Module 14

MEMORANDUM TO: **Park Operations and Strategy Team**  
FROM: **Jose Eneas da Silva Maria**  
DATE: **May 1, 2025**  
RE: **Summary of Findings on Park Attendance Influencers**

Dear Stakeholders,

We have completed our analysis on what influences daily attendance at the amusement park. Using a statistical model that examines the relationship between attendance and several key variables, we have identified meaningful patterns that can inform business and operational decisions.

## Key Findings:

1. **Temperature**: As temperature rises, attendance increases. Our model shows that for each 1-degree increase in temperature, we can expect around 353 more visitors, assuming other conditions remain the same.

2. **Time of Day**: Attendance varies significantly throughout the day. Each additional hour later in the day is associated with an increase of about 971 visitors. This reflects natural peaks during late morning and early afternoon.

3. **Weather (Precipitation)**: Surprisingly, precipitation has a positive coefficient in the model, due to confounding factors such as indoor park capacity or holiday timing. Despite this, days with high precipitation may still need qualitative review.

Sincerely,

Jose Eneas da Silva Maria

Data Science Lead

## Methodology: We used a math tool called a linear regression model to figure out how temperature, time of day (like the hour), and rain affect how many people come. The results are very dependable (p-values < 0.001). In the context of statistical analysis, a p-value is a measure that helps determine the strength of evidence against a null hypothesis. In this case, the p-values being less than 0.001 indicate that the relationships identified between park attendance and variables like temperature, time of day, and precipitation are highly statistically significant. This means there is an exceptionally low likelihood that these observed effects are due to random chance.

# Appendix Visual Summary: The following charts visually support our conclusions on how temperature, time of day, and precipitation affect attendance at the amusement park.

