

Repository Overview

The STEME-Analytics repository is entirely written in Python. Python's popularity in the fields of data science and analytics is due to its extensive libraries and frameworks, such as pandas, NumPy, Matplotlib, and Plotly, which are likely utilized here for data manipulation and visualization. The project is tailored for use in 2025 and beyond, indicating its modern and forward-looking design.

Purpose and Objectives

The primary goal of the repository is to enable the STEM·E Youth Career Development Program's Data Analytics Team to analyze and present data effectively. By providing tools for creating dashboards, the repository ensures that the career development program can leverage data-driven insights to guide decision-making and improve youth engagement in STEM fields. Dashboards created using this project are expected to streamline the presentation of complex datasets, making them accessible and actionable

```
Code Blame 34 lines (26 loc) · 1.48 KB

1 # Adjusting the color assignment and re-running the dashboard creation
2
3 import matplotlib.pyplot as plt
4 import seaborn as sns
5
6 def create_dashboard_fixed(stats):
7     fig, axes = plt.subplots(2, 3, figsize=(18, 10))
8     fig.suptitle("Website Traffic Summary Statistics Dashboard", fontsize=16)
9
10    # Metrics to visualize
11    metrics = [
12        ("Page Views", "page_views_mean", "page_views_median", "page_views_min", "page_views_max"),
13        ("Site Sessions", "site_sessions_mean", "site_sessions_median", "site_sessions_min", "site_sessions_max"),
14        ("Unique Visitors", "unique_visitors_mean", "unique_visitors_median", "unique_visitors_min", "unique_visitors_max"),
15        ("Bounce Rate", "bounce_rate_mean", "bounce_rate_median", "bounce_rate_min", "bounce_rate_max"),
16        ("Session Duration", "session_duration_mean", "session_duration_median", "session_duration_min", "session_duration_max"),
17    ]
18
19    # Using a default Seaborn color palette
20    colors = sns.color_palette("pastel")
21
22    for ax, (title, mean_key, median_key, min_key, max_key), color in zip(axes.flat, metrics, colors):
23        values = [stats[min_key], stats[median_key], stats[mean_key], stats[max_key]]
24        labels = ["Min", "Median", "Mean", "Max"]
25
26        sns.barplot(x=labels, y=values, ax=ax, palette=colors)
27        ax.set_title(title)
28        ax.set_ylabel("Value")
29
30    plt.tight_layout(rect=[0, 0, 1, 0.96])
31    plt.show()
32
33    # Create and display the fixed dashboard
34    create_dashboard_fixed(traffic_statistics)
```

Key Features

1. **Dashboard Creation:** The repository is set up to create interactive and visually appealing data dashboards. These dashboards likely allow users to explore data trends and insights dynamically.



2. **Python-Centric Development:** As the repository is 100% Python, it benefits from Python's ecosystem, ensuring scalability and ease of integration with other tools.
3. **Modern Focus:** Designed for 2025 onwards, the repository is likely equipped with up-to-date dependencies, ensuring compatibility with recent technologies and methodologies.

Potential Use Cases

- **Engagement:** Data visualizations can be used to showcase opportunities and progress in STEM careers, engaging young audiences.
- **Program Assessment:** Dashboards can help evaluate the effectiveness of the STEM-E program by presenting key performance indicators (KPIs) and metrics.

- Communication: Visual analytics can simplify data sharing with program sponsors, educators, and other stakeholders.

References

Cleaned data extracted from Wix:

1	Date	Page views	Site sessions	Unique visitors	Bounce rate	Avg. session duration
2	2025-03-06	72	35	34	0.69	287.0
3	2025-03-05	61	23	22	0.43	275.0
4	2025-03-04	88	35	34	0.51	139.0
5	2025-03-03	189	73	66	0.63	129.0
6	2025-03-02	61	23	21	0.43	241.0
7	2025-03-01	73	18	18	0.39	202.0
8	2025-02-28	33	20	19	0.7	427.0
9	2025-02-27	42	21	19	0.62	94.0
10	2025-02-26	59	29	25	0.66	101.0
11	2025-02-25	64	29	28	0.59	170.0
12	2025-02-24	37	17	16	0.53	
13	2025-02-23	85	29	26	0.59	130.0
14	2025-02-22	66	22	18	0.45	108.0
15	2025-02-21	44	21	17	0.38	
16	2025-02-20	90	34	24	0.41	93.0
17	2025-02-19	75	29	26	0.52	256.0
18	2025-02-18	50	26	20	0.65	213.0
19	2025-02-17	58	17	15	0.53	117.0
20	2025-02-16	30	15	14	0.6	90.0
21	2025-02-15	74	21	21	0.57	367.0
22	2025-02-14	23	15	15	0.73	93.0
23	2025-02-13	33	19	16	0.68	146.0
24	2025-02-12	62	26	25	0.69	171.0
25	2025-02-11	79	37	32	0.59	184.0
26	2025-02-10	59	33	32	0.67	
27	2025-02-09	51	25	20	0.64	189.0
28	2025-02-08	67	21	20	0.52	92.0
29	2025-02-07	52	15	15	0.6	740.0
30	2025-02-06	466	22	21	0.41	290.0
31	2025-02-05	28	18	18	0.67	176.0