# 12\_16: **User Referral Program**

## **Goal**

Most online platforms feature user referral programs that incentivize inviting new users to try their products. These programs typically reward existing users with credits or monetary benefits once the new user completes a transaction.

The objective of this task is to analyze the data from a referral program to assess its effectiveness and draw actionable insights.

**Challenge Description**

* Company XYZ launched a new referral program on October 31. Under this initiative, users who successfully refer a new user receive $10 in credit when the referred user makes a purchase. The program has been active for nearly a month, and the Growth Product Manager is eager to assess its success. Notably, since the program's inception, there has been a noticeable increase in the number of users, prompting the manager to seek actionable insights and data to present to higher management.
* To evaluate the program's impact, an analysis can estimate the changes observed on the site before and after its launch. This includes examining metrics such as user growth, transaction volumes influenced by referrals, and overall engagement.
* Based on the data analysis, recommendations for the next steps could involve refining the program's mechanics, optimizing user engagement strategies post-referral, and potentially expanding or modifying the incentive structure to enhance effectiveness.
* However, it's important to note that launching the referral program without a controlled test presents certain risks. This approach makes it challenging to attribute observed changes solely to the program, as external factors or concurrent marketing efforts could also influence outcomes. A more robust method would involve conducting an A/B test where the referral program is implemented for a subset of users (test group) while another group (control group) does not receive the program. This allows for a direct comparison of outcomes between the two groups, minimizing confounding variables and providing clearer insights into the program's impact.

## **Data**

We have just 1 table downloadable by clicking [**here**](https://drive.google.com/uc?export=download&id=18qT5bGXcUKxMwfZG7YzTiHCGs_y2WoOK).

The table "referral" contains transaction details from the site, distinguishing between users who participated in the referral program and those who did not. Here are the columns:

* **user\_id**: Unique identifier for each user.
* **date**: Date of the purchase transaction.
* **country**: User's country based on IP address.
* **money\_spent**: Amount spent on the purchased item in USD.
* **is\_referral**: Binary indicator (1 or 0) specifying whether the user came from the referral program.
* **device\_id**: Identifier for the device used to make the purchase.

This dataset allows for analyzing the impact of the referral program on user transactions, comparing behaviors and spending patterns between users who were referred and those who were not.