

Instructions

Below you'll find the Thumbtack Analytics Challenge. It consists of two sample datasets that are intended to give you a sense of what it's like to be an analyst here at Thumbtack and the problems we tackle on a day-to-day basis.

You will have 48 hours to complete the assignment. Please do not share the questions or data with anyone else or solicit help from others. You may use any software to complete your analysis (a few popular choices include Excel, R, Python, Google Sheets, etc.).

Introduction

Thumbtack is a marketplace for local services. Customers come to our website or mobile app to see our directory of service professionals ([example](#)) in nearly 500 categories. As part of the search experience, customers can provide some basic details about their projects in the search filters to see pros that best match their needs. Customers can also see pros' price estimates for their projects. From the list of pros, customers can then explore pro profiles, contact the pros that interest them, and ultimately hire a pro. In this process, Thumbtack generates revenue by charging pros for each customer that contacts them.

Datasets and schema

Visitors CSV

This dataset contains a list of search results. Each result is a pro that matched a specific visitor's search.

- `row_number` (integer): row number in data set
- `visitor_id` (integer): unique identifier for the visitor that the search result is associated with
- `search_timestamp` (timestamp): timestamp of when the visitor loaded the search results
- `category` (string): category of the visitor's search
- `pro_user_id` (integer): unique identifier for the pro
- `num_reviews` (integer): number of reviews that the pro had at the time of the search
- `avg_rating` (float): average rating across pro's reviews
- `pro_last_active_time_before_search` (timestamp): timestamp of when the pro last responded to a customer that contacted them, prior to the `search_timestamp`
- `cost_estimate_cents` (integer): pro's price estimate for the visitor's project, in cents. For House Cleaning searches, this is the price estimate for the entire project. For Local Moving searches, this is the estimated hourly rate.
- `result_position` (integer): pro's rank in search results. Rank = 1 means the pro was ranked first among the search results.
- `service_page_viewed` (boolean): TRUE indicates that the visitor clicked to view the pro's profile, FALSE otherwise

Contacts CSV

This dataset contains a list of customers reaching out to pros. Each row is a visitor that reached out to a pro through a search in the Visitors CSV.

- `visitor_id` (integer): unique identifier for the visitor that reached out to the pro
- `pro_user_id` (integer): unique identifier for the pro that the visitor contacted
- `contact_id` (integer): unique identifier for the visitor-pro contact
- `hired` (boolean): TRUE indicates that the visitor eventually hired the pro, FALSE otherwise

You can access and download the datasets [here](#).

Prompt

Thumbtack has decided to take a closer look at performance in two of its largest categories - House Cleaning and Local Moving. **Please summarize, based on your analysis of the provided data, what types of pros our customers are interested in** (Hint: what metrics do you choose to quantify customers' interest?). **Please also overlay your own recommendations for how we can improve and grow our marketplace** (Hint: how to help customers find the right pro? Or, how can we help our pros get contacted more?). Justify your recommendations based on your analysis of the provided data.

Submit your results in PDF format. We encourage you to explain and hypothesize about the drivers behind your findings. Include the analysis and charts that you believe are most relevant to your answers and help communicate your thinking. Please keep your analysis well-structured and easy to follow, also include any code/query you used in this analysis in a separate file to support your results.

Before submitting, please name the file as follows: 'firstname_lastname_TTAnalyticsChallenge'

Thank you and good luck!