The Bechdel Test: Representation of Women in Hollywood and Film

Process Book

By <removed for privacy reasons>

Table of Contents

Table of Contents 2

Team Members 4

Team Contract 4

Initial Planning 4

- Idea Brainstorm 4
- Mapping 4

Detailed Project Plan 7

- Students Working on the Project Plan 7
- Project Goals 7
- Tasks 8
- Presentation 8
- Description of Data 9
  - Available data 9
- Visualization Idea Sketches 10
- Interaction Storyboard Sketch 12
- Web Layout/Storytelling Sketch 13
- Project Timeline 14
- Feature List 14
- Description of Team Roles 15

Prototype V1 15

- Students Working on Prototype V1 16
- Dataset Update 16
- Innovative View 16
- Interaction Storyboard 17
- Screenshot of Full Page 19

Prototype V2 20

- Students Working on Prototype V2 20
- Updated Intro and Conclusion 20
- Updated Innovative View 21
- Updated Visualizations 21
- Screenshot of Full Page 23

Final Project 24

- User Feedback 24
- Restructured Website Outline 26

Screenshots of Updates 27

Final Thoughts **35**

Related Work 35

Questions 35

Design Evolution 36

Implementation 36

Evaluation 39

Team Members

Team Name: $quaaa

removed for privacy

Team Contract

See the signed contract below
<link removed for privacy reasons> (list of team expectations signed by everyone)

Initial Planning

Idea Brainstorm

Bechdel Test: Representation of Women in Film

https://data.world/fivethirtyeight/bechdel
https://data.world/fivethirtyeight/next-bechdel
https://data.world/sharon/bechdel-test
https://data.world/popculture/2016-movie-dialogue
https://annenberg.usc.edu/sites/default/files/2017/04/07/MDSCI_CARD_Report_FINAL_Exec_Summary.pdf

Mapping

Client/Audience/Goals

- Audience: general public, anyone interested in gender representation in film, filmmakers, theaters
- Goals: raise awareness of gender inequality in film (representation on screen, representation behind the camera, wage disparities, etc)

Questions

- What percentage of movies do people think pass the Bechdel Test vs. actual percentage of movies that pass?
- How do certain genres perform in terms of passing the Becky T (slang for Bechdel Test)?

- How have Bechdel Test results and representation more generally changed over time?
- How do Becky T passers perform (rating/awards/revenue) compared to non-passers?
- Has representation in different areas of the industry (on screen, directors, etc.) changed similarly over time?
- Do movies that pass the Bechdel test have majority woman actors?
- Do movies that pass the Bechdel test have majority woman crew members?
- (not sure if this data exists) For the top _ movies that passed the Bechdel test, what were the average/top earnings of the woman actor?
- (not sure if this data exists) Do international films pass the Bechdel Test more than domestic films?
- Other questions (for storytelling), are there other numerical values that can be assigned to movies about gender representation
- What is the typical gender breakdown (cast/crew) for films?
- Are leading actors typically male or female?
- Which studios are likely to make movies that pass the Becky T?
- What parameters are the most likely for predicting whether or not a movie will pass the Becky T (# of women writers, gap between salary of top actor vs actress, genre, studio, etc.)?

Available Data

- ~2000 movies from 1970 to 2013 (https://data.world/fivethirtyeight/bechdel)
    - movie title
    - pass/fails Bechdel test
    - year
    - budget
    - domestic gross
    - international gross
- ~5000 movies(?) from 1900 to 2014 (https://data.world/sharon/bechdel-test/workspace/file?filename=Bechdel-master%2Fbechdel.json)
    - title
    - year
    - rating
    - pass/fails Bechdel test (dubious? visible?)
- ~20000 movies(?) from 1915 - 2018 (https://data.world/sharon/bechdel-test/workspace/file?filename=Bechdel-master%2Frevenue.csv)
    - title
    - year
    - genre
    - revenue
    - budget
- 50 top grossing movies from 2016 (https://data.world/fivethirtyeight/next-bechdel)

        - movie title
        - pass/fails Bechdel test
        - pass/fails other tests (peirce, landau, feldman, villareal, hagen, ko, villarobs, waithe, koeze_dottle, uphold, white, rees_davies)
        - actors
            - name
            - character's name
            - character type (leading, supporting, etc)
            - billing rank
            - gender
        - crew
            - name
            - position
            - gender (probability/guess)
- 13 top grossing movies from 2016 (https://data.world/popculture/2016-movie-dialogue)
    - title
    - characters
        - name
        - total words
        - gender

Visualization Structure (Type of Story)

- include movie scenes?
- description of bechdel test
- ask user their estimate for # of movies passing bechdel test (then show actual data)
- top grossing movies from 2016 (present day)
    - bechdel test, cast gender ratio (and positions), crew gender ratio (and positions), dialogue ratio b/w men and women on screen
- movies over time (1900 - 2018)
    - bechdel test, genre, revenue
- conclude with optimism, current movies today (historic)

TODO

- <Student 1>
    - At least 3 sketches of visualization ideas for your project
    - A sketch of an interaction storyboard
    - A sketch of your webpage layout/storytelling
- <Student 2>
    - Definition of goals and tasks of the final project (1-2 pages)
    - A description of your data and where you will get the data from (at least concrete ideas on where to acquire the data)
- <Student 3>

    - The team expectations agreement should be a single piece of paper and include your names, and list the rules and expectations you agree as a team to adopt (e.g., preparation for and attendance at group meetings, making sure everyone understands all designs and code, communicating frankly but with respect when conflicts arise,...). Each team member should sign the sheet, indicating the acceptance of these expectations and intention to fulfill them.
    - Names of all students who have actively worked on the project plan. Only those students will get points for the submission.
    - A project timeline (with milestones when you are planning to finish which feature)
    - A feature list (with must-have, good-to-have, and optional items)
    - A description of team roles
- <Student 4>
    - Prepare slides for a 3 minute presentation of goals/tasks/sketches/data for peer feedback and include the presentation slides in your submission.

Detailed Project Plan

Students Working on the Project Plan

<removed for privacy issues>

Project Goals

Representation in movies has been a popular topic in 2018, with historic films like Black Panther and Crazy Rich Asians achieving huge box office success. With this final project, we hope to look further into one type of representation (gender representation) and determine how much better it's really getting over time. Additionally, by looking into how gender representation differs by studio, genre, domestic/international gross, and other factors, we hope to determine whether certain areas of the industry value gender representation more, and whether having more female representation correlates with economic success. Through this project, we want to learn more about representation in the film industry, bring attention to gender equality issues in film, and learn how to tell a compelling story with data.

Questions we want to answer:

- What percentage of movies do people think pass the Bechdel test, and what percentage actually pass?

- How have Bechdel test results and gender representation changed over time?
- Has representation in different areas of the industry (on screen, directors, etc.) changed similarly over time?
- How do different genres perform in terms of passing the Bechdel test?
- Which studios are likely to make movies that pass the Bechdel test?
- How do Bechdel test passers perform (rating/awards/revenue) compared to non-passers?
- What is the typical gender breakdown (cast/crew) for films?
- Are leading actors typically male or female?
- How many movies that pass the Bechdel test have majority female actors?
- How many movies that pass the Bechdel test have majority female crew members?
- Do female actors make more money in films that pass the Bechdel test?
- Do international films pass the Bechdel Test more than domestic films?
- What parameters are the most likely for predicting whether or not a movie will pass the Bechdel test (# of women writers, gap between salary of top actor and actress, genre, studio, etc.)?

Tasks

Data manipulations

- Filtering by year (implemented with a slider), so the user can visualize differences in representation over time
- Filtering by genre, so the user can see differences between levels of gender representation in different movie genres

Visual manipulations

- We could create tooltips for each movie, so if the user hovers on a particular movie, they see more information (title, year, genre, etc.)
- For our more detailed analysis of 2016 movies, we'd like to have an interactive "detail view" that appears when the user clicks on a movie and shows more information about the movie's cast/crew/success. This ability to select a movie and see more details could be paired with a zoom-type visual manipulation, so the movie the user clicks on becomes the focus of the visualization
- We could include animations (play/pause buttons) and motion to help visualize changes unfolding over time

Presentation

https://docs.google.com/presentation/d/1kmkNZ4K0KCmQx_CH1djJNJAdjZoBhxhbZKeIXcWmDo4/edit#slide=id.g47de515b00_0_119

Description of Data

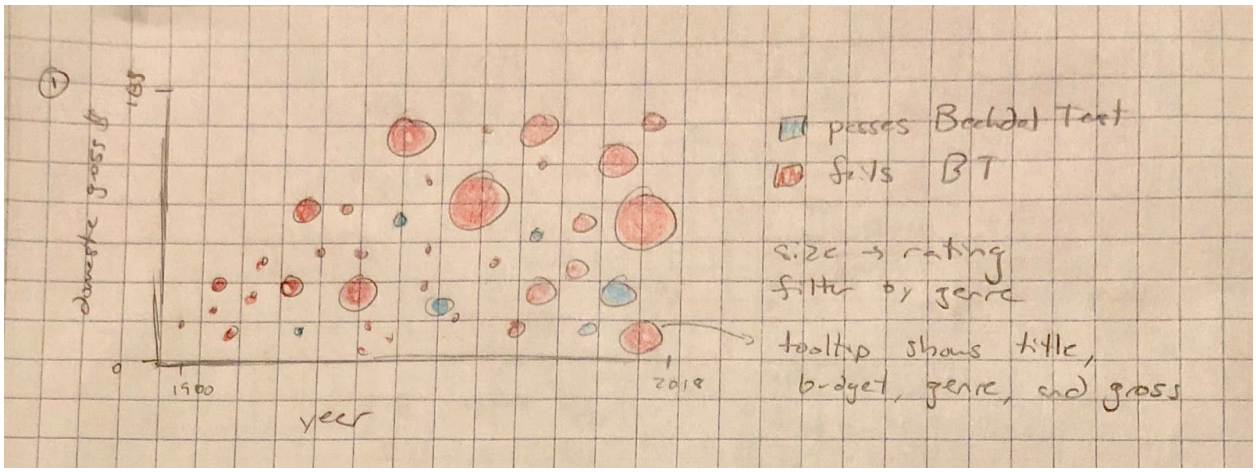
Because our final project will visualize changes in gender representation in films, we'll need data on Bechdel test results over time, along with data on the gender composition of different movies' casts and crews and the salaries of male and female actors. Additionally, we'd like to see if gender representation differs by genre, studio, director, etc., and whether the level of gender representation in a movie correlates with its box office success. Because of this, we'll need datasets that contain this information for each of the movies we're analyzing. We also want to determine how much representation people think exists, so we'll need survey data that we can either find or gather ourselves. The datasets we've already found are listed below, along with a brief description of what each dataset contains.

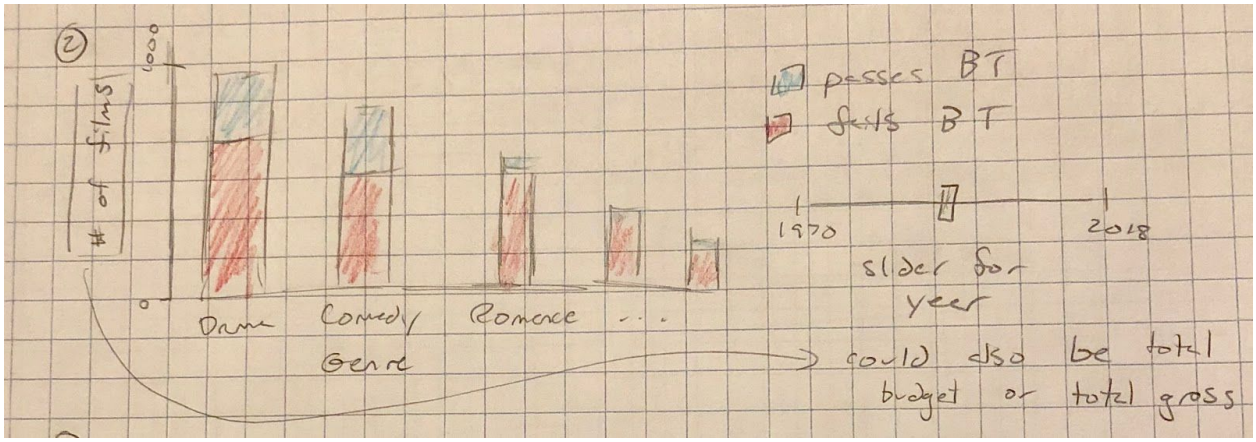
Available data

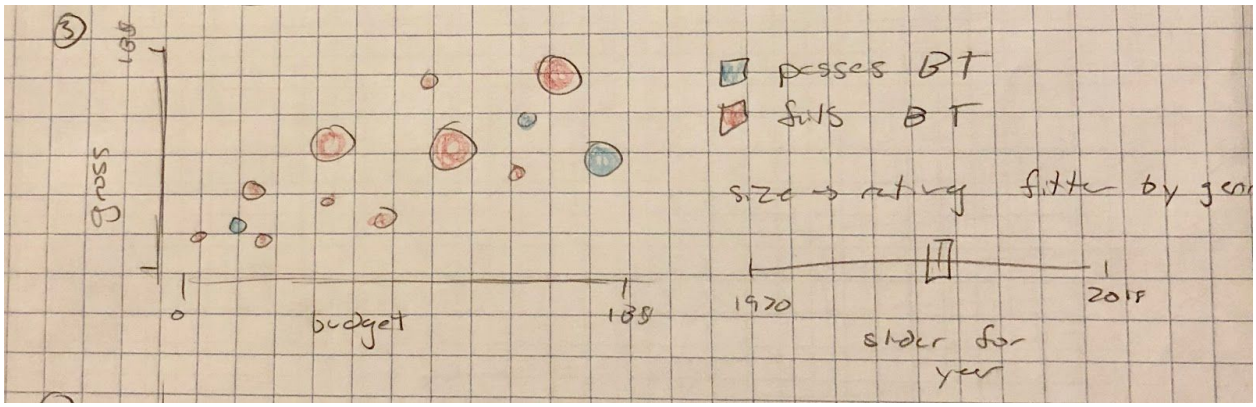
- https://data.world/fivethirtyeight/bechdel
    - ~2000 movies from 1970 to 2013, with information about Bechdel test results, year, budget, and domestic/international gross
- https://data.world/sharon/bechdel-test/workspace/file?filename=Bechdel-master%2Fbechdel.json
    - ~5000 movies from 1900 to 2014, with information about Bechdel test results, year, and rating
- https://data.world/sharon/bechdel-test/workspace/file?filename=Bechdel-master%2Frevenue.csv
    - ~20,000 movies from 1915 to 2018, with information about year, genre, revenue, and budget
- https://data.world/fivethirtyeight/next-bechdel
    - 50 top grossing movies from 2016, with information about Bechdel and other test results, the genders and character types of actors, and the genders and positions of crew members
- https://data.world/popculture/2016-movie-dialogue
    - 13 top grossing movies from 2016, with information about the gender of characters and the number of words they speak

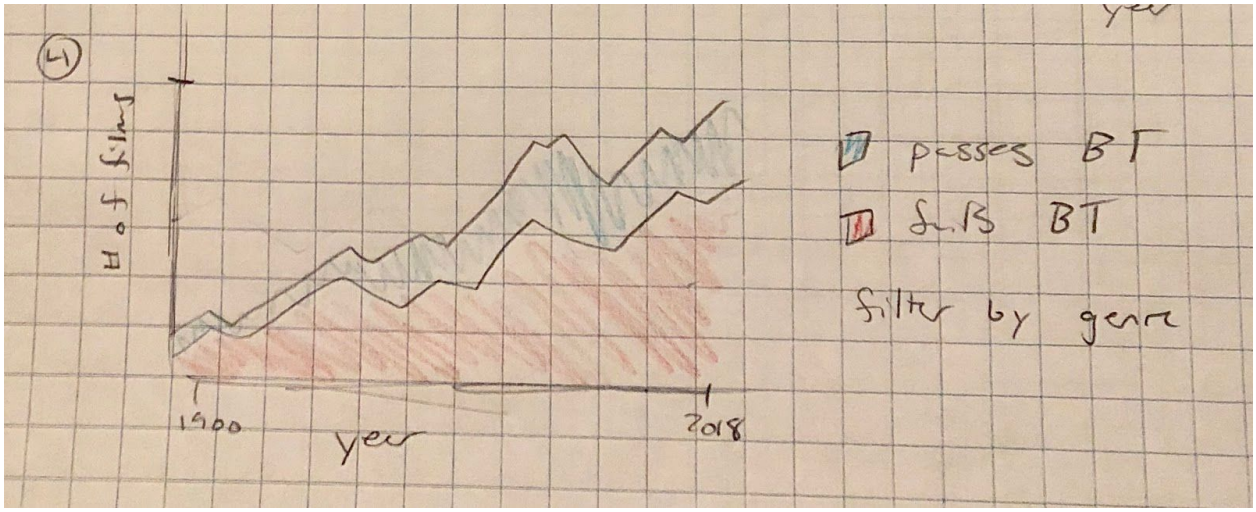
Based on the data we have, it looks like we'll be able to visualize trends in representation based on Bechdel test results over several decades, and if our datasets have enough overlap, we might also be able to see how factors like rating, genre, and budget correlate with Bechdel test results over time. We have more detailed data for 2016 movies, so we can use that information to analyze more types of gender representation for those films.

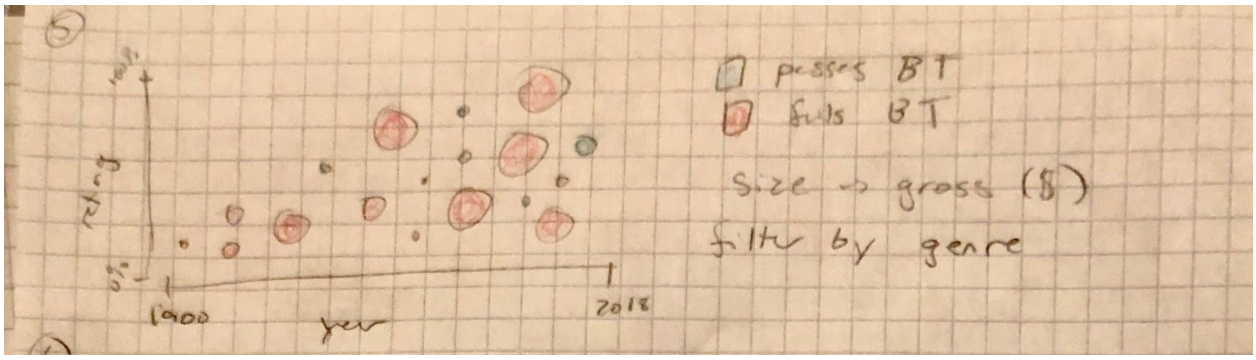
Visualization Idea Sketches

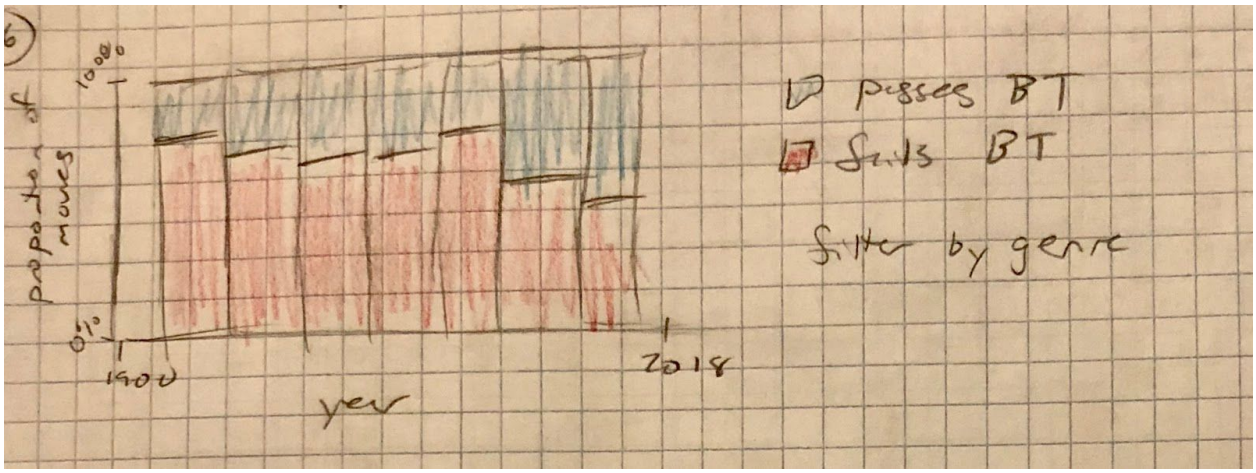




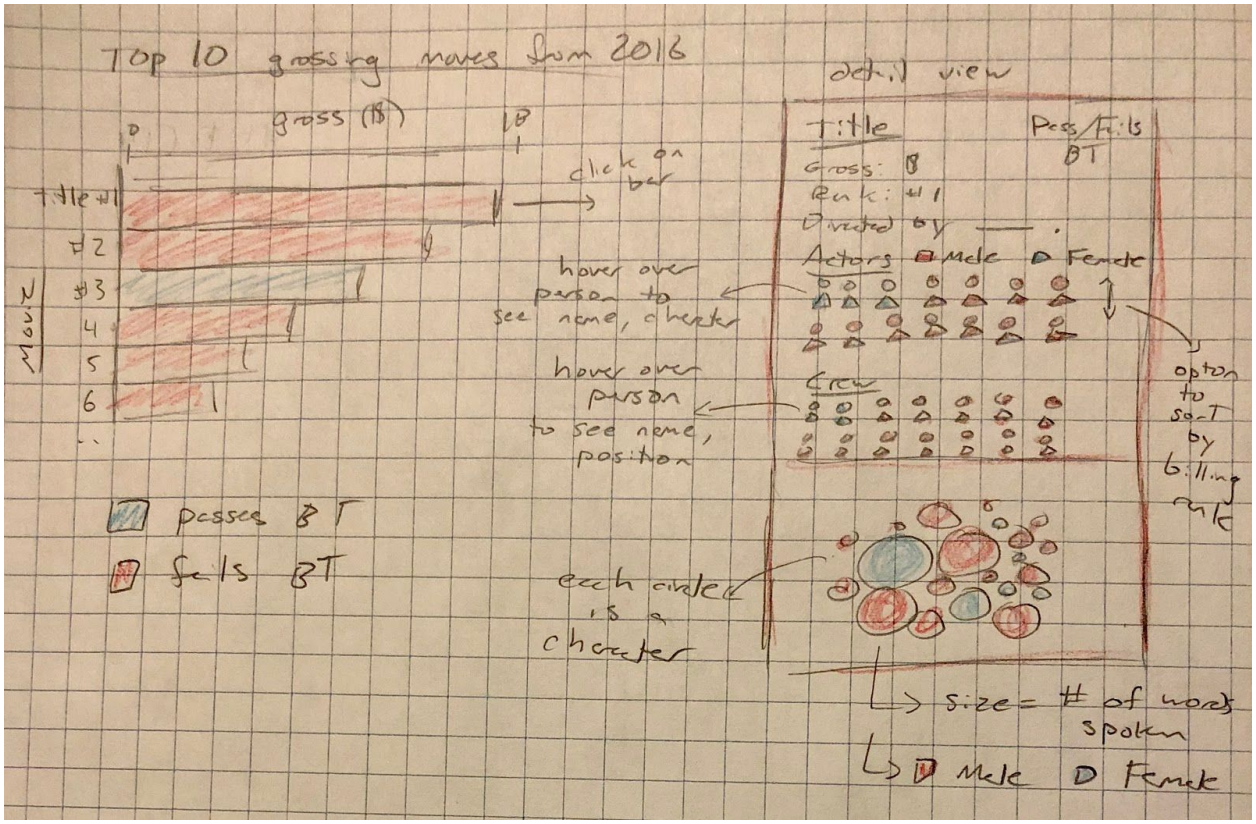



4
# of films
passes BT
fails BT
filter by genre
1900
year
2018
year

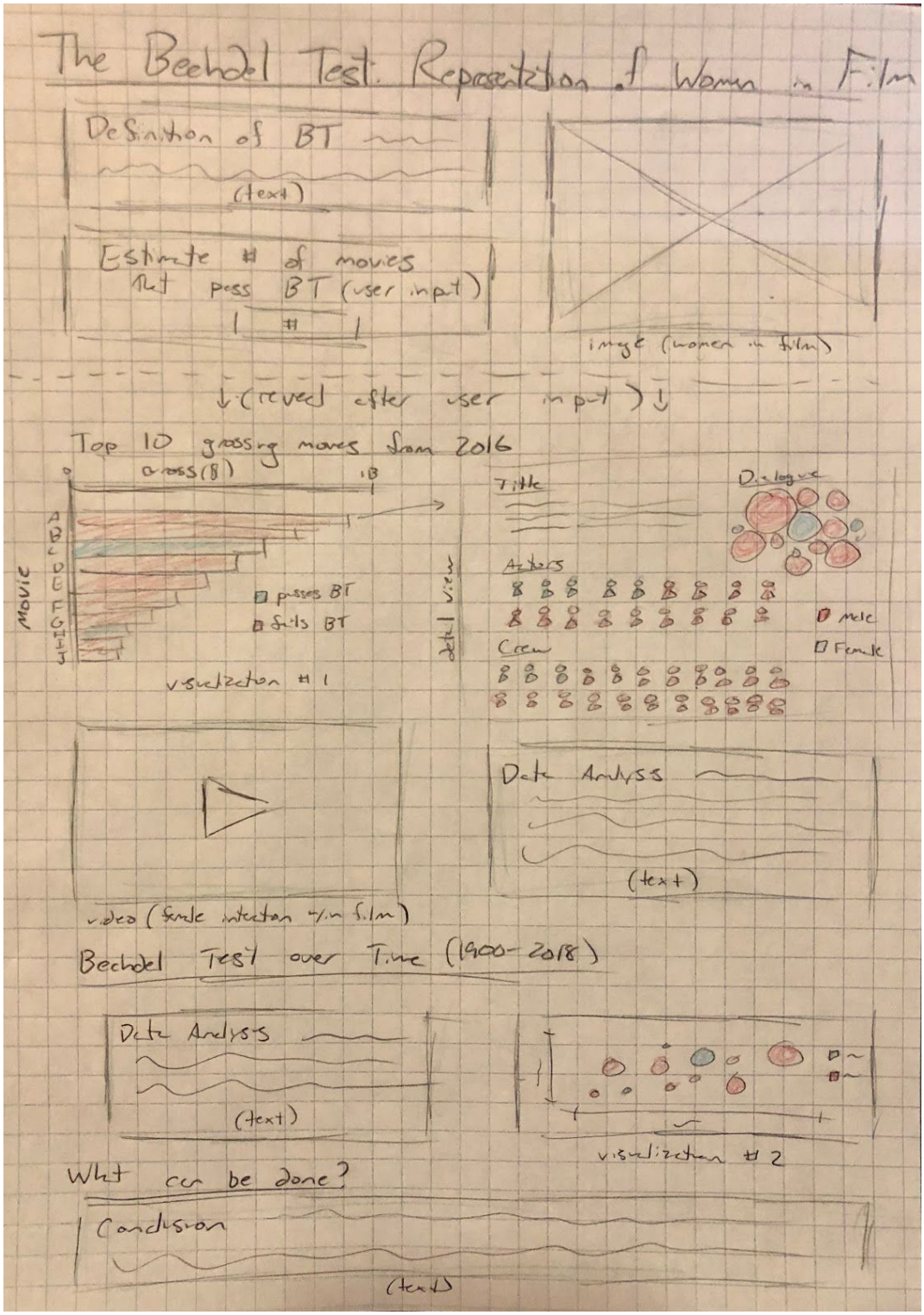

5
rating
100%
0%
passes BT
fails BT
size → gross ($)
filter by genre
1900
year
2018


6
proportion of movies
100%
0%
passes BT
fails BT
filter by genre
1900
2018
year

Interaction Storyboard Sketch



Web Layout/Storytelling Sketch



Project Timeline

November 14 - We aim to finalize out design ideas and assign concrete roles for design implementation in the following week. Schedule dates (during or outside lab) to meet and discuss progress on project designs and demos.

November 18 - Continue to give members updates on design progress. Redesign certain features if problems arise.

November 21 - Similar to last week, we will continue to give members updates on design progress and redesign certain features if problems arise.

November 25 - As the final project submission date draws closer, we will continuously give updates on design progress, finish all **must-have** features (about 4-5 visualizations), and start merging ideas into one codebase.

November 28 - Finish merging ideas into one codebase, work on **good to have** features and **optional** features (1-2 extra visualizations OR extra javascript features), solicit design critiques from outside sources (from TFs, friends in CS171 and friends outside CS171) and finalize the dashboard design layout. Redesign the story element and create last minute designs if need be.

December 1-2 - Implement finishing touches on the webpage, solicit design critiques from outside sources and finalize the dashboard for submission.

Feature List

Must-Have (at least 5 visualizations)

- Visualization showing relationship between year, domestic gross and Bechdel Test (include tooltips for hovering)
- Visualization showing relationship between year, rating (Rotten Tomatoes, audience rating, other ratings) and Bechdel Test (include tooltips for hovering), filter by genre
- Visualization showing relationship between genre and number of films/budget/total gross (filter by each)
- Visualization showing year and proportion of movies that fail or pass the Bechdel Test
- **BIG VISUALIZATION:** Show the Top 10 grossing movies, specific data regarding the movie including cast and crew gender representation and other details such as gross, budget, etc

Good to Have (1-2 extra visualizations)

- Visualization showing relationship between budget and gross (filter by year with slider)
- Visualization showing Year and number of films

Optional (Cool things + Fancy Javascript)

- Animations between visualizations, similar to watching a movie, the user wouldn't have to necessarily click anywhere or they can stop to click when they want to
- User can input their favorite movie and see if it passes the test
- Movie recommendations list
- Direct quotes from OR interview with Allison Bechdel (would need to contact Allison for interview)!

Description of Team Roles

<Student 1> - Team leader, Content Producer, creates and draws sketches, implements sketches, gives and discusses feedback, and contributes to the final project

<Student 2>- Content Producer, creates sketches, implements sketches, gives and discusses feedback, and contributes to the final project

<Student 3>- Content Producer, creates sketches, implements sketches, gives and discusses feedback, and contributes to the final project

<Student 4>- Content Producer, creates sketches, implements sketches, gives and discusses feedback, and contributes to the final project

Prototype V1

Visualization Overview

student 1, student 2, student 3, student 4

Top 10 Grossing Movies of 2016

- Bar chart (bar per movie, height is gross, color is pass/fail)
- Click on bar in bar chart opens detail view
    - Description → movie title, rank, revenue, etc
    - Actor/Actress Gender Ratio → count icons
    - Crew Gender Ratio → count icons
    - Gender Dialogue Ratio → bubble chart (TBD)

Movies Over Time

- Stacked area chart (# of films over time, separated by pass/fail BT) with brushable (filtering)
    - Genre stacked bar chart (separated by pass/fail BT)
    - Budget/Gross scatter plot (colored by BT, size by rating)

TODO

- <student 1>
  - Data scraping and cleaning complete (using the real data sets)
  - Rough webpage design and structure has to be done and implemented (placeholders for visualizations, text and images allowed), storytelling clear
  - First design of an innovative view (gender dialogue bubble chart)
  - Red visualizations (draft)
- <student 2>
  - Pink visualizations (draft)
- <student 3>
  - Green visualizations (draft)
- <student 4>
  - Blue visualizations (draft)

Students Working on Prototype V1

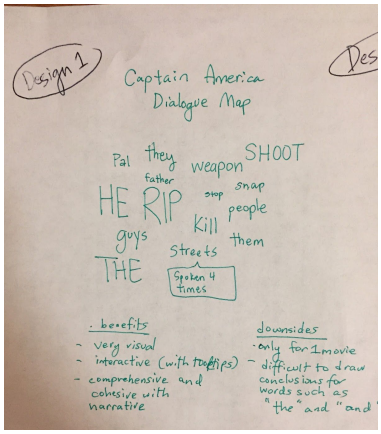
<student names>

Dataset Update

Along with the datasets we use at the top, we are looking into creating a dataset by looking at the *Captain America* script/dialogue (which was the top-grossing moving from 2016 and a movie that did not pass the Bechdel test). We plan to create an innovative view data visualization that is similar to a word cloud so we can recognize word patterns in films that fail the Bechdel test.

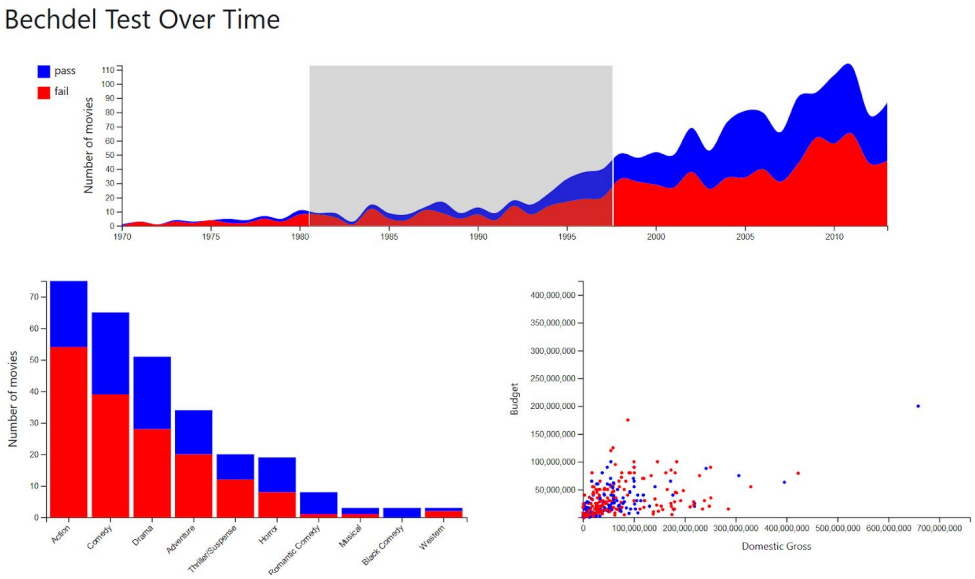
Innovative View

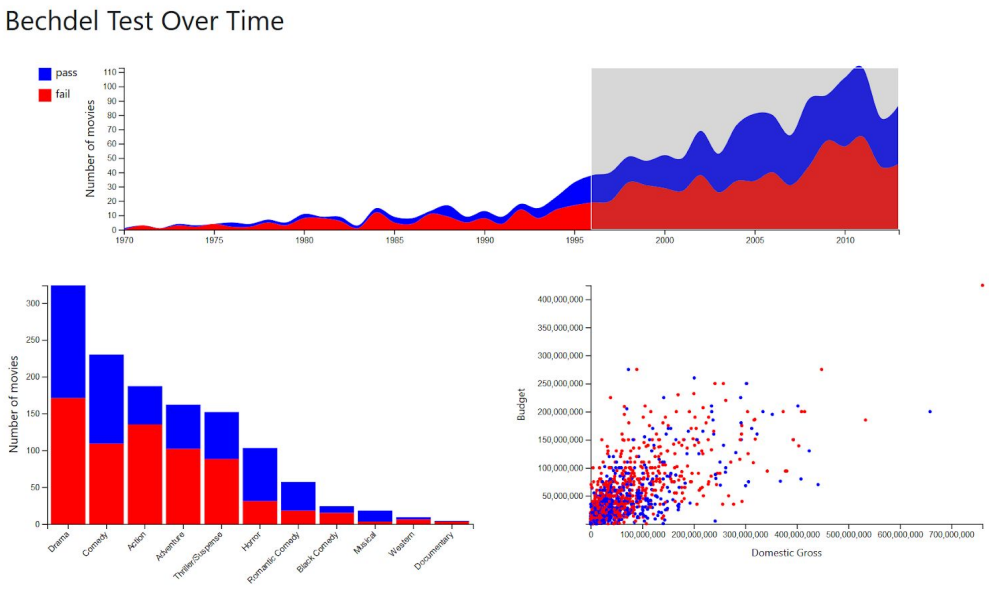
For our innovative view, we decided to implement a design similar to a word cloud. While we've created a sketch for this first design, we are still experimenting with ways to visualize dialogue. For instance, we can create separate word clouds for gender; a word cloud for female and male characters. Additionally, we're looking into performing sentiment analysis on the dialogue to categorize words as positive, negative or neutral. This innovative view aims to answer: What does it really mean when a movie fails a Bechdel test and does this have anything to do with the script?



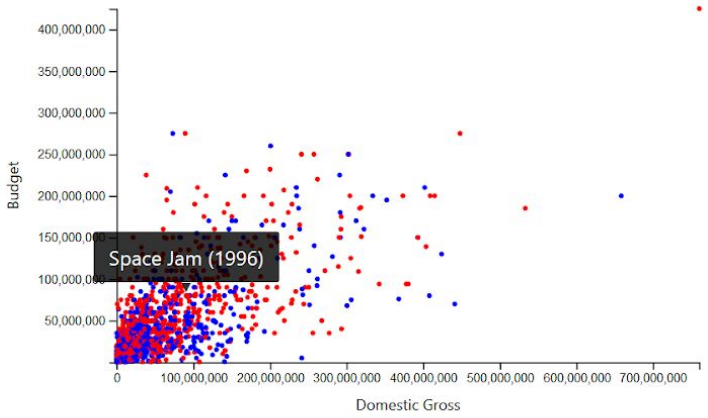
Interaction Storyboard

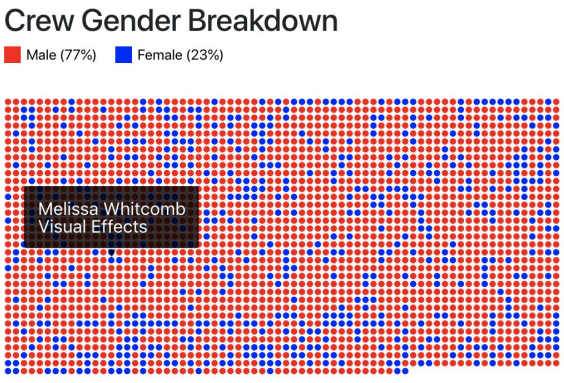
So far, we've implemented one interactive storyboard, displayed in the screenshots below. When the stacked area chart is brushed, the bar chart and scatterplot are filtered by year.





Examples of interactive tooltips:





DIALOGUE BUBBLE CHART (TODO)
DATA ANALYSIS (TODO)

Screenshot of Full Page

The Bechdel Test: Representation of Women in Film

DEFINITION OF BECHDEL TEST (TODO)

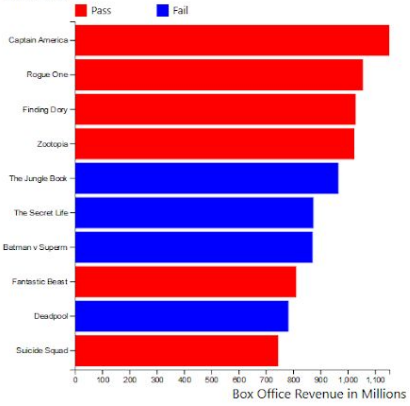
SOME IMAGE (TODO)

OUT OF THE TOP 10 GROSSING FILMS FROM 2016, HOW MANY PASSED THE BECHDEL TEST? (TODO)

Top 10 Grossing Movies from 2016

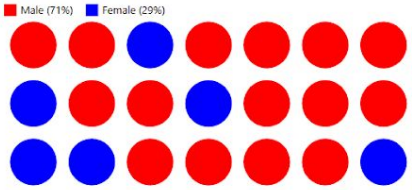
Box Office & Bechdel Test Results

BAR CHART

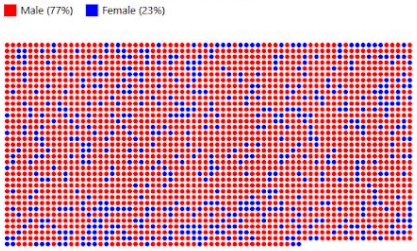


MOVIE DESCRIPTION (TODO)

Cast Gender Breakdown



Crew Gender Breakdown

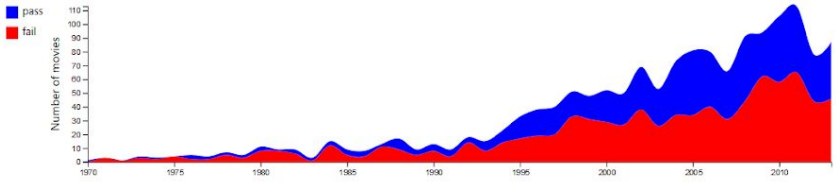


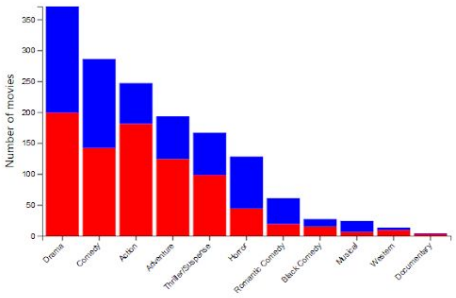
DIALOGUE BUBBLE CHART (TODO)

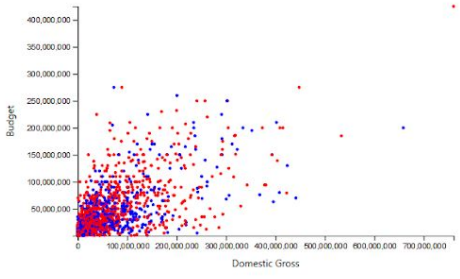
DATA ANALYSIS (TODO)

VIDEO (TODO)

Bechdel Test Over Time







Conclusion

CONCLUSION (TODO)

Prototype V2

TODO

- <Student 1>
  - create innovative dialogue chart for top 10 section
  - write conclusion
  - write introduction (definition of bechdel test)
  - write data analysis for top 10 section
- <Student 2>
  - add selection options for y-axis on BT over time charts (area chart and genre bar chart) → proportion, budget, or domestic gross
  - remove budget/gross scatterplot, replace with data analysis for over time section
- <Student 3>
  - get image for introduction
  - create user prompt interface (“Out of the top 10 grossing films from 2016, how many passed the Bechdel test?), hide below sections until user enters number then reveal
- <Student 4>
  - clicking on top 10 bar should update detail view
  - show movie description in detail view (top 10) → movie name, box office revenue, whether pass/fail BT
  - add sorting for cast/crew gender breakdown

Students Working on Prototype V2

<student names>

Updated Intro and Conclusion

We updated the intro page to include a way for the user to read the definition/intro, guess the number of films, and then reveal the main data visualizations. The intro is dynamic and interactive, including automatic scrolling and typing. We’ve also added bullet points to explain our data at the bottom and a conclusion about our project.

The Bechdel Test: Representation of Women in Film

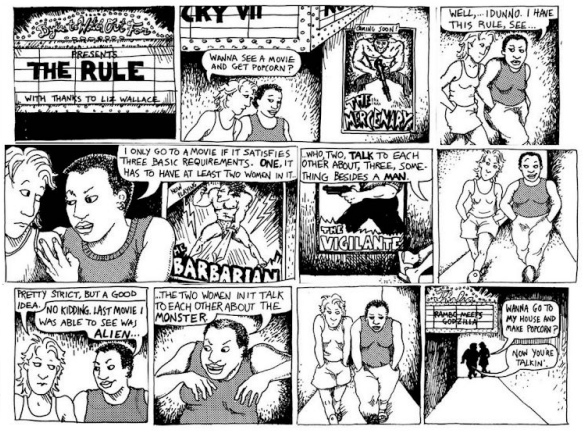
What is the Bechdel Test?

The Bechdel Test (also known as the Bechdel Rule or Mo Movie Measure) is a simple assessment used to indicate the active presence of women in Hollywood films and measure their dynamic character profile. It was originally coined by Allison Bechdel in the comic strip *Dykes to Watch Out For* in 1985. Through three rules, it forms a relatively simple baseline for female representation in film:

1. There must be at least two women,
2. Who talk to each other,
3. About something other than a man.

Easy enough, right?

Next



Out of the top 10 grossing films from 2016, how many passed the Bechdel Test?

Enter your guess:

3

Submit

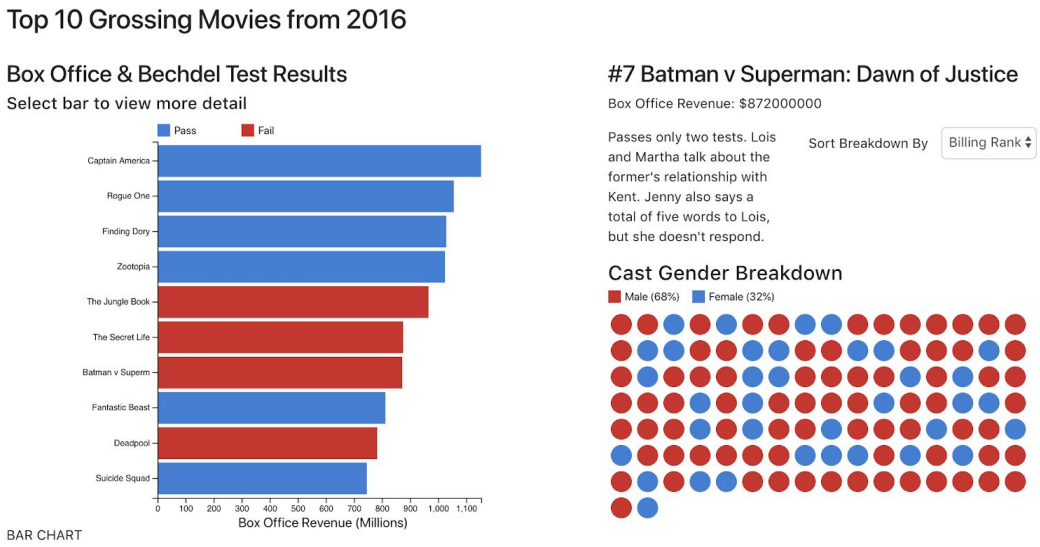
Updated Innovative View

Pictured above is an example of our innovative view. We realized that we are capturing words that don't give us much information about the actual dialogue, so along with this visualization, we are open to exploring other alternatives to visualizing the dialogue or some other feature.

Updated Visualizations

When you click on the bar chart, you can see the specific movie (with the cast and crew) show up as icons on the side. We've also updated the icon charts so that the user can filter by gender or by billing rank. Finally, we chose not to include the scatter plot because it didn't add as much

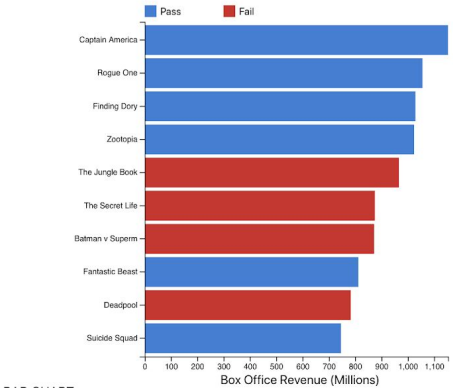
to the visualization as we would have liked it to -- you can't really see a strong relationship between budget/gross and Bechdel test results from the graph. Instead, we implemented a select box to change the y-axis for the area chart.



Top 10 Grossing Movies from 2016

Box Office & Bechdel Test Results

Select bar to view more detail



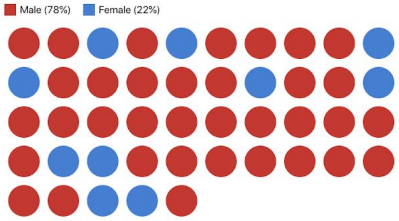
#10 Suicide Squad

Box Office Revenue: $746000000

Passes all three tests, barely. Amanda Waller, Harleen Quinzel, and June Moone have very brief conversations.

Sort Breakdown By: Billing Rank

Cast Gender Breakdown



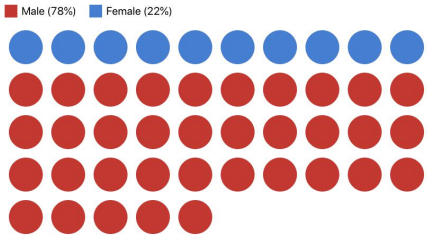
#10 Suicide Squad

Box Office Revenue: $746000000

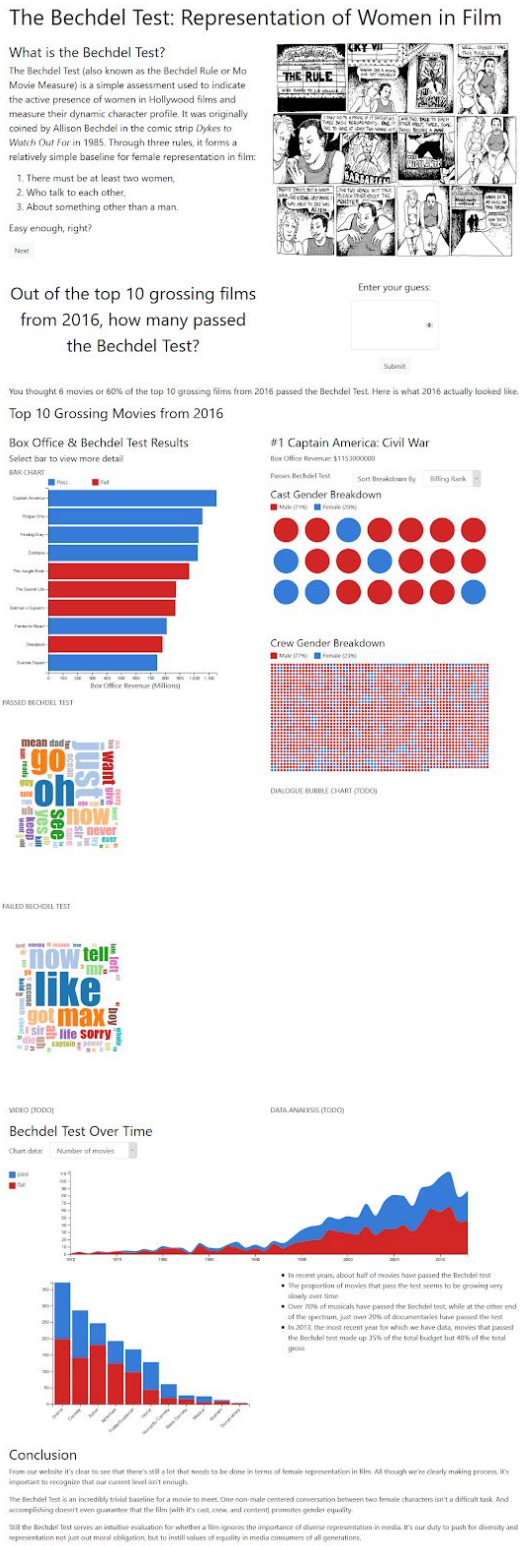
Passes all three tests, barely. Amanda Waller, Harleen Quinzel, and June Moone have very brief conversations.

Sort Breakdown By: Gender

Cast Gender Breakdown



Screenshot of Full Page



Final Project

TODO (Part 1)

- <Student 1>
  - restructure website
  - add on hover change for bars in bar chart
  - change icon chart to sort by billing rank (button)
  - handle missing crew data
  - create dialogue bubble chart
  - further data cleaning
- <Student 2>
  - add videos to top 10 movie detail (one per, dialogue between female characters?)
  - add data analysis for top 10 section
  - “learn more” links in conclusion
  - add visual to conclusion (image/video)
  - Fix narrative
- <Student 3>
  - interactive text/annotations for over time section
  - fix brushing for area chart
  - add y-axis labels for over time section, change y-axis values
  - credits section (datasets used, etc.)
  - change genre bar chart sorting for proportion (by % fail?)
- <Student 4>
  - add movie intro video (4 3 2 1) https://www.youtube.com/watch?v=67InjV6SrFw
  - add next buttons between sections
  - add second question for transition into over time section
  - make user guess to be more prominent (larger text?)
  - style website (fonts and font-size, colors, margins, etc)
  - remove animated text

Examples of some of some relevant updates from the previous design process

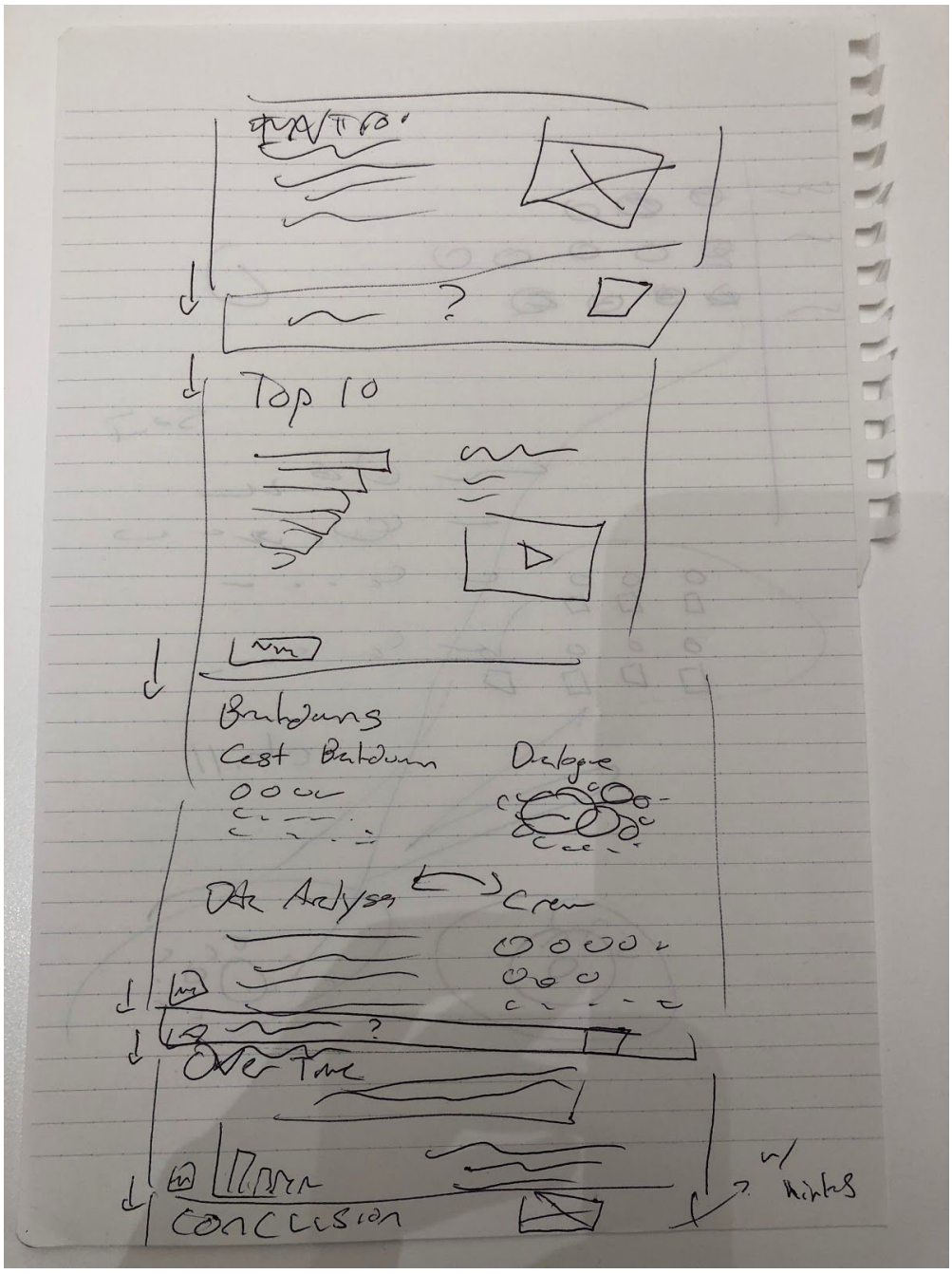
User Feedback

User Feedback from Nam on 11/26

- Tooltip over barchart or something to indicate interactivity
- Change the “billing” term or start by gender by default
- Improve the circle chart for communicating order
  - Talk about composition of order

- Take word cloud by phrase
- Formatting the money for the area chart
- Illuminate relationships between budget and time possibly
- Interaction of text and the visualization for area chart
- Use Annotation to show that you can interact with the charts
- Fix bug with repeated intro text
- Increase font size or highlight interaction of their guess with our visualization.
- Lacking in story, want something narrative. Add more text, and videos
- Change the title of the conclusion

Restructured Website Outline



Screenshots of Updates

Out of the top 10 grossing films from 2016, how many passed the Bechdel Test?

Enter your guess:

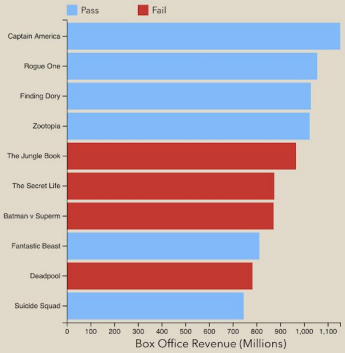
1

Please enter a valid integer between 0 and 10.

2016'S TOP 10 MOVIES MOSTLY PASSED THE TEST, BUT FAILED AT LARGER REPRESENTATION

Box Office & Bechdel Test Results

Click any bar to view more details



#1 Captain America: Civil War

Box Office Revenue: $1,153M

Passes all three tests, barely. The team is collectively discussing mission details, during which Natasha (Black Widow) and Wanda (Scarlet Witch) briefly address one another.

via ytCropper

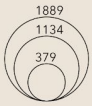
Actors Regularly Outnumber Actresses & The Dialogue Disparity Is Often Wider

Gender

Male (Characters 71%, Dialogue 84%)

Female (Characters 27%, Dialogue 16%)

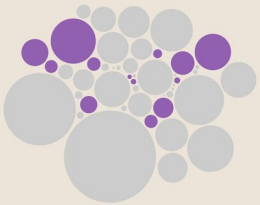
Number of Words Spoken



Split by Gender

Split by Role

Select Movie: Captain America: Civil War



Underrepresentation Continues In Crews

Male (77%) Female (23%)

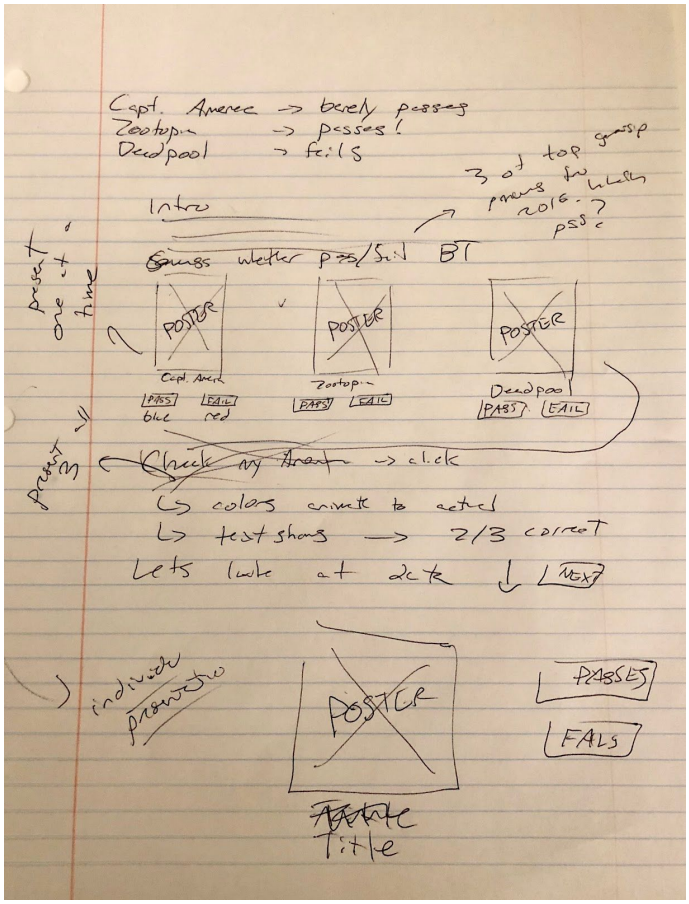
What does this show us?

Although the majority of the top 10 movies of 2018 passed the Bechdel Test, only a few them passed the test with more than a few lines of dialogue. The Suicide Squad movie clip is one of the worst offenders with the qualifying conversation being 5 words total. In multiple ways these movies failed on the representation front. The amount of female directors for all 10 movies is 0. And interestingly enough, that's the same number of movies with more female producers than male producers. And while grand total of two films have female writers, a solid total of zero have more female writers than male writers. Even when looking at cast and crew as a whole, the average breakdown is 71% male for cast and 74% male for crew. The Bechdel Test is a very easy baseline, that most of these movies do pass, but the spirit of test, the idea of equal representation, is clearly missed.

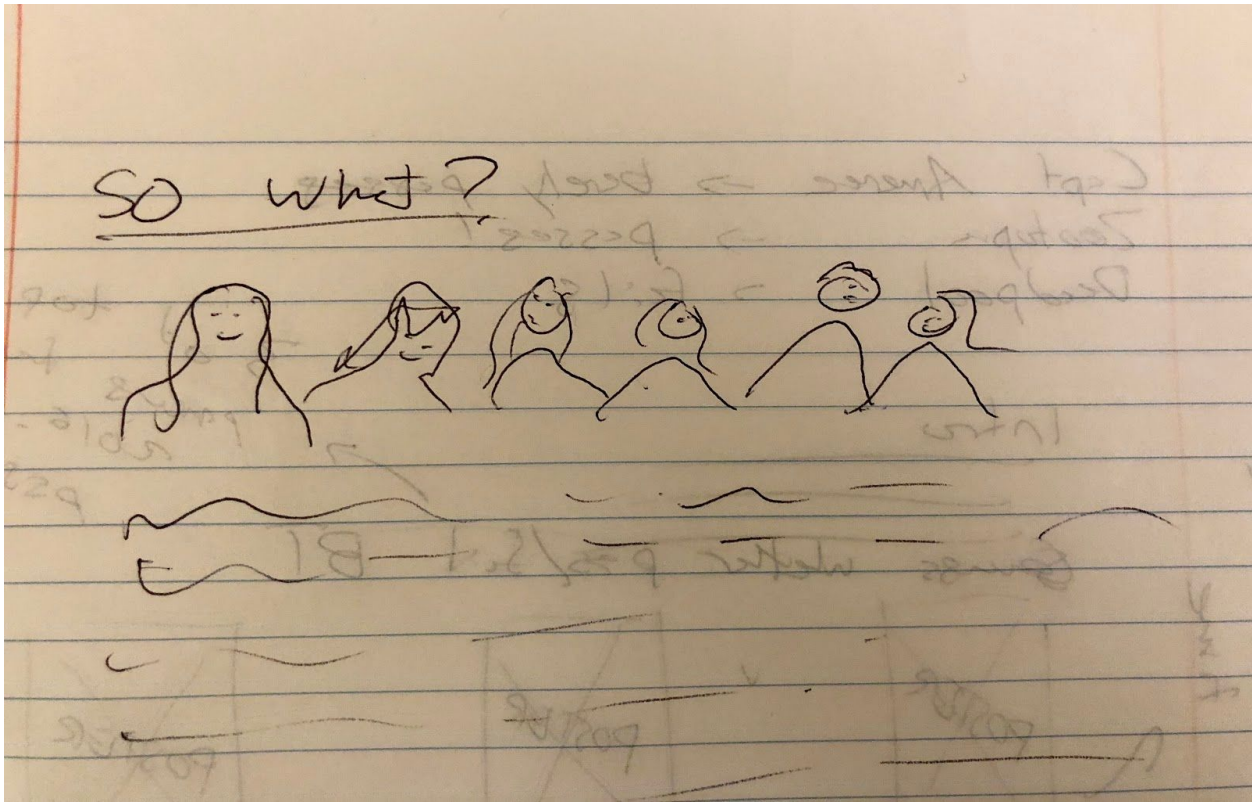
Feedback 2:

- Change title of top 10 movies of 2016
    - Seems disconnected from the prompt above, might connect more if we change the title though
- Use slider instead of asking them to type in a number
- Format the revenue
- Move the legend closer to circles, because it was hard to tell what it was eventually got it
- Put the label of the bubbles at the top opposed to the bottom
- It's hard to tell if the bar chart was connected to breakdown below it
- Add the movie title to the cast breakdown title
- Make the data analysis interact with the visualizations
- Find a way to change the movie data without having to click on the bar chart
- Make the text throughout the same size as the one at the top
- Transition is weird because it comes from the top left corner
- Show the line for the users guess on the time area chart
- Change the interactions our text inputs to something visual
- Set up github.io

New User Interactivity Sketch



New Conclusion Layout Sketch



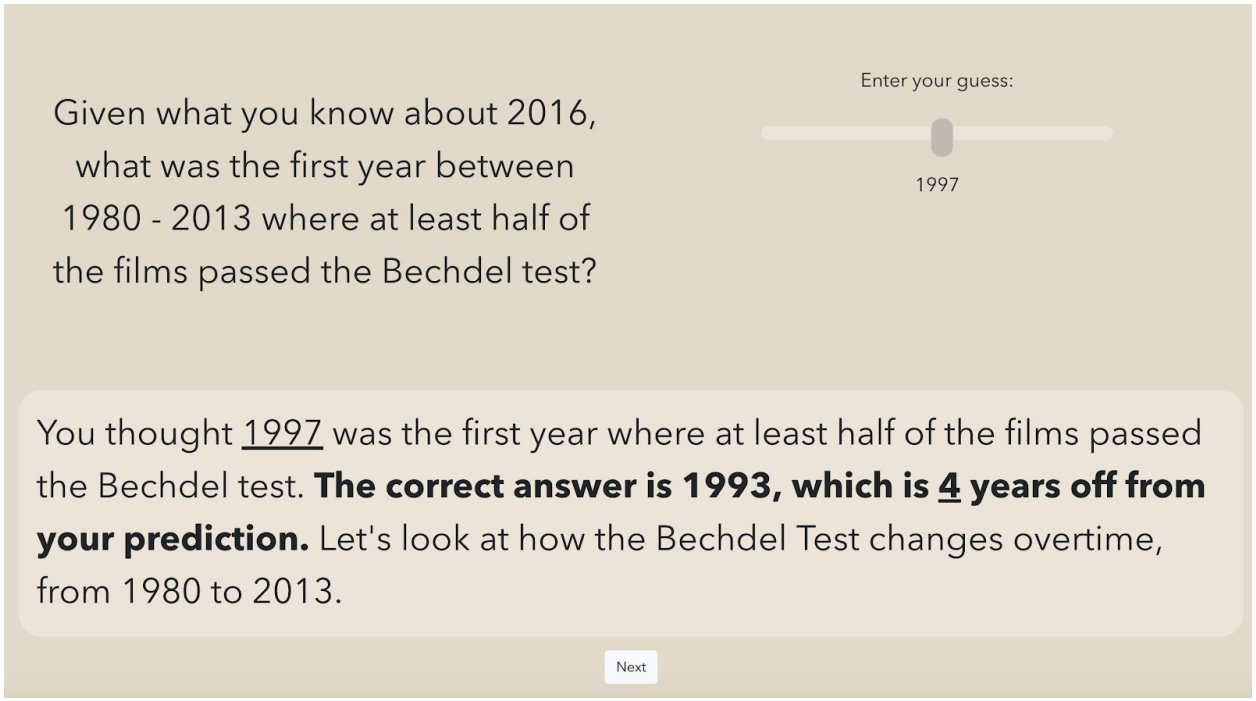
TODO (Part 2)

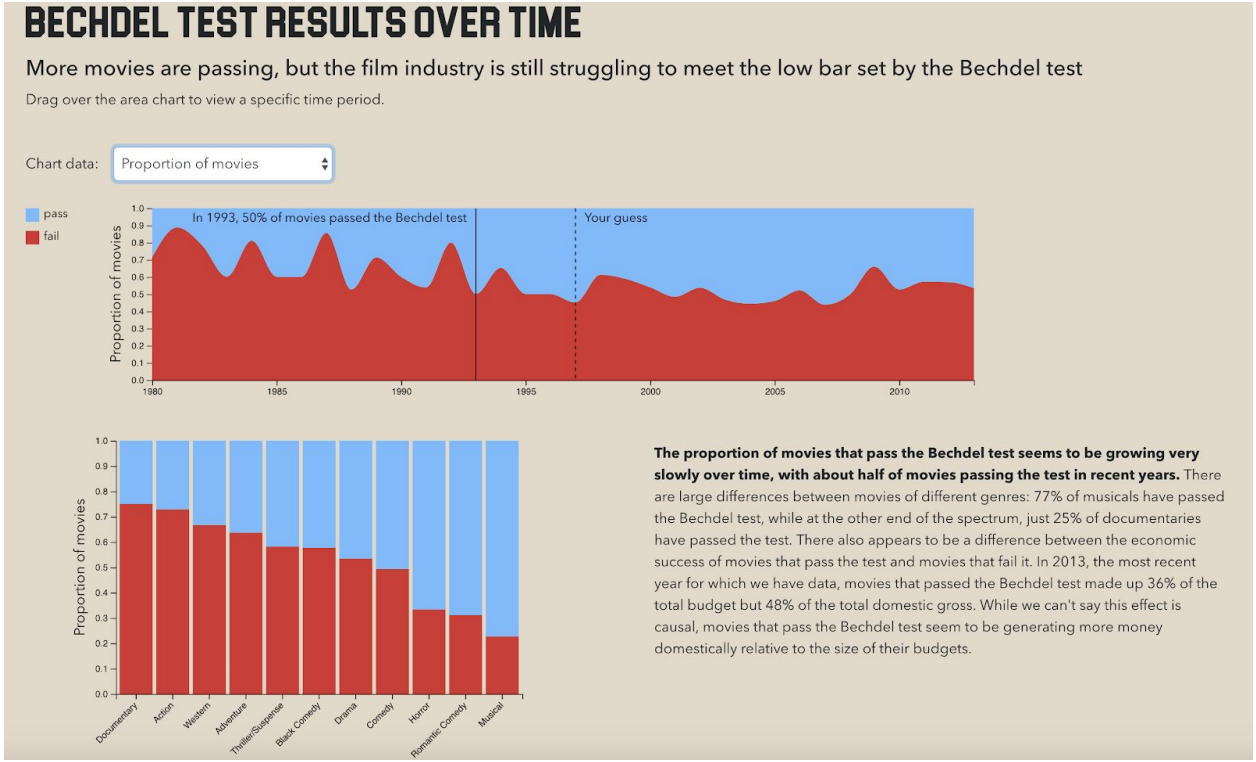
- <Student 1>
  - add movie selection in breakdown section
  - update bubble chart dynamically with movie selection
  - rearrange bubble chart labels (split categories above bubbles, size scale closer to chart, etc)
  - update breakdown viz titles with movie selection
  - fix % calculation for character genders
- <Student 2>
  - change number inputs to sliders
  - add next button between over time section and conclusion
  - add intro screen with enter button (before countdown)
  - view more details button after top 10 bar chart (goes to breakdown)
  - replace intro image, link to comic in text
  - women in hollywood conclusion image
- <Student 3>
  - add annotation for user input
  - genre bar chart transitions
  - update credits
  - change question for top 10 section

- <Student 4>
    - Format the revenue
    - update bubble chart interaction with movie selection
    - text sizes
    - Interactivity between texts and bar charts
    - condense paragraphs
    - change viz titles (to be more descriptive, link narrative together)
    - write readme

Update: We have a website link!! https://squaaa.github.io/TheBechdelTest/

Screenshots of relevant updates to our site:





We also realized that our data for movies before 1980 is sparse, so we chose to start the area chart at 1980.

SO WHAT?

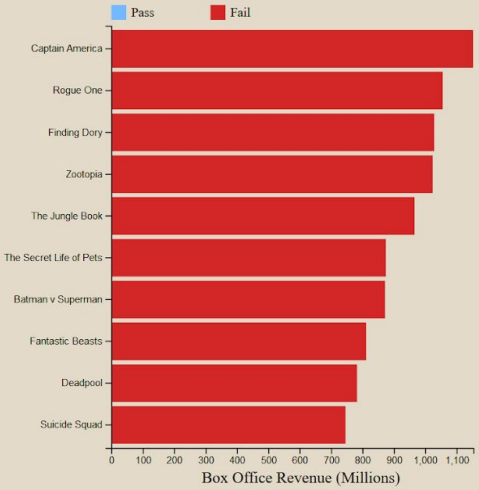
The data makes the issue very apparent: there's still a lot that needs to be done in terms of female representation in film. From our analysis of historical rate of success in passing the bechdel test, it's very clear that we're making progress, but the process is too slow, and the metrics we use aren't even holistically evaluative. The Bechdel Test is an incredibly trivial baseline for a movie to meet. One non-male centered conversation between two female characters isn't a difficult task some of the movies passed the test with less than 20 words spoken in the passing conversation. Accomplishing Bechdel's benchmark in no way guarantees that the film (with its cast, crew, and content) promotes gender equality. Still, the test serves as an intuitive evaluation for whether a film ignores the importance of diverse representation in media. It's our duty to push for diversity and representation not just out of moral obligation, but to instill values of equality in media consumers of all generations. But don't just take our word learn more about the Bechdel test and representation:

Analysis of USC Study on Female Representation in FilmDiscuss The Bechdel Test Verdicts On Every Film

To improve user engagement with our visualizations, we decided to reformat the first question about the top 10 grossing movies of 2016. The question formerly had a box where the user would type a number, and we changed this to an interactive quiz.

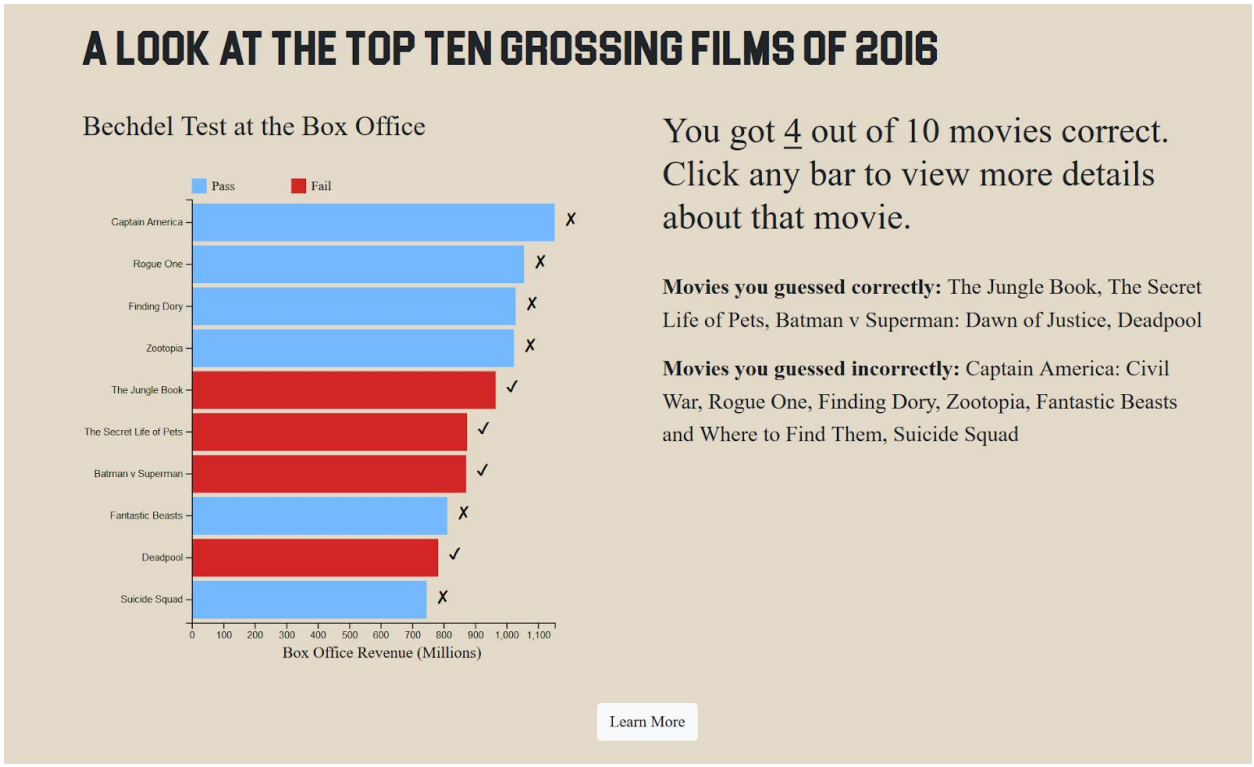
A LOOK AT THE TOP TEN GROSSING FILMS OF 2016

Bechdel Test at the Box Office



Which of the top 10 grossing movies from 2016 passed the Bechdel test? Click the bars to select your answers.

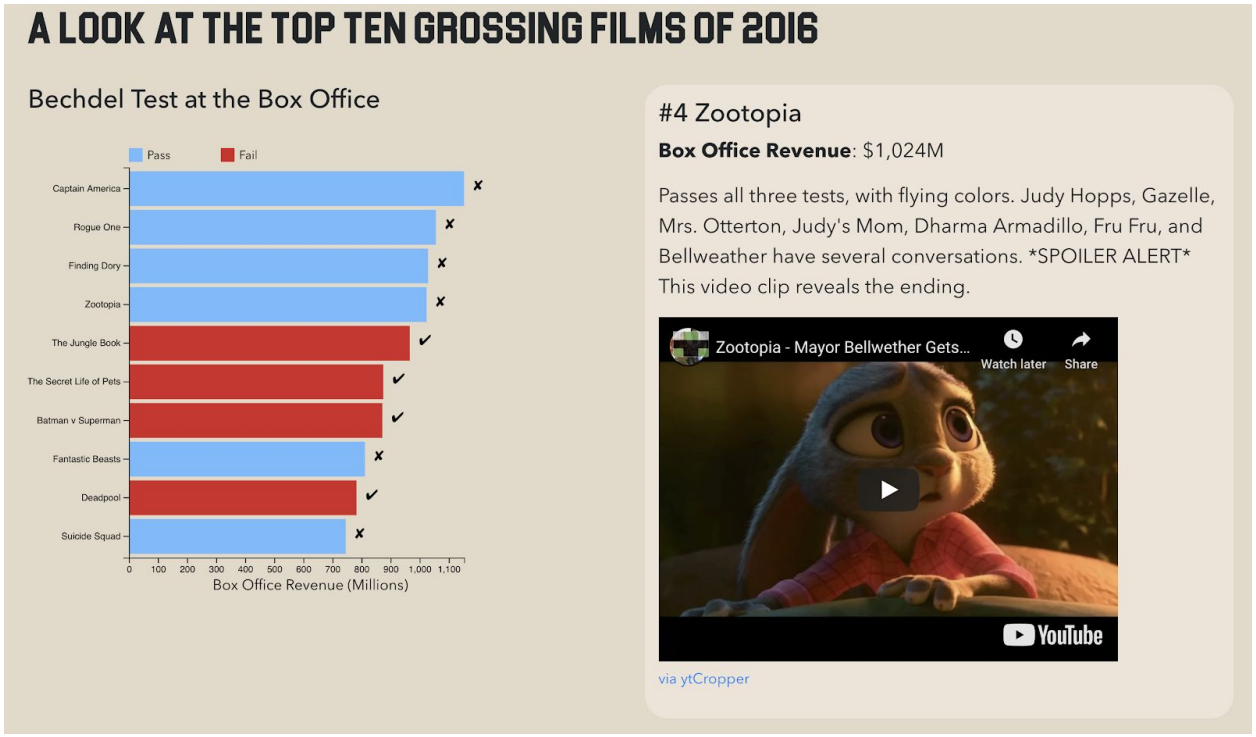
View correct answers



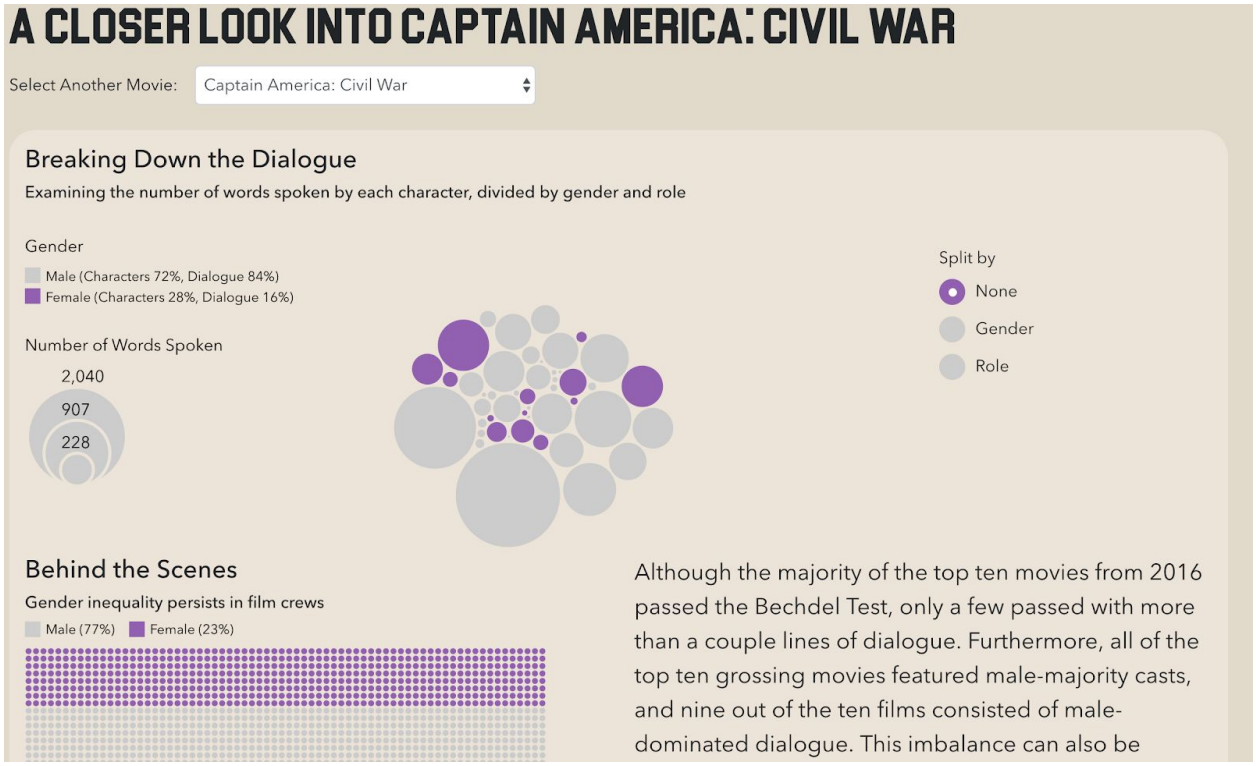
FINAL TODO's

- <Student 1>
    - complete README
- <Student 2>
    - add checkmarks to incorrect answers on barchart
    - areachart text
        - show genre chart text as label on visualization (disappear with new selection)
        - change areachart text on different selection (rather than on hover)
        - make current static paragraph part of visualization caption
    - fix barchart answers font
- <Student 3>
    - make breakdown its own section, restyle
    - format size legend #s (bubblechart)
    - stylize size legend circles (bubblechart)
    - restructure text in breakdown section
- <Student 4>
    - remove intermediate answer reveal for year guess
    - rephrase year question

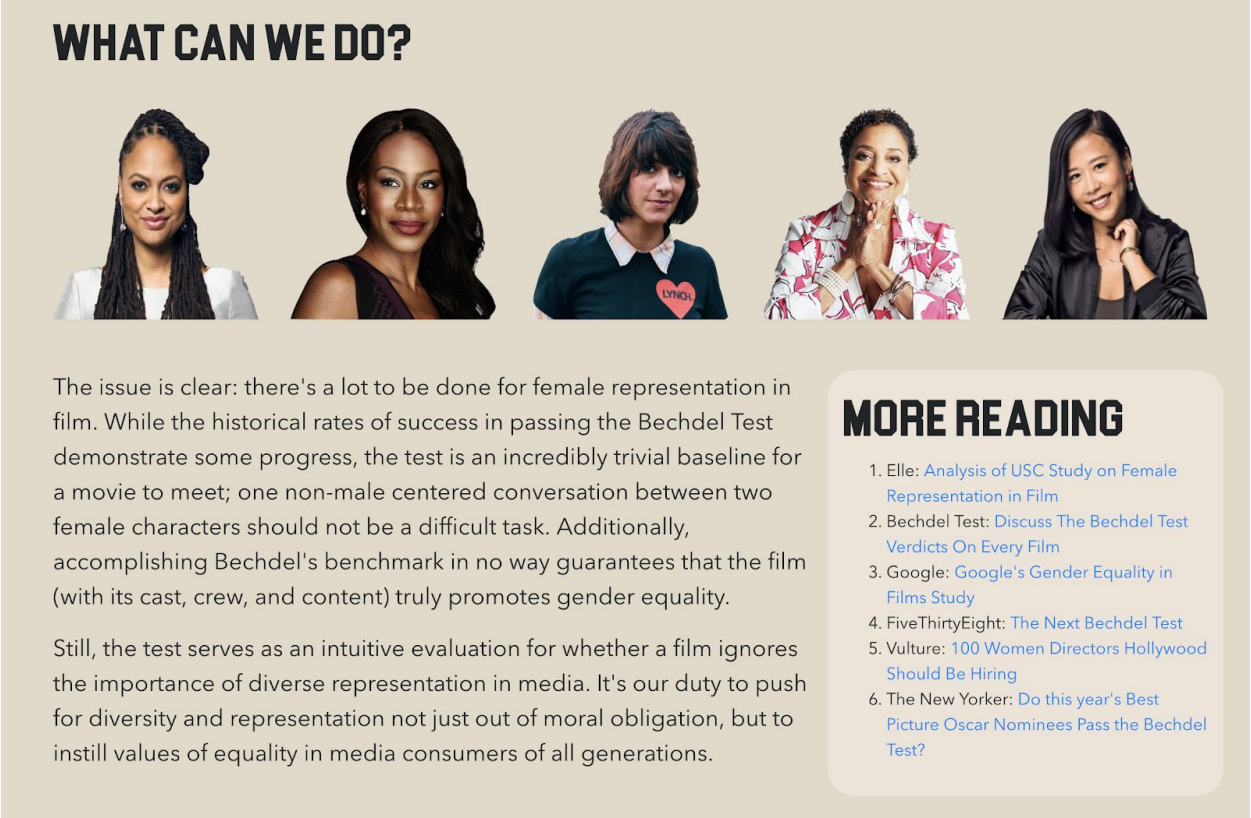
- record screencast



Improved the layout and included the check boxes for movies that the user got correct/wrong



Improved layout for the cast and crew visualizations



Made font bigger, condensed the read more section, updated the title

Final Thoughts

Related Work

FiveThirtyEight's article "The Dollar-And-Cents Case Against Hollywood's Exclusion of Women" inspired us to choose this topic and helped us find our initial dataset about Bechdel test results over time.

Questions

In the process of developing our website, we cut down our initial list of questions to focus on several important topics. The questions we ended up answering are listed below:

- What percentage of movies do people think pass the Bechdel test, and what percentage actually pass?
- What is the typical gender breakdown (cast/crew) for films?

- How does amount of dialogue differ between male and female actors?
- How have Bechdel test results and gender representation changed over time?
- How do different genres perform in terms of passing the Bechdel test?
- How do Bechdel test passers perform economically compared to non-passers?

Design Evolution

We ended up implementing most of the visualizations we initially proposed, with a few exceptions. The scatterplot showing the relationship between budget and gross for Bechdel test passers/failers didn't appear to provide any extra information, so we scrapped that in favor of a changing y-axis on the over-time area chart. We also explored several different ideas for the innovative design before settling on a bubble chart that visualizes dialogue and can be separated by gender and role. We felt that this visualization would allow users to see the disparity between the number of words men and women speak on screen, even in some movies that pass the Bechdel test.

To engage users, we also implemented two questions that we hadn't initially planned on including in our website. Initially, we had users type their answers to the questions, but after receiving feedback, we decided to make the tasks more visual. In our final version of the website, users are asked to directly click the bars of the first bar chart to guess which movies passed the Bechdel test. Later, they use a slider to guess the first year in which a majority of movies passed the test. By including these questions, we wanted to allow users to interact more with the visualizations and directly challenge their perceptions of representation in the film industry.

Implementation

In the 2016 section of the website, there are several interactive elements. The bar chart is initially used for an interactive quiz -- users click on the bars to indicate which movies they think passed the Bechdel test. Pictures of this are included in the "Screenshots of Updates" section of the process book. After the quiz is completed, clicking on the bars becomes a way to view more details about each movie.

Next, we show users even more information about each film, including an interactive bubble chart that visualizes dialogue. Screenshots of this interactivity are included below.

A CLOSER LOOK INTO CAPTAIN AMERICA: CIVIL WAR

Select Another Movie: Captain America: Civil War

Breaking Down the Dialogue

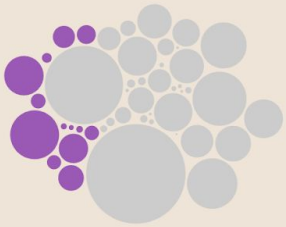
Examining the number of words spoken by each character, divided by gender and role

Gender

Male (Characters 72%, Dialogue 84%)
Female (Characters 28%, Dialogue 16%)

Number of Words Spoken

2,040
907
228



Split by

- None
- Gender
- Role

A CLOSER LOOK INTO CAPTAIN AMERICA: CIVIL WAR

Select Another Movie: Captain America: Civil War

Breaking Down the Dialogue

Examining the number of words spoken by each character, divided by gender and role

Gender

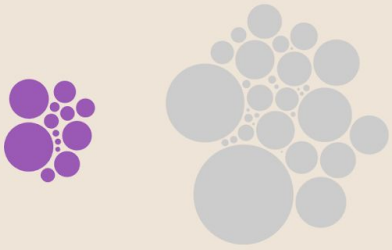
Male (Characters 72%, Dialogue 84%)
Female (Characters 28%, Dialogue 16%)

Number of Words Spoken

2,040
907
228

Female

Male



Split by

- None
- Gender
- Role

A CLOSER LOOK INTO CAPTAIN AMERICA: CIVIL WAR

Select Another Movie: Captain America: Civil War

Breaking Down the Dialogue

Examining the number of words spoken by each character, divided by gender and role

Gender

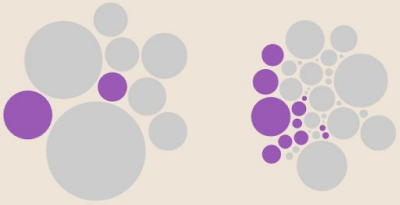
Male (Characters 72%, Dialogue 84%)
Female (Characters 28%, Dialogue 16%)

Number of Words Spoken

2,040
907
228

Lead

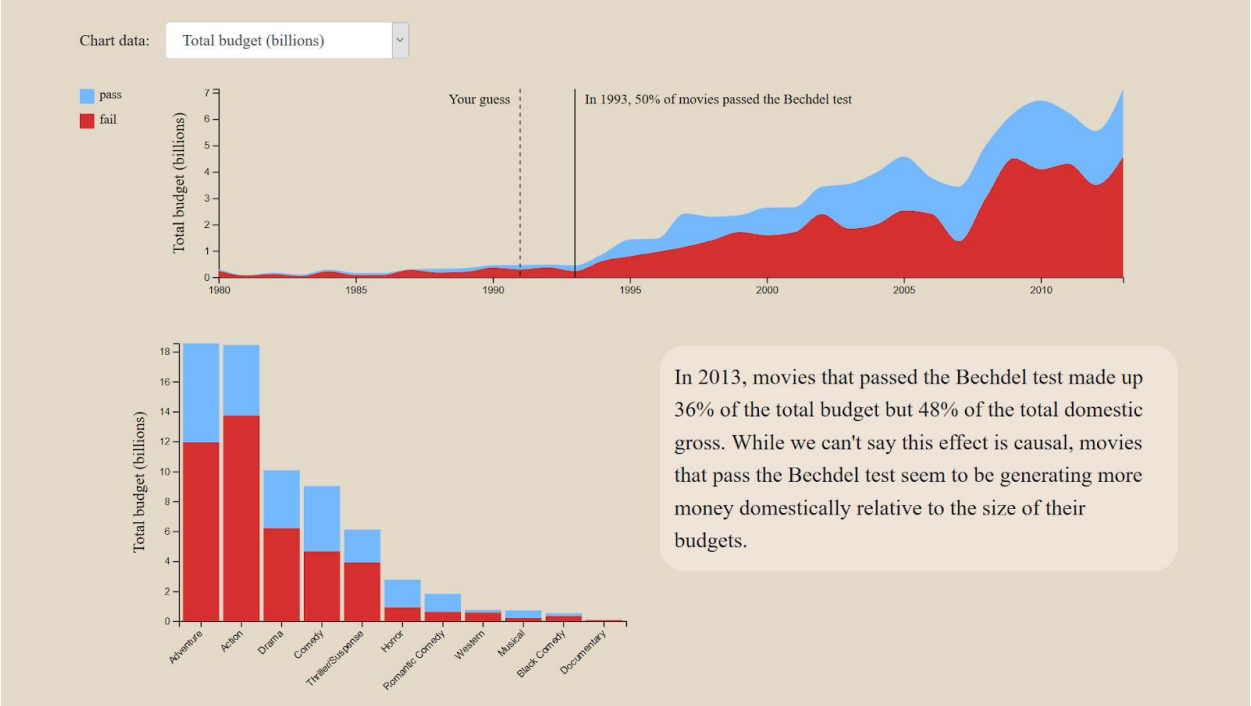
Supporting

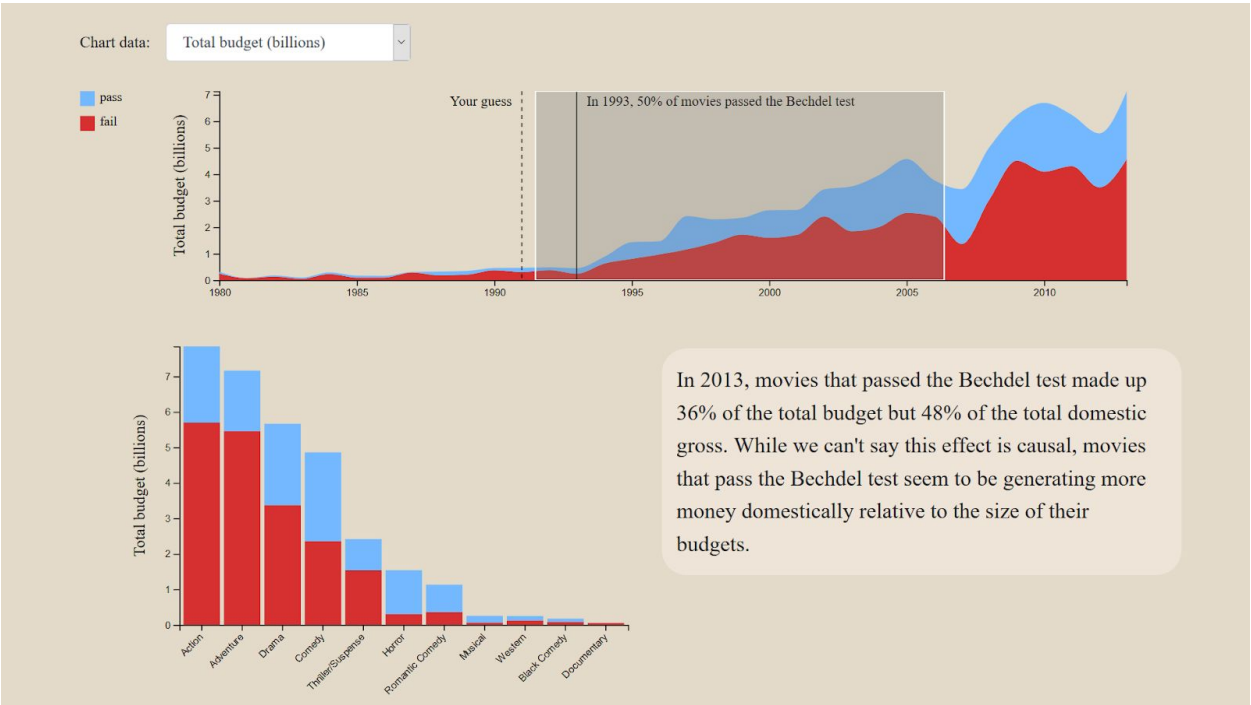


Split by

- None
- Gender
- Role

In the “Bechdel test over time” section, we implemented two linked visualizations. Changing the “chart data” select box changes the y-axis on both visualizations, and brushing over the area chart filters the genre bar chart.





Evaluation

The final version of our website includes all the visualizations we wanted to implement. In the process of creating these visualizations, we realized that our data is lacking in some aspects: for example, we're missing data about the crews of some of the 2016 films, and we don't have data on many movies before 1995. To improve this project in the future, we could search for more comprehensive data sources to use. This would lend more credibility to our analysis about the proportion of movies that have passed the Bechdel test over time. Additionally, we could try to further improve interactivity by integrating the second quiz question with the area chart itself (i.e. by making the "your guess" line draggable) and connecting the text more to the visualizations. Overall, however, we're happy with the structure of our website and the way our visualizations engage the user.