MINI PROJECT

PROJECT TITLE

“FORMULA-1 CARS DASHBOARD”

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Introduction

Formula 1 (F1) is one of the most competitive and data-driven sports in the world, where every millisecond counts. The performance of drivers, teams, and cars is continuously tracked across races and seasons, generating a rich dataset that can be analysis to uncover valuable insights. With multiple factors such as driver skill, team strategies, circuit conditions, and technological advancements influencing race outcomes, data analytics plays a crucial role in understanding the dynamics of F1 racing.

This mini project focuses on building an interactive dashboard in Tableau using F1 racing data. The dashboard provides a visual overview of key performance indicators such as driver wins, team standings, race locations, season-wise dominance, and geographical distribution of races. By transforming raw race records into meaningful visuals, the project highlights the trends, rivalries, and patterns that shape the history and future of Formula 1.

The objective of this project is to showcase how data visualization and storytelling can simplify complex sporting data, helping fans, analysts, and stakeholders gain a deeper understanding of team strategies and driver performance. Through this dashboard, the project demonstrates how Tableau can be used as a powerful tool to create insights that are both engaging and actionable in the world of sports analytics.

Data Description

- The Dataset **" Winners "** consists of 9 Columns and 1143 Rows.
- Key fields included in the datasets are:
  1. Date
  2. Continent
  3. Grand prix
  4. Circuit
  5. Winner name
  6. Team
  7. Laps
  8. Year

Data Cleaning & Preparation

1. Handling Missing Values

2. Removing Duplicates

3. Standardizing Data Formats

4. Data Transformation

5. Formatting

6. Outlier Detection

7. Final Prepared Dataset

Dashboard Design

- The Dataset " Winners " Dashboard " F1 Cars Dashboard" consists of an **Charts, KPIs** and **Filters.**
- **Charts :**

    1. **Line Chart :** Race Count per year
    2. **Pie Chart :** Top 10 winning Team
    3. **Bar Chart :** Top 15 winning drivers
       Top 15 circuit repeat winners
       Avg race duration by decade
       Top 15 yrs with wins over team

- **KPIs Cards :**

    1. Total Races
    2. Total Wins

- **Filters :**

    1. Years
    2. Team
    3. Winner Name

Analysis & Insights

1. Driver Performance
2. Team Insights
3. Race & Season Trends
4. Geographical Insights
5. Key Metrices & KPIs Cards
6. Impact of Dashboard

Conclusion

The F1 Racing Dashboard successfully transforms raw racing data into meaningful visual insights, showcasing the dynamics of one of the most competitive sports in the world. The analysis revealed that Formula 1 is shaped not only by driver skill but also by team performance, technological advancements, and circuit characteristics.

The study highlighted how a handful of drivers and constructors dominate different eras, while race outcomes are heavily influenced by strategic decisions, engineering excellence, and regulatory changes. Geographic expansion of races across continents reflects the sport's growing popularity and global reach.

By visualizing key aspects such as driver wins, team standings, season trends, and race locations, this project demonstrates the power of Tableau for sports analytics. It provides fans, analysts, and stakeholders with a deeper understanding of competitive patterns and historical rivalries in Formula 1.

Overall, the project proves how data analytics can enrich the storytelling of motorsport, making the racing experience more insightful, engaging, and data-driven.

Future Scope & Limitations

- **Future Scope :**
    1. Predictive Analysis
    2. Customer Segmentation
    3. Advanced Profitability Analysis
    4. Real – Time Dashboard

- **Limitations :**
    1. Static Data
    2. Limited data fields
    3. No Predictive capability
    4. Data Quality Assumptions

Screenshot of Dashboard