

DATA-DRIVEN STORY PROJECT

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Project Summary: Global Space Missions and Their Evolution

For this project, I'm exploring global space missions using a dataset of 3,000 launches from different countries in the period from 2000 to 2025. Each mission includes details like year, mission type (manned or unmanned), satellite purpose, budget, success rate, technologies used, environmental impact, and collaborating countries. The dataset is referenced from the [Global Space Exploration Dataset \(2000-2025\)](#) published on Kaggle.

The main question:

What factors (e.g. funding, technology, teamwork) make a space mission more likely to succeed?

Discussion:

Space exploration is expensive and risky, so it's important to know what actually works. Some countries spend more, some work together, and others try out newer technologies like AI navigation or solar propulsion. I want to see which of these choices is the main reason for mission success, and how those trends have changed over time.

About the difficulties in visualizing this data, there are a lot of categories and relationships - like how collaboration might relate to both budget and success, or how mission duration might connect to technology used. That's why I'm building a dashboard with multiple interactive charts, so people can explore the data from different angles.

The dashboard will include filters (like country or mission type) and charts that update together to show patterns more clearly. The goal is to make it easy to explore how global space efforts have evolved - and what we can learn from them for the future.

Wireframe:

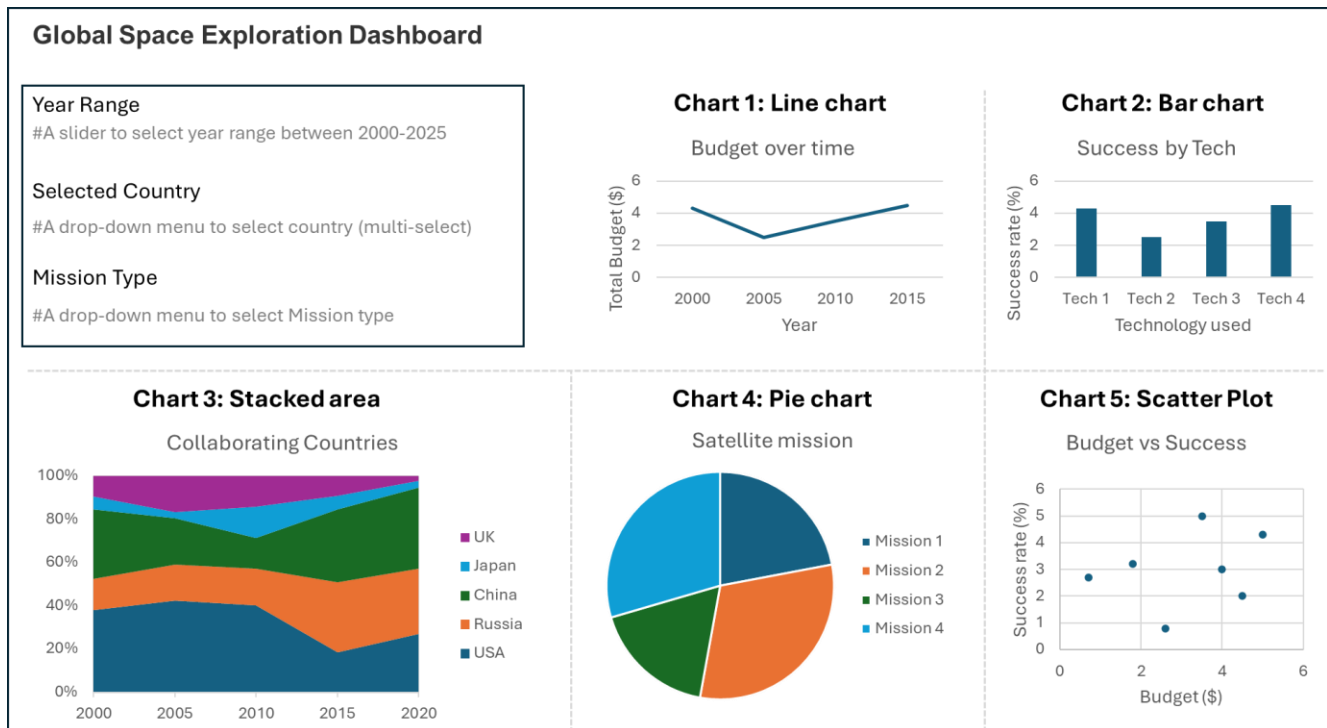


Figure 1: Wireframe of Global Space Missions and Their Evolution

Explanation:

The Dashboard includes a filter at the top left side and five charts to visualize the Dataset. With filter, users can select the time period, select countries for comparison and choose mission of satellite, this make the process more interactive.

Each chart has the following meaning and function:

- Chart 1 Line chart: Represent budget of country for space exploration over time.
- Chart 2 Bar chart: Determine which technology makes satellites launch likely to success.
- Chart 3 Stacked area: Shows the connection and cooperation between countries over time.
- Chart 4 Pie chart: Shows the intended use of satellites and identifies which targets are most common.
- Chart 5 Scatter plot: Shows the correlation between cost and launch success rate.