**Case Study: A/B Testing Analysis of Campaign Formats**

**Background:** You are tasked with analyzing the results of an A/B test conducted on two different banner ad formats (short vs. long) on users across multiple marketing channels: Google Ads, LinkedIn, Instagram, and Twitter. The campaign these ads are running for aim at advertising and generating purchases on motor oils.

**Short banner ad content:**

**Text:** A headline "Upgrade Your Ride!" with a subheading "Premium Motor Oil!, Now 20% Off."

**Visuals:** A high-quality image of a popular sports car and a high-quality image of the product with a call-to-action (CTA) button "Get Yours Today."

**Logo:** Prominent placement of the brand’s logo in one corner.

**Long banner ad content:**

**Text:** A headline "Transform Your Car with Our Premium Products" followed by supporting text detailing the benefits, "Increase the maximum mileage of your vehicle with our Premium Motor oil!".

**Visuals:** Rich imagery showing a car engine when using a low-rate motor oil vs a car engine when using the high-rate motor oil.(e.g., a before-and-after comparison). Multiple CTAs: "Explore Collection" and "Learn More" to guide users based on their interest.

**Logo:** Subtle placement of the brand’s logo, integrated into the design to complement the product visuals.

**The objective of this analysis is to determine which banner ad format is more effective in driving engagement and clicks.**

**Dataset Provided:** You have access to a dataset containing performance metrics for each banner ad version across the mentioned channels.

**Task 1:** Each performance metric is in a separate csv. Write a python script to merge those performance metrics for each channel. The output should be easily readable.

**Task 2:** Write SQL queries to:

1. **Identify which banner ad** **format (short/long) had the highest number of hide ads clicked due to "Not interested in ad" across all marketing channels.**
2. Find out which banner ad type had the highest number of impressions but the lowest number of clicks across all channels
3. Determine the most effective marketing channel in terms of generating clicks, relative to the number of impressions.
4. Identify the **hide ads click** rate per reason for each banner ad type across all channels

**Task 3:** Build a PowerPoint presentation that effectively communicates your analysis and findings.

**PowerPoint Presentation Guidelines:**

1. Identify the key performance metrics for the long-form banner ad versus the short-form banner ad. Based on these metrics, which banner ad format would you recommend, and why?
2. How does link performance vary between the short and long banner formats? What additional insights can you draw from these variations?
3. How did each banner ad format perform across the different marketing channels (Google Ads, LinkedIn, Instagram, and Twitter)? Which test version would you recommend for each channel, and what led you to that conclusion?
4. What strategic recommendations would you make to optimize the performance of future marketing campaigns based on the insights gathered from this A/B test? Consider aspects like budget allocation, audience segmentation, creative variations, and any other strategies that could enhance the effectiveness of the campaigns across different channels.