AB Testing

BUSSINESS OBJECTIVE:

A/B testing or split testing is the scientific way of arriving at the truth, or at least the best option in a given set of conditions.

Our goal is to work through this testing to help the company understand if they should implement the new page, keep the old page, or perhaps run the experiment longer to make their decision.

DATA DISCRIPTION:

The dataset has 2 CSV files,

- Data1 - 294479 rows and 5 columns
- Data 2 - 290585 rows and 2 columns

The data consists of the following attributes:

1. User_id
2. Time Stamp
3. Group (control, treatment)
4. Landing Page (old page, new page)
5. Converted (0-old page, 1- new page)
6. Countries

AIM:

A/B tests aim to increase the conversion rate of that action. Conversions include: Buying a product - the primary and most important conversion for an online store.

TECH STACK:

- Language - Python
- Libraries – numpy, pandas, matplotlib, seaborn, sklearn, statsmodels

APPROACH:

1. Importing the required libraries and reading the dataset.
    - Merging of the two datasets
    - Understanding the dataset
2. Data cleaning
    - Checked null values
    - Drop duplicates rows
    - Clean mismatched data
3. Generate Hypothesis
4. Probability
5. AB test
6. Regression
7. P-value

Project Takeaways

- 1. Understanding the business problem.
- 2. Importing the dataset and required libraries.
- 3. Performing Exploratory Data Analysis (EDA).
- 4. we conducted a detailed A/B testing using 3 main methods:
    1. Sampling distribution
    2. Z test
    3. Logestic regression

    All three methods resulted in the same conclusion: the treatment has no impact.