**Marketing Campaign Analysis: Evaluating Effectiveness and Identifying Insights**

This project delves into the analysis of a marketing campaign, aiming to assess its success and uncover valuable insights. Leveraging Python libraries like pandas, numpy, matplotlib, seaborn, and scipy, we explore the data and answer key business questions:

**Business Questions:**

* **Campaign Performance:** Was the campaign successful? Key metrics like conversion rates and retention rates are computed to measure success.
* **Day-of-Week Trends:** What are the peak subscription and cancellation days? This analysis helps optimize campaign scheduling.
* **Target Audience:** Which age groups responded most positively to the campaign? Conversion rates across demographics are analyzed.
* **Marketing Channel Performance:** Which marketing channels drove the highest conversions? This helps optimize future campaigns.
* **Language Targeting:** What language resulted in the highest conversion rate? Insights guide future language selection.
* **A/B Testing:** Did the implemented change have a positive impact? Statistical tests like t-tests are used to assess the change's effectiveness.

**Methodology:**

1. **Data Import & Exploration:** The campaign data was imported and explored to understand its structure and content.
2. **Data Cleaning:** Data cleaning steps were performed to address missing values, inconsistencies, and errors (e.g., resolving the language displayed bug).
3. **Feature Engineering:** New features were created to enhance the analysis (e.g., segmenting data by age groups).
4. **Data Analysis & Visualization:** Data was analyzed to answer the business questions, and key findings were visualized using charts and graphs.
5. **Metric Calculation:** Conversion and retention metrics were calculated to evaluate campaign performance comprehensively.
6. **A/B Test Analysis:** The lift metric and t-test were used to assess the impact of the A/B testing change.