

Strategy & Analytics Homework Assignment

Welcome to the Strategy & Analytics homework assignment! The purpose of this assignment is to provide an opportunity to showcase your analytical skills. While this assignment is representative of our team's work, the accompanying data sets are randomly generated. They do not represent real customers or provide any information regarding Lucid's growth or financial state.

Problem Description

Lucid attracts visitors to its website through a variety of marketing channels, including the following:

- **video:** Video advertisements; e.g., YouTube
- **organic search:** Unpaid search engine results
- **paid search:** Paid advertisements on search engines
- **display:** Display advertisements embedded within web pages
- **partner referral:** Referrals from other applications that integrate with Lucid's products; e.g., Google Docs
- **social:** Advertisements run in social media; e.g., LinkedIn
- **email:** Email advertisements; e.g., in Gmail

These channels redirect the user to a "landing page," a web page designed to showcase Lucid's value and convince visitors to start a subscription or trial, at which point they receive access to the product.

The marketing team has been tracking site visits and subsequent subscriptions for two years now, but, up until now, no one has had a chance to thoroughly explore and understand the data. That's where you come in! We suspect that certain customer segments are more valuable than others, but we need your help to understand those differences and develop recommendations for improvement.

Data Description

You'll be working with data from two tables: `visits.csv` and `subscriptions.csv`. The recruiter should have supplied both files along with this document. The "visits" data set records all visits to our website, including the following fields:

- **visit_id:** Unique identifier for the visit
- **account_id:** Unique identifier for the account created by this visit; note: an account is only created when a visitor starts a subscription or a trial
- **day:** Date on which the visit occurred
- **region:** Geographic region associated with the visit

- **language:** Browser language associated with the visit
- **channel:** Marketing channel responsible for generating the visit
- **landing_page:** Landing page visited; potential values include the capital letters A through J

The “subscriptions” data set contains an entry for the first subscription (if any) generated from each site visit. It contains the following fields:

- **subscription_id:** Unique identifier for this subscription
- **account_id:** Same as the **account_id** in the visits table, except this table should contain an **account_id** in every row
- **subscription_start_date:** Start date for the subscription, if applicable
- **subscription_end_date:** End date for the subscription, if applicable
- **trial_start_date:** Start date for the trial, if applicable
- **trial_end_date:** End date for the trial, if applicable
- **revenue:** Revenue resulting from the subscription in USD; note: Trials do not generate revenue, so this row is populated for subscriptions only.

Instructions & Questions

The marketing team has requested that you answer the questions in the subsections below. We expect that you will spend no more than three hours on the assignment and will grade your work accordingly, recognizing that such a limited timeframe is not sufficient to perform the highest quality analysis.

When you are finished, please send us your answers and the file you used to conduct your analysis (e.g., your code or spreadsheet). We have created a [Google Colab notebook](#) supporting SQL, Python, & R that you are welcome to use for your analysis; however, usage of the notebook is optional and you are free to use whatever tool you are most comfortable with. The recruiter should also have sent you the notebook in .ipynb format in case you’d prefer to run it locally.

Basic Questions

- How much revenue has each region generated over the past two years?
- Which channel has the highest revenue per visitor?
- Which landing page has the highest overall conversion rate (% of visitors that become subscribers)? Does this hold true across all regions, languages, and channels?

Strategic Question

Suppose that the company has a goal to increase revenue from the US/Canada region by 20% over the next year.

- What options do we have for pursuing this goal?

- Based on the data, what specifically would you recommend we do to achieve this goal?

Rubric

While we can't divulge the full rubric, we are happy to share the general criteria and weighting for each category (see table below). Good luck!

Category	Criteria	Weight
Basic question 1	<ul style="list-style-type: none"> • Logic and answer are correct • Displays answer in easily readable format 	10%
Basic question 2	<ul style="list-style-type: none"> • Logic and answer are correct 	10%
Basic question 3	<ul style="list-style-type: none"> • Logic and answer are correct • Checks answer within segments 	20%
Strategic question	<ul style="list-style-type: none"> • Considers 4+ options • Analysis is rigorous and thoughtful • Uses data to quantify potential impact of recommendation compared to alternatives • Effectively communicates recommendation 	50%
Organization & code quality	<ul style="list-style-type: none"> • Code is well written • Write-up structure is easy to follow 	10%