A/B testing

Earlier, you learned that A/B testing is a way to compare two versions of something to find out which version performs better. For example, a data professional might use A/B testing to compare two versions of a web page or two versions of an online ad. You also learned that A/B testing utilizes statistical methods such as sampling and hypothesis testing.

In this reading, you'll learn more about the general purpose and design of an A/B test and how A/B testing uses statistical methods to analyze data.

Business context

Data professionals often use A/B testing to help stakeholders choose the best design for a website or app to optimize marketing, increase revenue, or enhance customer experience. In practice, A/B testing involves randomly selecting a sample of users and dividing them into two groups (A and B). The two groups visit different versions of a company's website. The two versions are identical except for a single design feature. For instance, the "Purchase" button on Group A's version might have a different size, shape, or color than the "Purchase" button on Group B's version. An A/B test uses statistical analysis to determine whether the change in the feature (e.g., a larger button) affects user behavior for a specific metric. A data professional might use an A/B test to analyze one of the following metrics:

- *Average revenue per user*: How much revenue does a user generate for a website?
- *Average session duration*: How long does a user remain on a website?
- *Click rate:* If a user is shown an ad, does the user click on it?
- *Conversion rate*: If a user is shown an ad, will that user convert into a customer?

Let's explore an example to get a better understanding of how A/B testing works.

Example: Average revenue per user

Imagine you're a data professional who works for an online footwear retailer. The company is trying to grow its business and is researching the average revenue per user on its website. Your team leader asks you to conduct an A/B test to determine whether increasing the size of the "Purchase" button has any effect on average revenue. You