Website Traffic Data Analysis Report

Title Page

Website Traffic Data Analysis
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1. Introduction

This report analyzes website traffic data collected over a period of time. The dataset includes key metrics such as Page Views, Unique Visitors, and Bounce Rate. The goal of this analysis is to identify trends, patterns, and insights that can help improve website performance.

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2. Methodology

The data was analyzed using Python, specifically utilizing the Pandas, Matplotlib, and Seaborn libraries for data processing and visualization. The following steps were performed:

1. Data Loading and Cleaning

2. Data Exploration and Trend Analysis

3. Visualization of Key Metrics

4. Interpretation of Results

5. Recommendations for Improvement

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3. Code Typed

```
import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns


# Load data from CSV file

df = pd.read_csv("traffic_data.csv")
```
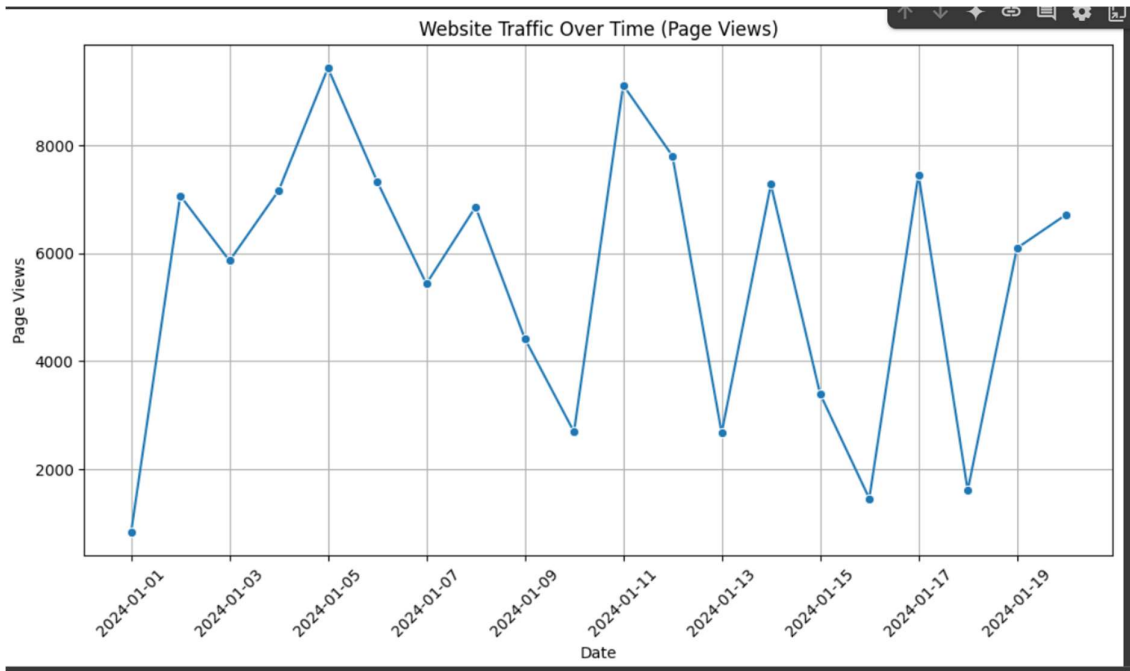
```python
# Convert Date column to datetime format for proper plotting

df['Date'] = pd.to_datetime(df['Date'])


# Plot PageViews over time

plt.figure(figsize=(12,6))  # Set figure size

sns.lineplot(x='Date', y='PageViews', data=df, marker='o')  # Line plot for PageViews

plt.title("Website Traffic Over Time (Page Views)")  # Title of the plot

plt.xlabel("Date")  # X-axis label

plt.ylabel("Page Views")  # Y-axis label

plt.xticks(rotation=45)  # Rotate x-axis labels for better readability

plt.grid(True)  # Add grid for better visualization

plt.show()


# Plot Unique Visitors over time

plt.figure(figsize=(12,6))  # Set figure size

sns.lineplot(x='Date', y='UniqueVisitors', data=df, marker='o', color="green")  # Line plot for Unique Visitors

plt.title("Website Traffic Over Time (Unique Visitors)")  # Title of the plot

plt.xlabel("Date")  # X-axis label

plt.ylabel("Unique Visitors")  # Y-axis label

plt.xticks(rotation=45)  # Rotate x-axis labels for better readability

plt.grid(True)  # Add grid for better visualization

plt.show()
```

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4. Screenshots of Output

Website Traffic Over Time (Page Views)

5. Conclusion

This analysis provides valuable insights into website performance. By addressing bounce rate issues and optimizing content strategy, the website can improve engagement and drive more meaningful interactions with visitors.