



MUSHROOM!!!

<https://com-480-data-visualization.github.io/project-2024-mushrooms>

Mushroom Visualization Report

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1. Introduction

This process book details the steps, challenges, and decisions made during the Mushroom Data Visualization project. Our objective was to create an engaging and informative visualization that effectively communicates the diversity and characteristics of mushrooms.

2. Path to Final Result

Our journey began with a fascination for the natural world, specifically mushrooms. These intriguing organisms come in an incredible variety of shapes, sizes, and colors. We wanted to create a visualization that would not only display this diversity but also educate and engage users about the unique characteristics of mushrooms.

A. Initial Research and Data Collection

Our journey began with extensive research on mushrooms. We collected data from various sources, ensuring a comprehensive dataset that included species names, characteristics (such as color, size, and habitat), and images.

Data Sources Kaggle datasets, mycological websites, academic papers

Data Cleaning Addressing missing values, normalizing data, and ensuring consistency

B. Sketching and Planning

We created initial sketches to conceptualize the visualization. We firstly wanted to give the users a taste of how many different kinds of features the mushrooms have, and what are the distribution within them. These sketches included:

Bar Charts To show distribution of mushroom species across different habitats

Scatter Plots To visualize relationships between mushroom characteristics

Interactive Maps To display geographical distribution of species

3. Challenges and Design Decisions

A. Challenges Faced

Data Quality: Inconsistent and missing data points required thorough cleaning and preprocessing. Most of the data are collected for machine learning, which is not easily for visualize the mushroom's feature by their names or families.

Visualization Clarity: Ensuring the visualization was informative without being overwhelming was a critical challenge. In addition, there are lots of different dataset, which is difficulty to be linked together. Especially for the geographical distribution of the mushrooms, there is no very clear and easy-to-use dataset existing, then we just give up ont it.

B. Design Decisions

Color Scheme: We chose the blue and green color palette to looks more technique-related.

Interactivity: Implemented interactive elements (e.g., searchbar, filters) to enhance user engagement. The charts are also interactive for users to see more details.

Visualization Types: Opted for a mix of chart types to present data in the most effective way.

4. Sketches and Plans

Our initial sketches were pivotal in guiding the final design. Here are the major iterations:

Initial Sketch: Basic bar charts and scatter plots to represent data distributions. Mostly handwritten to be easily changed and used while doing the brainstorming.

Revised Plan: Introduced interactivity and refined color schemes based on feedback.

Final Design: Combined interactive maps with detailed charts. In addition, make it more suitable to be presented with the libraries we chose.

5. Visual/Design Considerations

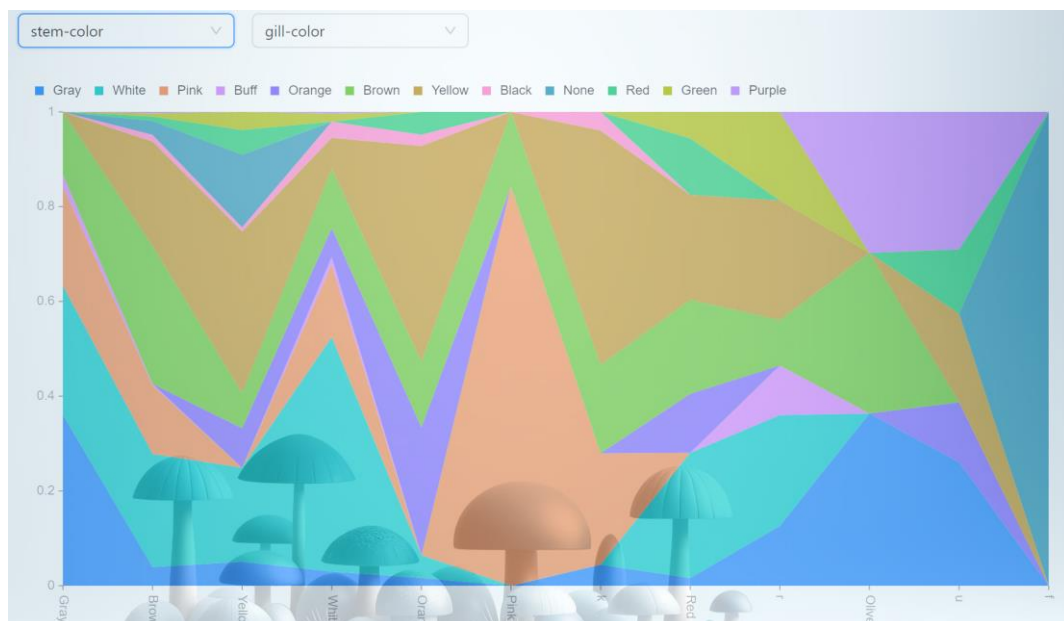
The design of this report and the final visualization focused on:

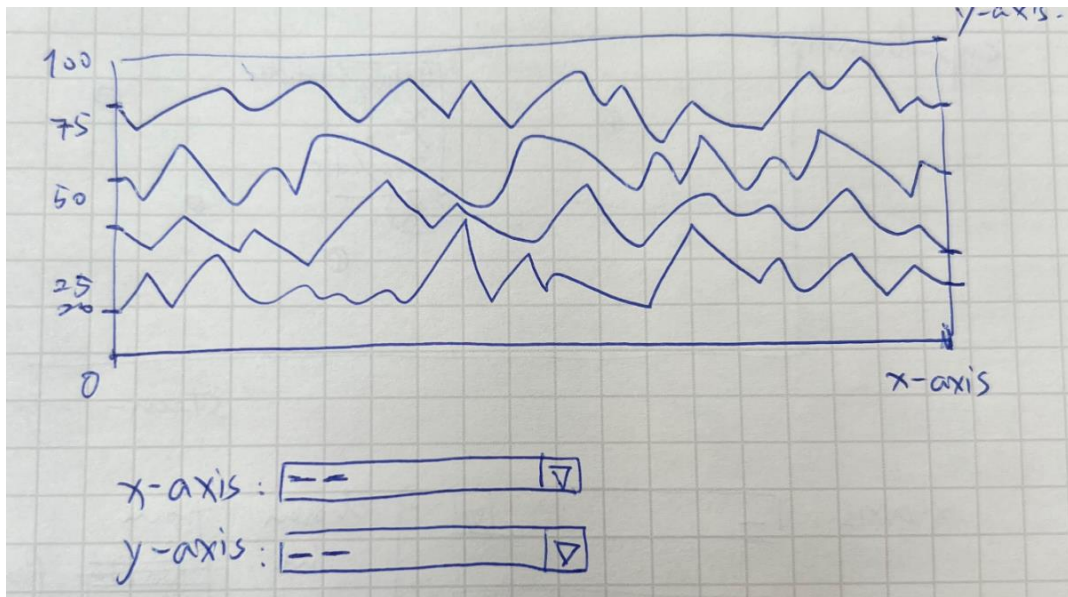
Aesthetic Appeal: Clean, nature-inspired design with a focus on readability and user engagement.

Functionality: Ensuring all interactive elements work seamlessly across devices.

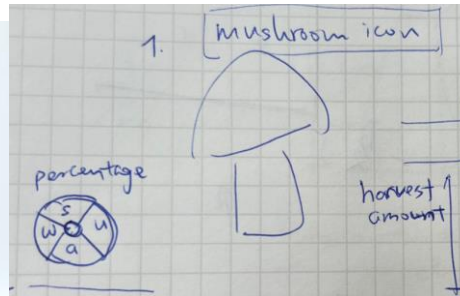
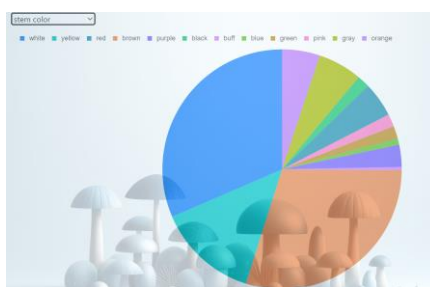
Consistency: Maintaining a consistent visual language throughout the project.

The stacked chart

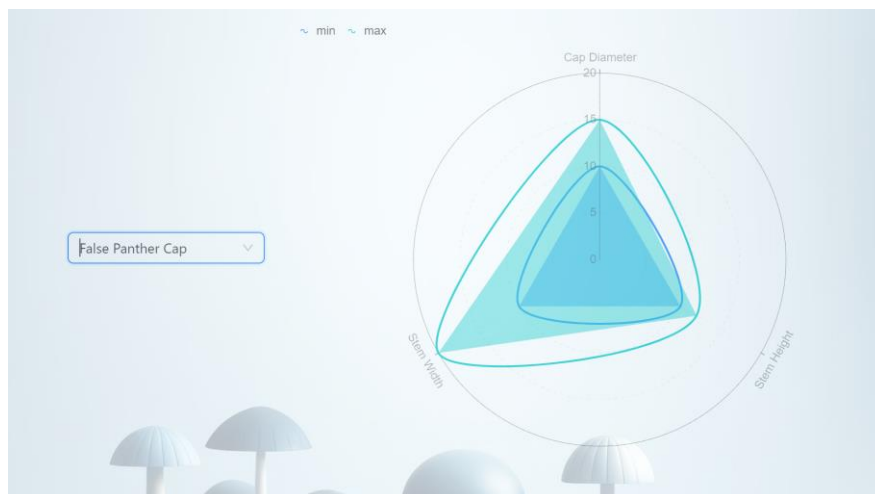




Pie Chart



Radar Charts: Users can search for the mushroom with their name and we will give the radar charts for it's numerical data.



☒ Class
 ☒ Cap Diameter (cm)
 ☒ Cap Shape
 ☐ Cap Surface
 ☒ Cap Color
 ☐ Does Bruise or Bleed
 ☐ Gill Attachment
 ☐ Gill Spacing
 ☐ Gill Color
 ☒ Stem Height (cm)
 ☒ Stem Width (cm)
 ☐ Stem Root
 ☐ Stem Surface
 ☐ Stem Color
 ☐ Veil Type
 ☐ Veil Color
 ☐ Has Ring
 ☐ Ring Type
 ☐ Spore Print Color
 ☒ Habitat
 ☒ Season

Name	Family	Class	Cap Diameter (cm)	Cap Shape	Cap Color	Stem Height (cm)	Stem Width (cm)	Habitat	Season
False Panther Cap	Amanita Family	p	[10, 15]	[convex, flat]	[gray, brown]	[10, 12]	[10, 20]	[woods]	[summer, autumn]

6. Peer assessment

We worked together on all parts of this projects, especitally the story telling and the dataset choosing.

Kai mostly worked on the detailed data presenting, radar charts, pie charts.

Qingyi mostly worked on the data preprocessing, stacked charts, and the skeleten choosing.