



Linear Regression Project Proposal

Predicting Airplane Ticket Prices

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Question/need:

The framing question of this prediction model (linear regression) is which flights to Riyadh are cheaper and affordable during “Riyadh Season 2021”; so, the purpose of this model is to help our client to provide the best tickets for their customers during Riyadh Season 2021.

The client who benefits from exploring this question and building this model is **Wego Saudi Arabia**. Wego is an award-winning meta-search engine; they’re the largest online travel marketplace in the Middle East, North Africa & Asia Pacific.

Wego's core markets are in the Asia Pacific, Middle East, and India. Wego travel app currently ranks within the top five of the most popular apps in the iOS and Play store travel category for Middle Eastern region. Wego partners up with various smartphone manufacturers (Samsung being a prime example) to have their app come preinstalled.

Each month Wego sends flight and hotel booking referrals worth US\$1.5B to its travel partners. In addition to partnerships with hotels, airlines and OTAs, Wego continuously collaborates with tourism boards of various countries, such as Singapore, South Korea, Jordan, Macao, and many others, to increase travel demands to and from said countries.

In June 2014, the company launched Wego's Private Marketplace providing advertisers access to Wego's travel audiences via programmatic buying. The trading desk operates with DSP partners from the US and UK, including Xaxis, Amnet and RadiumOne, and others in the Asia Pacific, Macau, and the Middle East.

Wego is on a mission to help people discover the real value of travel, to give more reasons, to make it easy for users to go. Wego was founded back in 2005, and since then, Wego has imagined and created a lot of products for travelers all around the world and especially in middle east.

Today, Wego is used by millions of people every month — people who travel for adventure, for work, for family and for many other reasons.

Wego provides its services through Android/iOS apps and online website.

Wego’s idea and belief are that everyone has an innate desire and yearning to travel — experience, live, and grow. Thus, they ingrained this idea of the human need to travel and the question of “why we go?” into the name of their organization.

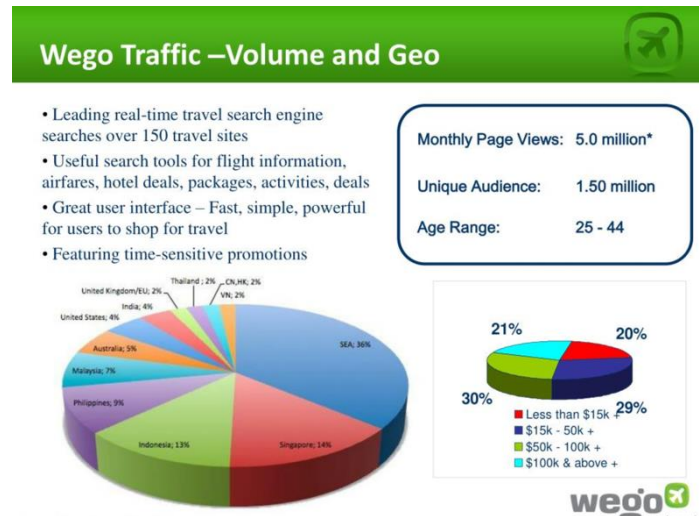


Figure 1 Wego Search Traffic

Data Description:

The planned dataset will be provided using Web Scraping methods to popular flights search engines like Google Flights and Momondo during the upcoming Riyadh Season from October 2021 to March 2022 with flights coming from within Saudi cities to Riyadh. The mentioned data is being obtained using Web Scraping libraries python provide, then stored in datasets for each city.

The unit of analysis is the prices of flight tickets going to Riyadh. The data shows the departure city, the destination city, the weekday of departure, the time of departure, and price of the ticket.

The target prediction would be the cheapest and best ticket price going to Riyadh from each desired departure city.

Tools:

In order to meet the requirement of the project, the plan to do that would be by using the web scrapping tool Selenium to collect our data, SQL database to insert the web scrapped data into database tables and querying from those tables into Python via SQLAlchemy. The Exploratory data analysis part will be done using Pandas. Finlay, using seaborn which is one of

Python's visualization libraries to visualize the data. also, Tableau because of its power to visualize data into a more of an interactive setting and appealing way to the client.

MVP Goal:

The aimed output of the prediction model would have a throughout report with expected or predicted cheap and affordable flight tickets going to Riyadh during the Riyadh Season from cities within Saudi Arabia where the client is going to use those findings to provide best flights and packages to their users. This would be achieved by Building linear regression models then selection and evaluation the best model using proper validation and testing methods on web scrapped flight search engine data from October 2021 to March 2022 Recommending the client to with the best flight tickets available at certain date, time and city based on the tickets collected, analyzed and predicted.

Another future possibility is by using machine learning to predict prices.

References:

Wego Pte Ltd. <https://sa.wego.com>

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