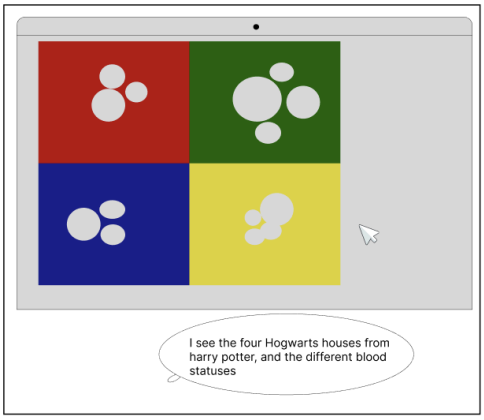
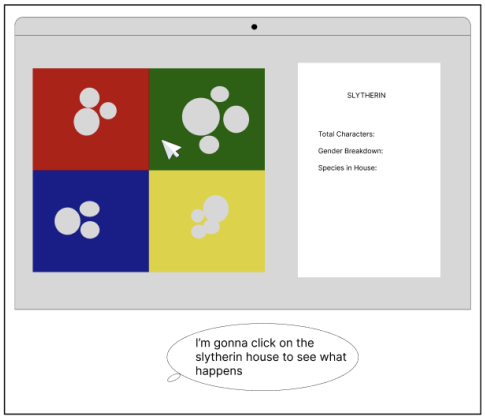
Group netIds: ak2328, jlb574, okz3, ez224

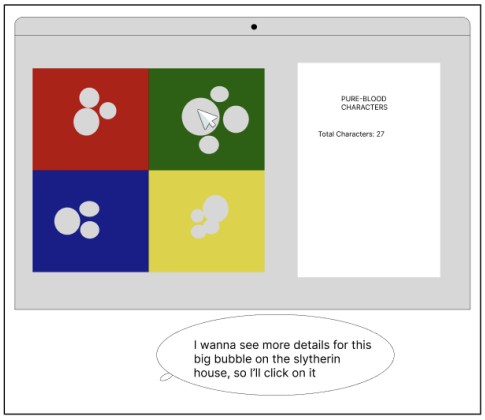
## Data Description

As fans of Harry Potter, our data depicts information about Harry Potter characters, including their gender, house (Gryffindor, Slytherin, Hufflepuff, Ravenclaw), wand type (e.g. "11""  Holly phoenix feather"), patronus (e.g. stag, non-corporeal, etc.), species (e.g. human, ghost, etc.), blood status (e.g. half-blood, pure-blood, etc.), loyalty (e.g. Lord Voldemort, Dumbledore's Army, etc.), and skills (e.g. prefect, pyrotechnics, chaser, etc.). We were interested in seeing how we could explore this data to find potential relationships between houses and their demographics. One way to explore potential demographic patterns is by seeing if certain houses have more of a certain type of patronus or more people with certain skills. Exploring the patronus demographic could look like asking users to pick a house and a skill or blood type, and then using that information to find correlations in the data to output a patronus. However, as the data was unfortunately lacking in patronus data and the skills data wasn't standardized, we decided to focus on comparing and visualizing blood status. This demographic was especially interesting to us considering that the level of blood status plays a key role in the Harry Potter series, wherein a war across non-pure-bloods is a main plot point. Within the series, it is established that Gryffindor and Slytherin are the most "pure" wizarding houses. We wanted to examine this statement to break down the differences across the four houses.

## Storyboards



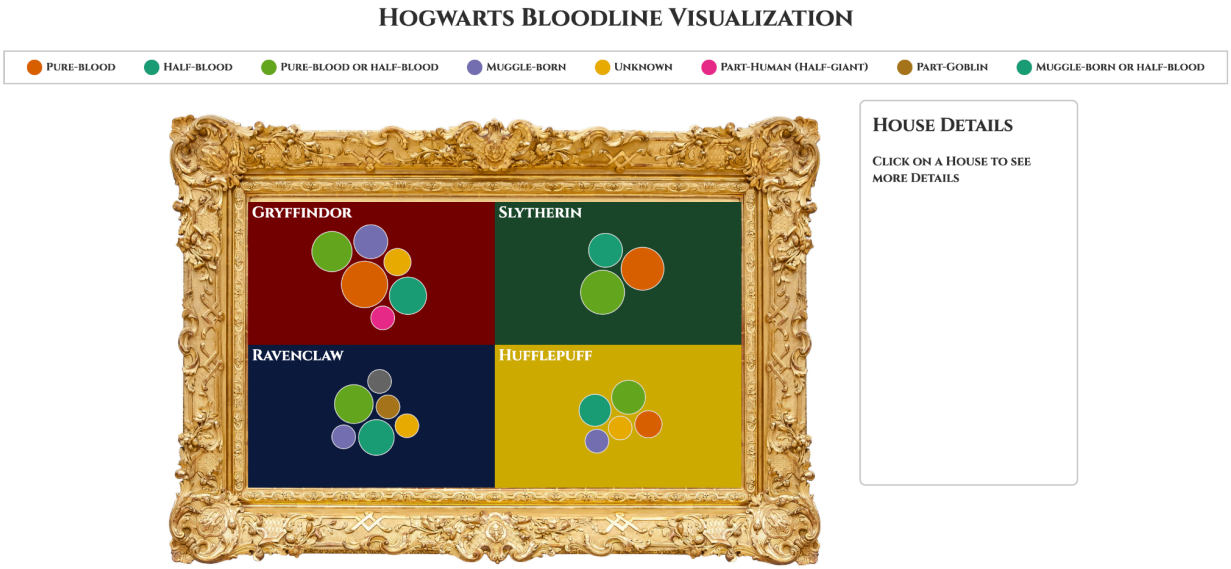




Upon opening our visualization, users should immediately discern that the data is based on Harry Potter - this effect should be achieved by a medieval looking font reminiscent of the series, along with associated thematic styling, colors, and emblems from the series. Users will see the breakdown of blood status for each house characterized by bubbles for each possible blood status, with the size corresponding to the amount of characters that fit that status per house. There should be some immediate patterns that users can discern just based on looking at the difference in bubbles size, for example it's likely that Slytherin and Griffyindor will have larger

bubbles to denote more listed characters from the series and more pure-bloods since the series focuses on these two houses. To learn more about the specific numbers, however, users can click on each bubble to learn about the amount of characters it represents. Additionally, for a broader glimpse of house demographics in general, the user can click on the bigger Hogwarts rectangle containing the bubbles. This will bring up a dynamic side panel that shows total number of characters, gender breakdown, overall blood status breakdown, and species breakdown.

## Final Interactive Visualization




Our final visualization is a faceted bubble chart where each facet represents one of the four main Hogwarts Houses, and the bubbles within each facet reflect the number of characters with distinct blood statuses. The marks in our design are circles representing the amount of characters for each blood status type. The visual channels employed are the size of the circles, which corresponds to the quantity of characters with that status, and colors of circles, indicating different statuses. By simply clicking on a house's region, users are presented with a detailed demographic breakdown (including gender, blood status, and species) in a dedicated side panel, while clicking on individual bubbles reveals the precise count of characters corresponding to that blood type.

## Development Process

Our development process began with an interactive bar chart where each bar represented the number of characters in each Hogwarts House. The bars were also color-coded according to their respective House colors, and clicking on a bar revealed the same information as the final version. While this design still allowed for interactivity, we soon realized that it emphasized raw character counts rather than the deeper demographic differences within each House. Since the

number of characters per House is dependent on the dataset and does not necessarily reflect meaningful insights about Hogwarts' broader population, we reconsidered our approach. Wanting to shift the focus toward the composition of each House rather than just its size, we transitioned to a faceted bubble chart. This change allows users to immediately grasp differences in the distribution of pure-bloods, half-bloods, Muggle-borns, etc. across Houses, rather than being anchored to total character counts. We believe that this evolution in design not only improves the visualization's narrative clarity but also invites deeper exploration, making the demographic makeup of Hogwarts more engaging and intuitive for users.

While the bubble chart effectively visualizes the composition of each house, subtle differences in size might not always be immediately clear. To address this, we enabled users to click on individual bubbles to reveal the exact character count for each blood status, providing additional numerical clarity. Another challenge was balancing aesthetics with functionality. Since we designed the visualization to resemble a framed display, we decided not to include traditional axis labels, since they could disrupt the theme. Instead, we enhanced our cues by incorporating a wand cursor for clickability, clear instructions on a side panel, and a well-placed legend, making sure users can easily interpret the color-coded blood statuses without compromising the immersive design. Another trade-off was the implementation of our cursor feature where the user's cursor turns into a wand. While this adds to the magical aesthetic we wanted to bring to this visualization, the wand cursor itself is bigger than a normal cursor so can be slightly disorientating for the user when clicking between the individual bubbles. Ultimately, we decided the engagement that comes with this slight cursor change was worth any accuracy lost with natural mapping.

## Member Contributions

Jillian made the initial sketches of our visualization, worked on the patronus interactivity (which we ended up removing), styled CSS for the site, made storyboards and contributed to the report; all of which totaled about 9 hours. Alsa created the GitHub repo, set up the dev environment, and implemented the initial visualization with its core interactive features, including data selection and CSS styling, while also contributing to the report, dedicating 9 hours. Katie coded the bubble chart as an upgrade to our bar graph, added interactivity on individual bubbles and houses background, adjusted styling accordingly, which took 9 hours. Olivia added bubble color and legend and contributed to the report, taking around 8 hours. Coding the visualization and sizing took the most time.