# Ad Copy Experiment

## Context

This task is all about understanding how well you can manipulate, visualise and present data alongside demonstrating your understanding of experimentation - a concept that you would be encountering frequently in an analytical role at WeDiscover.

It is designed to be broad enough to give you room to develop your own approach, but specific enough that it should take no longer than 3 hours. If you find yourself running out of time, please feel free to leave comments explaining what you would have done, had you had more time.

## Brief

### The client

We have recently set up an ad copy experiment for one of our clients, Penny, a fictional but nonetheless exciting fintech business bank. Your task will be to analyse the experimental results, determine whether there’s a winning variant and advise on another test in their roadmap.

To give you some context; Penny has some unique features, they will automatically give you access to an overdraft and working capital, they can send funds internationally without any fees, and they have a full accounting software suite built into their product.

From a user acquisition perspective, users may register with Penny for a limited free 14 day trial, enquire for a bespoke quote for a full version and ultimately purchase a subscription to the service.

As such, their conversion funnel for Paid Search is typical of an e-commerce business and can be summarised as below:

Impression ➜ Click ➜ Registration ➜ Enquiry ➜ Purchase

Penny are advanced in terms of their measurement strategy and utilise both a multi-touch attribution model across all digital channels and the DDA (data-driven attribution) model within Google Ads. They pass attributed conversions back to Google Ads via an offline conversion feed.

During July and August, several new companies entered the space and as such the SERP had become more competitive - this ad copy test was launched on the 6th September with the primary objective of improving the CTR but with a secondary objective on ensuring that the conversion funnel is not negatively impacted. The experiment ran until the 15th of October, when it was paused to allow time to collect conversion data (cut off at 45 days from date of click).

### The task

Your task is to analyse & report on the test results and advise on an upcoming test by working through the list of objectives below. You should create a Google Slides presentation that contains the relevant output from your work - likely charts, tables and conclusions.

#### Objectives

* Create a few slides giving an overview of the test performance, being sure to include all the metrics that you think would be important to marketers. Highlight any interesting trends in the data.
* Determine if there is a winner of the experiment, clearly stating your reasoning for this decision.
* Disregarding the time from click to lower funnel conversions, determine the earliest date that you could have declared a winner. If there is no winner, how much longer would the test have needed to run for?
* The client wants to run another test, this time comparing different audiences for campaign targeting. Based on the daily volumes observed in this test, calculate how long they would need to run the audience test for if they wanted to detect a 5% increase in the rate of registered users enquiring.

Data

The experimental data has been exported from Penny’s Google Ads account and is available for you to download [here](https://drive.google.com/file/d/1DTxdaegTJh8PJ86Giv_pdqUaL34GfbUK/view?usp=sharing). This data is simulated and you may wish to comment on any interesting features or trends in the data as part of the first objective.

Advice

If you have any questions regarding the client, the objectives or the data, please feel free to get in contact and we’ll be more than happy to provide any further information you might need.

## Submitting your analysis

Please submit your work by sharing a link to a Google Drive folder that contains your presentation, along with any other files you have used for your analysis - for example, google sheets, Python notebooks. If you are writing code as part of this task, please provide instructions for how to build and run it.

Please make whatever method you used for the analysis digestible for us - provide your rationale and notes where you think it’s relevant.

If you’ve uploaded your code or working files to GitHub or some other platform that’s fine, but please do so in a private repository and do not label it as WeDiscover.