Project Overview

In this project, you will analyze the results of an A/B test and create a report of data-driven recommendations based on your findings.

Project Logistics

The project features three stages, each being one sprint:

1. Extract the user-level aggregated dataset using SQL.

2. Analyze the A/B test results using statistical methods in spreadsheets and visualizations in Tableau.

3. Create a written report of the A/B test results and optionally record a video presentation.

Students who submit the project before the deadline(s) at the end of the unit will receive personalized feedback on their work.

Project Background

Motivation

An A/B test is an experimentation technique used by businesses to compare two versions of a webpage, advertisement, or product feature to determine which one performs better. By randomly assigning customers or users to either the A or B version, the business can determine which version is more effective at achieving a particular goal.

You are a Data Analyst for an e-commerce company called GloBox. GloBox is an online marketplace that specializes in sourcing unique and high-quality products from around the world.

> *We believe that shopping should be an adventure, and we want to bring the world to your doorstep. From exotic spices and rare teas to handmade jewelry and textiles, we have a curated selection of products that you won't find anywhere else.*

GloBox is primarily known amongst its customer base for boutique fashion items and high-end decor products. However, their food and drink offerings have grown tremendously in the last few months, and the company wants to bring awareness to this product category to increase revenue.

A/B Test Setup

The Growth team decides to run an A/B test that highlights key products in the food and drink category as a banner at the top of the website. The control group does not see the banner, and the test group sees it as shown below:
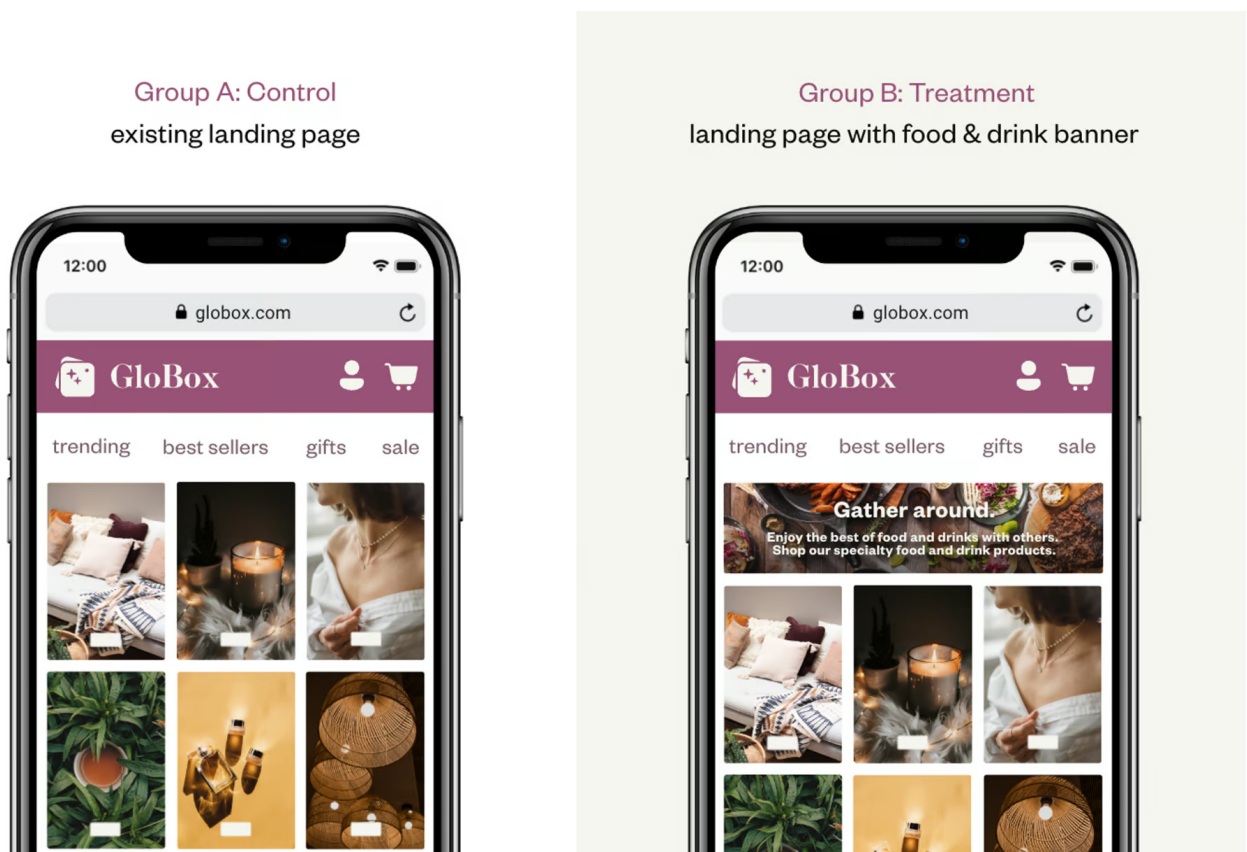
The setup of the A/B test is as follows:

1. The experiment is only being run on the mobile website.

2. A user visits the GloBox main page and is randomly assigned to either the control or test group. This is the join date for the user.

3. The page loads the banner if the user is assigned to the test group, and does not load the banner if the user is assigned to the control group.

4. The user subsequently may or may not purchase products from the website. It could be on the same day they join the experiment, or days later. If they do make one or more purchases, this is considered a "conversion".
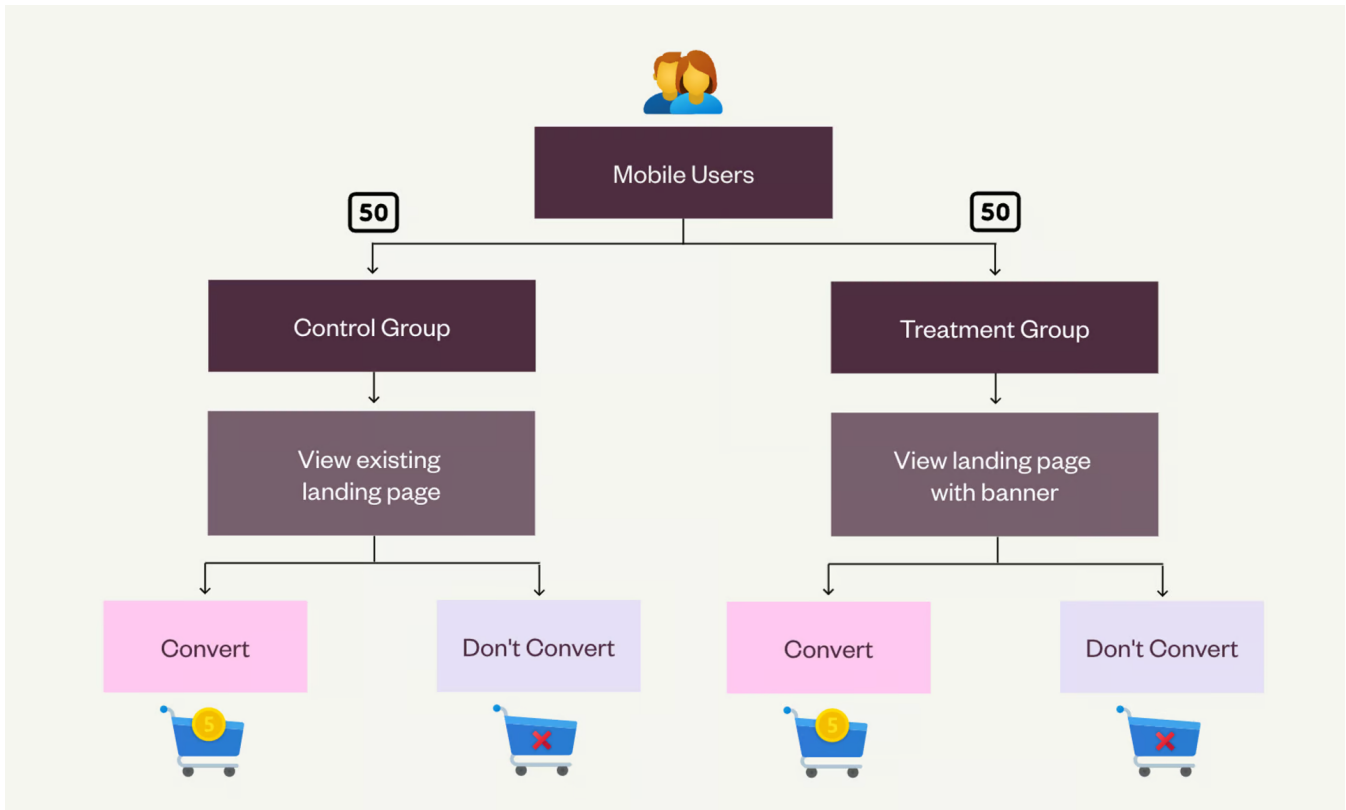
Stakeholders

Your task is to analyze the results of the A/B test and provide a recommendation to your stakeholders about whether GloBox should launch the experience to all users. The group that you will be presenting to includes the following:

- **Growth Product & Engineering Team**: This is the team that you work with at GloBox. The team is made up of a product manager, a user experience designer, an engineering manager and several software engineers, and you, the data analyst. The team develops features for the GloBox website that drive growth in users and revenue.

- **Leila Al-Farsi, Product Manager, Growth**: Leila is the product manager for the Growth product and engineering team. Alongside Alejandro, she leads the Growth team by deciding their goals and projects, measuring their success against defined KPIs, and communicating results to other company leaders like Mei.

- **Alejandro Gonzalez, User Experience Designer, Growth**: Alejandro is the designer for the Growth product and engineering team. He conducts user research and designed the experience that the A/B test is evaluating.

- **Mei Kim, Head of Marketing**: Mei oversees the Marketing team, which works on targeting audiences with effective marketing campaigns to drive customers to the GloBox website. She collaborates frequently with Leila and Alejandro to design website experiences that will align well with the current marketing efforts.

Together, Leila, Alejandro, and Mei will decide whether or not to launch the experiment based on the results.

The Dataset

GloBox stores its data in a relational database, which you can access here:

> 🐝 **Introducing Beekeeper Studio**
>
> We are replacing bit.io with Beekeeper Studio, a popular open-source SQL editor that makes it easy to query databases. Please see the following page on Campus for the step-by-step instructions to get started:
>
> 🔗 **Beekeeper Instructions**

> 🗄 **Connect to the GloBox database**
>
> Paste the following URL using the "Import from URL" option mentioned in the instructions linked above:
>
> `postgres://Test:bQNxVzJL4g6u@ep-noisy-flower-846766-pooler.us-east-2.aws.neon.tech/Globox`

You can find a description of each table and its columns below.

- **users**: user demographic information
  - **id**: the user ID
  - **country**: ISO 3166 alpha-3 country code
  - **gender**: the user's gender (M = male, F = female, O = other)
- **groups**: user A/B test group assignment
  - **uid**: the user ID
  - **group**: the user's test group
  - **join_dt**: the date the user joined the test (visited the page)
  - **device**: the device the user visited the page on (I = iOS, A = android)

- **activity**: user purchase activity, containing 1 row per day that a user made a purchase

    - **uid**: the user ID

    - **dt**: date of purchase activity

    - **device**: the device type the user purchased on (I = iOS, A = android)

    - **spent**: the purchase amount in USD

users	
id	bigint
country	text
gender	text

groups	
uid	bigint
group	text
join_dt	date
device	text

activity	
uid	bigint
dt	date
device	text
spent	double

Key things to note:

1. All users should be assigned to one A/B test group

2. Not all users make a purchase

3. Purchase activity is for all product categories, not just food and drink