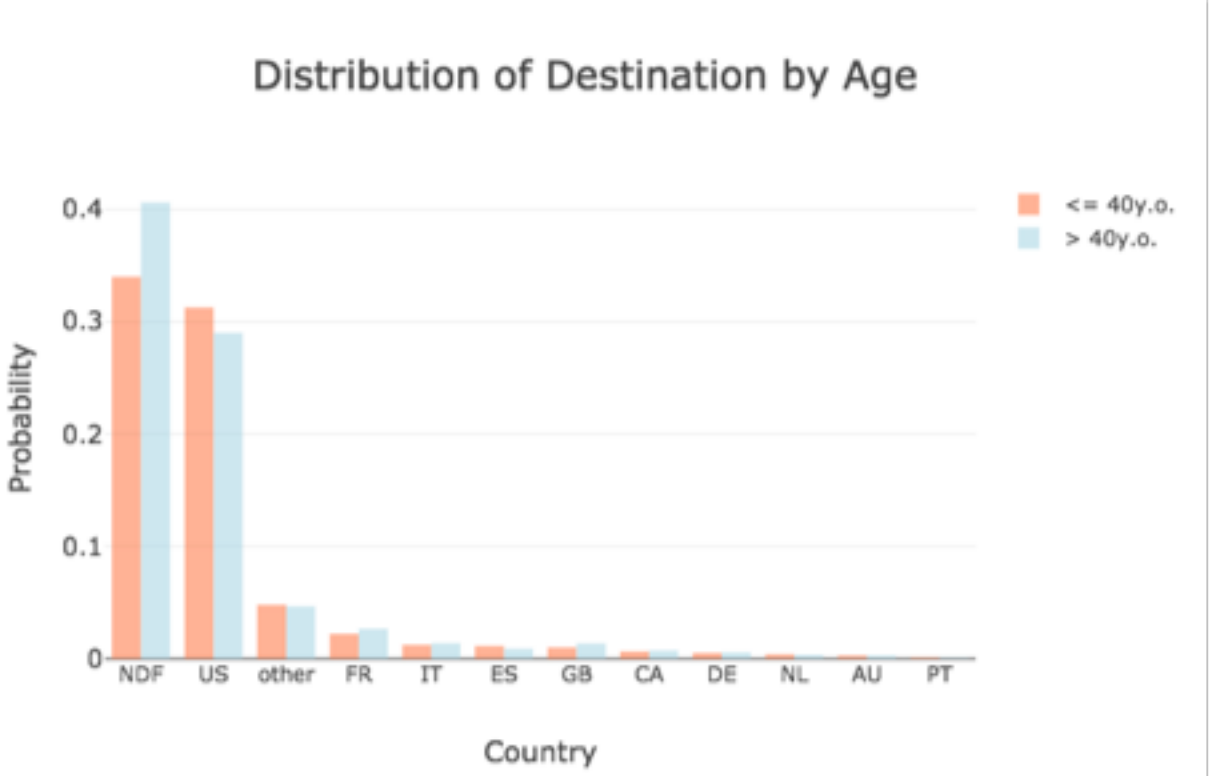


- The majority of Airbnb users are under 40. Younger users (<= 40 years old) had a higher probability of booking a trip (i.e. lower NDF) than those who are > 40 years old.
- A one-tail z test is conducted to test for this hypothesis and the p-value of the test is 7.20e-68. Since the p-value is very close to 0, we reject the null hypothesis and conclude that younger users had a higher probability of booking a trip.

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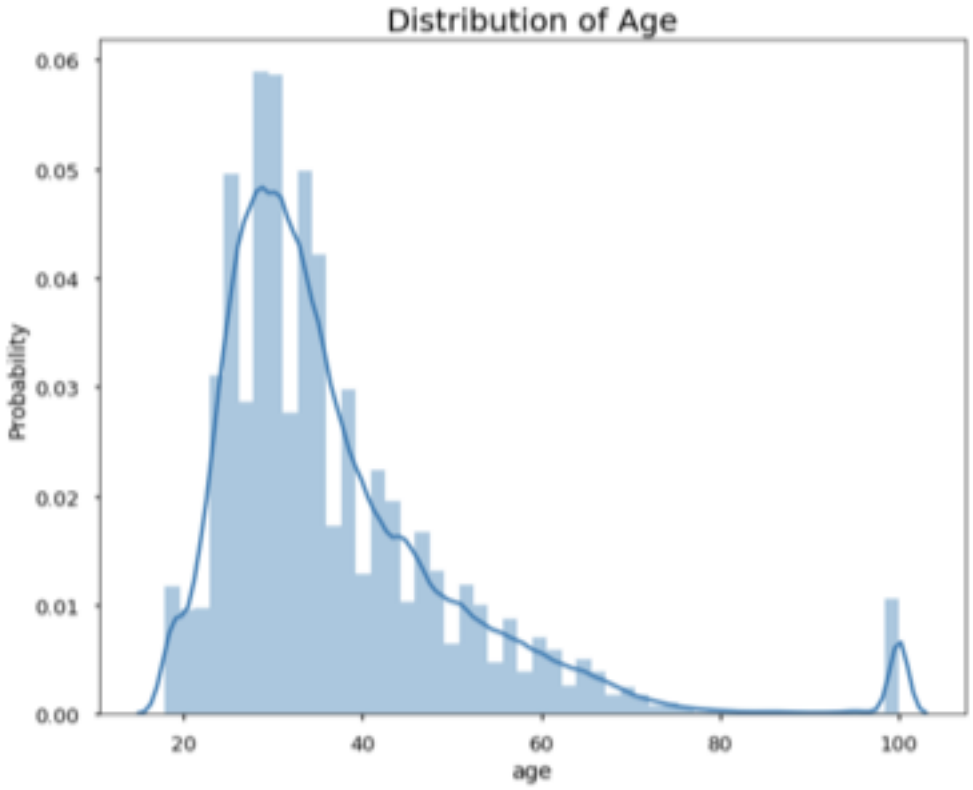
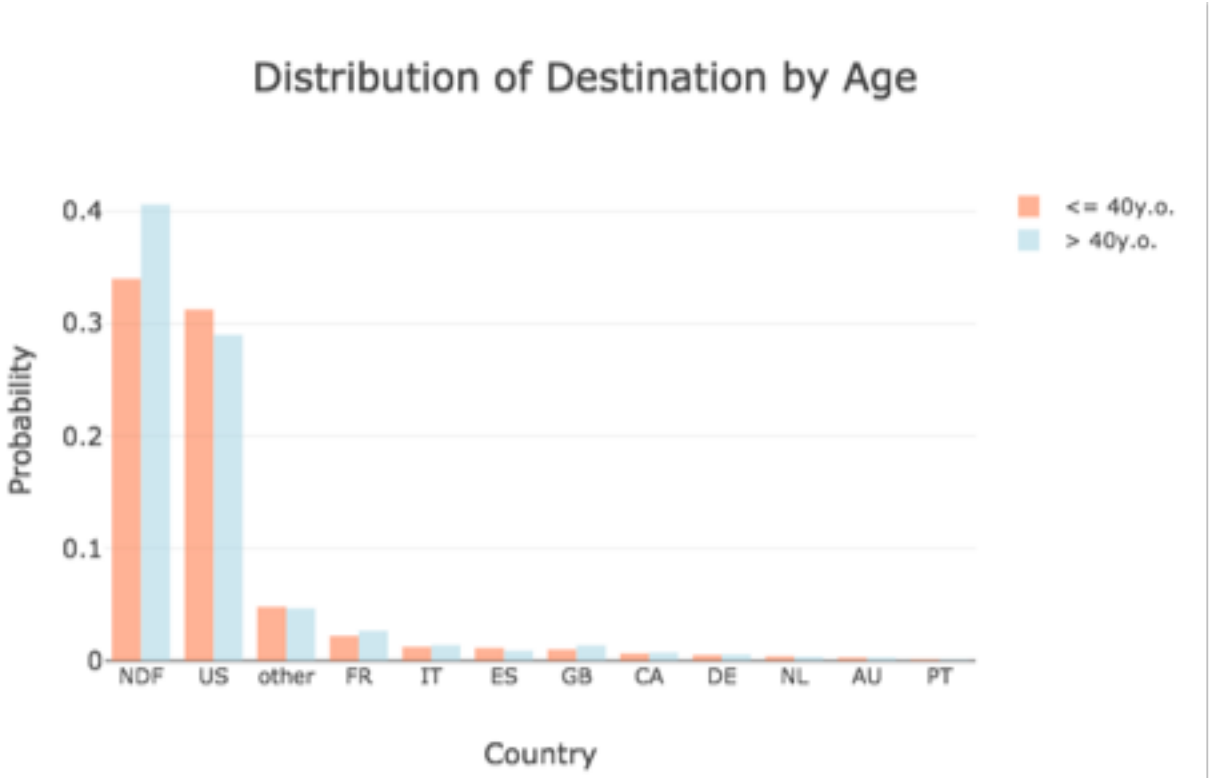
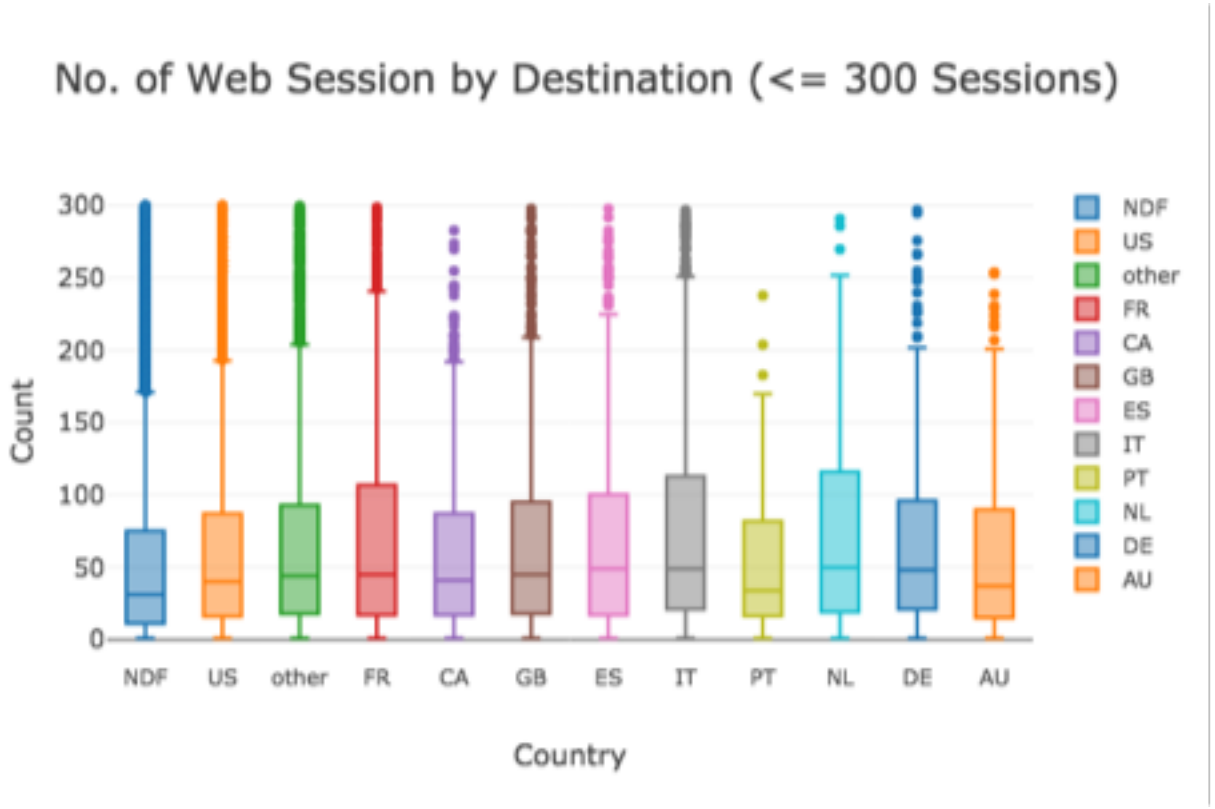


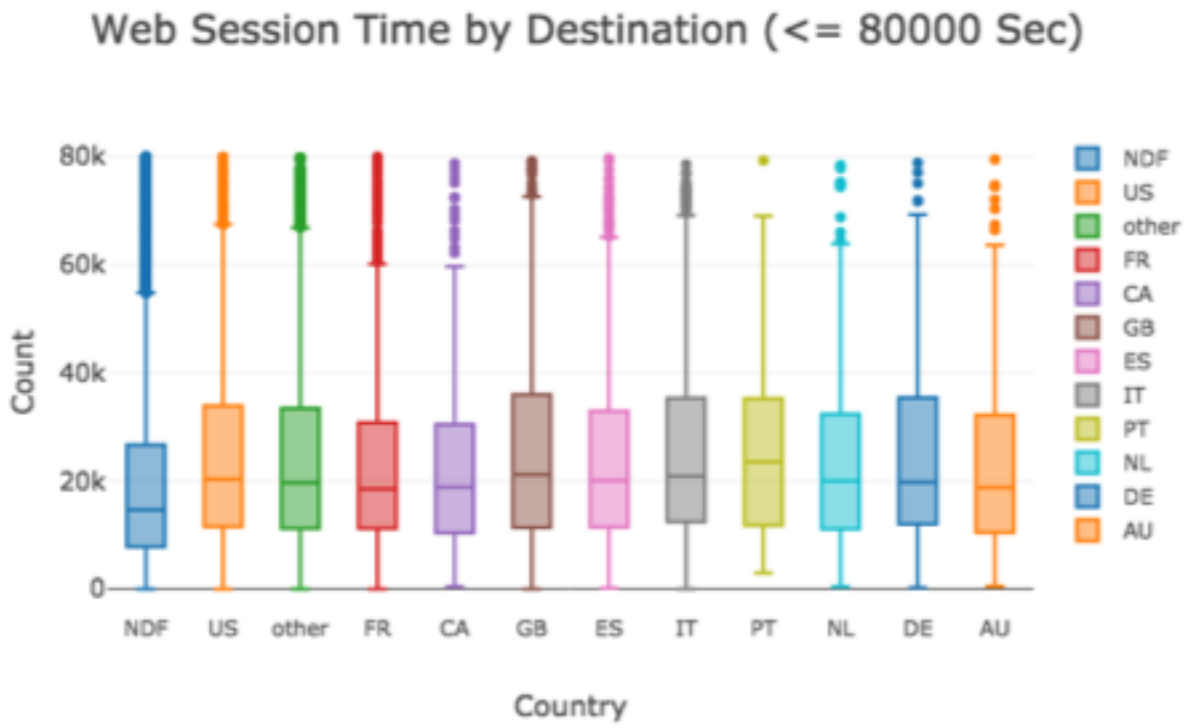

- Younger users were also more likely to pick U.S. as the destination of their first trip.
- Again, a one-tail z test is conducted and the p-value is 3.45e-66. We reject the null hypothesis because the p-value is very close to 0 and conclude that younger users had a higher probability of booking a trip to the U.S.

# Exploratory Analysis




- Users who didn't book a trip seemed to visit Airbnb's website/ app less frequently.
- The p-value of our one-tail z test is 5.12e-104. Since the p-value is very close to 0, we reject the null hypothesis and conclude that those who booked a trip visited Airbnb's website/ app more frequently.

# Exploratory Analysis




- Regarding the length of web sessions, those who didn't book a trip had shorter sessions.
- The p-value of our one-tail z test is 4.68e-34 and we conclude that those who booked a trip had longer web sessions .

# Thank you!